

This work is protected by copyright and other intellectual property rights and duplication or sale of all or part is not permitted, except that material may be duplicated by you for research, private study, criticism/review or educational purposes. Electronic or print copies are for your own personal, non-commercial use and shall not be passed to any other individual. No quotation may be published without proper acknowledgement. For any other use, or to quote extensively from the work, permission must be obtained from the copyright holder/s.

# **The role, delivery and implementation of video group consultations in UK general practice settings**

---

Eleanor Rachel Scott

Doctor of Philosophy (PhD)

March 2025, Keele University



## Table of Contents

---

<b>Abstract .....</b>	<b>i</b>
<b>List of tables .....</b>	<b>iii</b>
<b>List of figures .....</b>	<b>vi</b>
<b>Glossary of terms, concepts, and definitions .....</b>	<b>viii</b>
<b>List of abbreviations .....</b>	<b>xiii</b>
<b>Research output and training arising from this thesis .....</b>	<b>xviii</b>
<b>Funding acknowledgments .....</b>	<b>xxvi</b>
<b>Acknowledgements.....</b>	<b>xxvii</b>
<b>Chapter 1: Thesis introduction .....</b>	<b>1</b>
1.1 Introduction .....	2
1.2 Rationale to thesis development.....	2
1.3 Thesis aims and research questions.....	4
1.3.1 Aim and objectives.....	4
1.4 Overview of thesis structure.....	5
1.5 Stakeholder and patient and public involvement and engagement throughout the thesis .....	7
1.6 Overall thesis considerations .....	9
1.6.1 Choice of theoretical lens.....	9
1.6.2 Multimethod approach .....	9
1.6.3 Study population .....	10
1.6.4 Study sample sizes .....	10
1.6.5 Overall thesis contributions.....	11



1.7 Style of thesis .....	12
1.8 Chapter summary .....	13
<b>Chapter 2: Providing a context to the introduction of VGCs .....</b>	<b>14</b>
2.1 Introduction .....	15
2.2 Approach to literature review .....	15
2.3 Context to the thesis.....	17
2.3.1 The growth of newer ways of working in primary care.....	17
2.3.2 General practice at 'breaking point' .....	23
2.3.3 Initiatives behind group consultations .....	25
2.3.4 Harnessing digital approaches to care in general practice.....	36
2.3.5 The need for the digital inclusivity of HCPs and patients .....	39
2.3.6 The introduction of VGCs.....	42
2.4 Reflexivity .....	52
2.5 Chapter summary .....	53
<b>Chapter 3: Factors affecting the uptake and delivery of video group consultations for the management of long-term conditions in primary care general practice: a systematic review .....</b>	<b>54</b>
3.1 Introduction .....	55
3.1.1 Research question.....	56
3.1.2 Aim and objectives for the review .....	56

3.2 Methodological considerations.....	57
3.3 Methods.....	59
3.3.1 Registration .....	59
3.3.2 Stages of the systematic review.....	59
3.3.3 Search strategy.....	60
3.3.4 Study selection .....	67
3.3.5 Quality assessment .....	72
3.3.6 Data extraction.....	74
3.3.7 Data synthesis .....	74
3.4 Results .....	77
3.4.1 Identification of studies .....	77
3.4.2 Excluded studies.....	79
3.4.3 Study characteristics.....	79
3.4.4 General methodological considerations of included studies .....	104
3.4.5 Narrative synthesis .....	112
3.5 Discussion .....	135
3.5.1 Summary of main findings.....	135
3.5.2 Comparison with existing literature.....	137
3.5.3 Strengths and limitations.....	146
3.5.4 Implications for clinical practice.....	149
3.5.5 Implications for research.....	150
3.5.6 Implications of the systematic review for this thesis .....	151

3.6 Reflexivity .....	152
3.7 Chapter summary .....	153

## **Chapter 4: Philosophical, theoretical and methodological overview**

.....	<b>155</b>
4.1 Introduction .....	156
4.2 Overview .....	156
4.3 Philosophical, theoretical and methodological considerations.....	
.....	159
4.3.1 Philosophical underpinnings .....	159
4.3.2 Philosophical paradigms .....	160
4.3.3 Pragmatism .....	162
4.3.4 Pragmatism and multimethods .....	164
4.3.5 The multimethod approach used in this thesis .....	169
4.3.6 Justification of research design.....	171
4.3.7 Justification of quantitative methods .....	172
4.3.8 Justification of qualitative methods .....	173
4.4 Research process onion .....	174
4.5 Justification of theoretical lens .....	176
4.6 Virtual considerations .....	178
4.7 Reflexivity .....	181
4.8 Chapter summary .....	182

<b>Chapter 5: Cross-sectional survey methods.....</b>	<b>183</b>
5.1 Introduction .....	184
5.2 Methods .....	184
5.2.1 Cross-sectional studies.....	184
5.2.2 Considerations with cross-sectional studies.....	186
5.2.3 Survey questionnaires .....	189
5.2.4 Justification of choice of study methods.....	190
5.3 Overview of method.....	191
5.4 Study placement.....	192
5.5 Sampling and recruitment.....	192
5.5.1 Sampling technique .....	192
5.5.2 Sample size .....	193
5.5.3 Study population .....	193
5.5.4 Recruitment .....	194
5.5.5 Consent .....	198
5.6 Data collection .....	198
5.6.1 Survey questionnaire development.....	198
5.6.2 Components of the survey questionnaire .....	204
5.7 Data analysis .....	206
5.7.1 Descriptive statistics .....	206
5.7.2 Qualitative survey data .....	207
5.7.3 Approaches to qualitative content analysis .....	208
5.7.4 Approach to analysis taken.....	212

5.7.5 Qualitative content analysis vs. thematic analysis.....	218
5.8 Data reporting.. .....	219
5.8.1 Trustworthiness of content analysis .....	219
5.9 Reflexivity.....	221
5.10 Ethical considerations.....	222
5.10.1 Approvals .....	222
5.10.2 Consent and withdrawal.....	223
5.11 Chapter summary .....	223
<b>Chapter 6: Cross-sectional survey results.....</b>	<b>224</b>
6.1 Introduction .....	225
6.2 Overview of methods used .....	225
6.3 Results .....	226
6.3.1 Baseline characteristics of participants .....	226
6.3.2 Baseline characteristics of general practices .....	232
6.3.3 Use of VGCs.....	235
6.3.4 Defining VGCs.....	239
6.3.5 Roles in VGCs.....	245
6.3.6 Conditions managed using VGCs .....	248
6.3.7 Patients and VGCs .....	252
6.3.8 Practicalities of running VGCs .....	254
6.3.9 Choice of consultation .....	256
6.3.10 Set-up of VGCs .....	257

6.3.11 Barriers and challenges with VGCs.....	262
6.3.12 Training and skills for VGCs.....	269
6.3.13 Abstraction of results .....	282
6.4 Discussion .....	284
6.4.1 Summary of main findings.....	284
6.4.2 Comparison with implementation theories.....	290
6.4.3 Comparison with existing virtual and in-person group consultation literature.....	304
6.5 Strengths and limitations.....	309
6.6 Reflexivity .....	311
6.7 Chapter summary .....	314
<b>Chapter 7: Semi-structured interview methods .....</b>	<b>315</b>
7.1 Introduction .....	316
7.2 Methods .....	316
7.2.1 Qualitative interviews.....	316
7.2.2 Types of interview design .....	317
7.2.3 Consideration of other methods .....	318
7.2.4 Justification of choice of study methods .....	320
7.3 Overview of method.....	320
7.4 Study placement.....	321
7.5 Sampling and recruitment.....	322
7.5.1 Sampling technique .....	322

7.5.2 Sample size .....	322
7.5.3 Study population .....	324
7.5.4 Recruitment .....	325
7.5.5 Consent .....	328
7.6 Data collection .....	328
7.6.1 Interview topic guide development .....	328
7.6.2 Interview process .....	332
7.6.3 'Data saturation' and 'information power' .....	333
7.7 Data analysis .....	334
7.7.1 Rationale for RTA .....	334
7.7.2 Data analysis methods .....	336
7.8 Data reporting .....	356
7.8.1 Dependability .....	356
7.8.2 Transferability .....	357
7.8.3 Credibility .....	357
7.8.4 Confirmability .....	358
7.8.5 Authenticity .....	358
7.9 Reflexivity .....	359
7.9.1 Bracketing .....	359
7.9.2 Researcher positionality .....	360
7.10 Ethical considerations .....	361
7.10.1 Approvals and amendments .....	361
7.10.2 Consent and withdrawal .....	361

7.11 Chapter summary .....	362
<b>Chapter 8: Semi-structured interview results .....</b>	<b>363</b>
8.1 Introduction .....	364
8.2 Overview of the method used .....	364
8.3 Results .....	365
8.3.1 Sample size .....	365
8.3.2 Sample .....	366
8.3.3 Participant characteristics .....	366
8.3.4 Practice demographics .....	369
8.4 Thematic findings .....	370
8.4.1 Overview of final themes.....	370
8.4.2 Findings.....	374
8.5 Discussion .....	415
8.5.1 Summary of main findings.....	415
8.5.2 Comparison with implementation theories and frameworks .....	419
8.5.3 Comparison with existing virtual and in-person group consultation literature.....	427
8.6 Strengths and limitations.....	431
8.7 Reflexivity .....	434
8.8 Chapter summary .....	436



<b>Chapter 9: Discussion and conclusions .....</b>	<b>437</b>
9.1 Introduction .....	438
9.2 Thesis rationale revisited .....	439
9.3 Summary of thesis research aims, methods used and key findings .....	439
9.3.1 What are the factors affecting uptake and delivery of VGCs for the management of long-term conditions in primary care general practice? .....	444
9.3.2 What is the uptake and use of VGCs by HCPs across primary care general practice settings? .....	445
9.3.3 What are the experiences of HCPs implementing and demonstrating impact of VGCs across primary care general practice? .....	446
9.4 Overarching themes .....	448
9.4.1 The role, delivery and implementation of VGCs needs to be responsive to individual contexts .....	448
9.4.2 The diversity in terminology relates to pragmatic and contextual factors .....	450
9.4.3 The role of HCPs in VGCs .....	452
9.4.4 Evidence on the impact of VGCs is inconclusive .....	453
9.5 Strengths of the thesis .....	455
9.5.1 Systematic review and narrative synthesis .....	456
9.5.2 Cross-sectional survey .....	456
9.5.3 Qualitative interviews .....	457
9.6 Limitations of the thesis .....	458

9.7 Thesis ‘top tips’ for VGCs across general practice and research .....	462
9.8 Narrative interpretation of ‘top tips’ .....	474
9.8.1 Secure a launchpad for VGCs, in terms of time, funding and resources.....	474
9.8.2 Publish both research evidence and real-life case studies on VGCs.....	475
9.8.3 Advocate for a ‘protected role’ for VGCs .....	476
9.8.4 Conceptualise a shared definition of VGCs .....	477
9.8.5 Establish a network of practices using VGCs .....	479
9.9 Implications for clinical practice, research and my role .....	480
9.9.1 Implications for clinical practice .....	480
9.9.2 Implications for research .....	485
9.9.3 Implications for my role .....	487
9.10 Mobilisation of thesis findings .....	488
9.11 Conclusion .....	489
<b>References.....</b>	<b>490</b>
<b>Appendices.....</b>	<b>590</b>

## **Abstract**

---

### *Background*

Video group consultations [VGCs] are one approach to delivering care in general practice, using a virtual platform to consult with a group of patients with the same/similar medical condition. Yet, the ways in which COVID-19 impacted primary care led to a rapid implementation of VGCs, which meant that little is known about the ways this approach has been used, delivered, and implemented in general practice. The aims of this thesis are: i) to identify the evidence for VGCs, and ii) to explore the experiences of healthcare professionals [HCPs] implementing VGCs.

### *Methods*

Taking a multimethod, pragmatic approach, a systematic review, a cross-sectional survey study and a semi-structured interview study, were conducted to explore the role, delivery, and implementation of VGCs across UK general practice settings. Study samples included HCPs who are currently using, or have previously implemented/delivered VGCs in general practice. Findings from each study were synthesised to develop 'top tips' for implementation into practice. Stakeholder engagement and patient and public involvement were incorporated throughout.

### *Results*

The systematic review (n=4) highlighted a paucity of research evidence for long-term condition reviews in general practice, as an alternative to routine, clinical care. This was also evident in the cross-sectional survey of HCPs across UK general practice settings (n=36), which found variability in the uptake and use of VGCs, in particular regarding the

operationalisation of VGCs. This diversity in terminology was echoed further through interviews with HCPs (n=14), highlighting that the diversity of approaches are driven by differences in practice contexts, professional interests, patient demand and organisational priorities.

### *Conclusion*

This thesis has contributed to a greater understanding of the role, delivery, and implementation of VGCs in UK general practice settings, developing the '*SPACE*'<sup>1</sup> approach to aid implementation. Further work is needed to better understand how different UK general practice contexts influence the potential role of VGCs.

---

<sup>1</sup> *\*(SPACE: Secure a launchpad for VGCs; Publish both research evidence and real-life case studies on VGCs; Advocate for a 'protected role' for VGCs; Conceptualise a shared definition of VGCs; Establish a network of practices using VGCs)*

## List of tables

---

Table 1: Search headings for scoping search.....	61
Table 2: Search strategy (OVID – MEDLINE search) .....	63
Table 3: Criteria for inclusion and exclusion of studies in the review ...	68
Table 4: Data extraction table: Study description .....	82
Table 5: Data extraction table: Study participants .....	87
Table 6: Data extraction table: Study intervention .....	94
Table 7 : Data extraction table: Study outcomes .....	100
Table 8: CASP quality appraisal (2024).....	106
Table 9: MMAT quality appraisal (Hong et al., 2018).....	109
Table 10: Key differences between positivism and interpretivism (taken from Ramanathan, 2008) .....	161
Table 11: Benefits and limitations to a multimethods approach .....	167
Table 12: Stakeholder discussion points for cross-sectional survey study .....	200
Table 13: Major coding differences among three approaches to content analysis (taken from Hsieh & Shannon, 2005).....	209
Table 14: Phases of Content Analysis (Elo & Kyngäs, 2008; Vaismoradi et al., 2013).....	214
Table 15: Example of coding sheet .....	217
Table 16: Age and gender comparison of participants.....	227
Table 17: Baseline characteristics of participants.....	229
Table 18: Specialist qualifications related to the role .....	232
Table 19: Practice demographics .....	233
Table 20: Frequency and percentage of individual survey responses to each content analysis code category for question ‘If you have previously	

used video group consultations and stopped, why have you stopped?'	237
Table 21: Frequency and percentage of individual survey responses to each content analysis code category for question 'How would you define how you use video group consultations in your practice?'	242
Table 22: Roles involved in VGCs	245
Table 23: Clinical roles in VGCs	246
Table 24: Frequency and percentage of individual survey responses to each content analysis code category for question 'Do you manage any other conditions through video group consultations?'	250
Table 25: Number of patients in VGCs	252
Table 26: Frequency and percentage of individual survey responses to each content analysis code category for question 'What other factors have played a role in the set-up of video group consultations?'	260
Table 27: Frequency and percentage of individual survey responses to each content analysis code category for question 'Have you found any barriers or challenges in the uptake and use of video group consultation?'	265
Table 28: Frequency and percentage of individual survey responses to each content analysis code category for question 'What skills/training do you think are needed to deliver a video group consultation, if any?'	272
Table 29: Training in VGCs	276
Table 30: Frequency and percentage of individual survey responses to each content analysis code category for question 'What would you require from VGC training which would make you feel more comfortable in implementing the approach?'	281
Table 31: Remote group-based care formats (Papoutsi et al. 2022)	305

Table 32: Stakeholder discussion points for the semi-structured interview study .....	331
Table 33: Phases of RTA (Braun & Clarke, 2022a; Braun & Clarke, 2022b) .....	338
Table 34: Establishing trustworthiness during each phase of thematic analysis (Nowell et al., 2017) .....	351
Table 35: Participant roles.....	367
Table 36: Length in current role and years qualified .....	367
Table 37: Participant role descriptors .....	368
Table 38: Practice demographics .....	369
Table 39: Final themes, sub-themes and associated definitions.....	371
Table 40: Thesis key findings.....	441
Table 41: Finding the 'SPACE' for VGCs in general practice: 'Top tips' for implementation .....	464

## List of figures

---

Figure 1: Overview of thesis structure .....	6
Figure 2: Stakeholder and patient and public involvement and engagement throughout the thesis .....	8
Figure 3: Timeline of UK health policy .....	22
Figure 4: Terminology associated with VGCs .....	45
Figure 5: Researcher contributions.....	58
Figure 6: Stages of a systematic review .....	60
Figure 7: Narrative Synthesis (Popay et al., 2006) .....	75
Figure 8: PRISMA flowchart (Page et al., 2021) .....	78
Figure 9: Narrative Synthesis process and tools used (Popay et al., 2006).....	112
Figure 10: Convergent integrated approach to the narrative synthesis process (Stern et al., 2020) .....	113
Figure 11: Idea webbing of key findings .....	115
Figure 12: The four domains of ACAP (taken from Vasconcelos et al., 2019 description of Zahra & George's reconceptualised framework (2002)) .....	143
Figure 13: Study design .....	158
Figure 14: Multiphase multimethod approach .....	170
Figure 15: Research process onion (Saunders et al., 2009) .....	175
Figure 16: Nilsen's (2015) taxonomy of implementation theories, models and frameworks.....	177
Figure 17: Recruitment process for cross-sectional survey study .....	197
Figure 18: Components of the survey questionnaire.....	204
Figure 19: Number of years in current role and number of years in general practice.....	231



Figure 20: Practice size.....	234
Figure 21: Definitions of VGCs.....	239
Figure 22: Conditions managed using VGCs .....	248
Figure 23: Age ranges of patients in VGCs .....	253
Figure 24: How long does it usually take to deliver a VGC? .....	254
Figure 25: Which platforms are you using to deliver VGCs?.....	255
Figure 26: What has helped you to get VGCs up and running? .....	257
Figure 27: Requirements from VGCs training to enable implementation .....	278
Figure 28: Content Analysis abstraction mapping - main categories, generic categories and sub categories (Elo & Kyngäs, 2008).....	283
Figure 29: Categorisation of codes in relation to key findings.....	285
Figure 30: The constructs of NPT (May et al., 2015) .....	293
Figure 31: Schematic representation of findings from the analysis of the cross-sectional survey matched to the NPT constructs .....	295
Figure 32: Interactions between NPT mechanisms .....	303
Figure 33: HCP recruitment process for the semi-structured interview study.....	327
Figure 34: Clustering of central organising concepts .....	347
Figure 35: Links made between themes.....	348
Figure 36: Final Thematic Map.....	373
Figure 37: Contextual factors at a macro, meso and micro level .....	374
Figure 38: Conditions managed by VGCs .....	385
Figure 39: Capturing impact at macro, meso and micro levels .....	404
Figure 40: Linear trajectory of thematic findings .....	416
Figure 41: Circle trajectory of themes and sub-themes .....	417
Figure 42: Finding the 'SPACE' for VGCs in general practice infographic .....	463

## **Glossary of terms, concepts, and definitions**

---

**Additional Roles Reimbursement Scheme [ARRS]** – The ARRS was introduced as response to government commitments to improve access and workforce pressures in primary care. The scheme provides funding for additional roles to create bespoke multi-disciplinary teams, best suited to local populations and practices.

**Champion** – An individual who supports or facilitates the implementation or delivery of an intervention.

**Clinical Commissioning Groups [CCGs]** – CCGs were clinically-led statutory NHS bodies responsible for the planning and commissioning of health care services for their local area. They were dissolved in 2022 and replaced with Integrated Care Systems.

**Context** – Context is the setting in which something exists or occurs, inclusive of the physical, social, cultural, political, legal, and economic environments.

**Critically Appraised Topic [CAT]** – A CAT is a short summary of evidence on a specific topic, focused on a clinical question. It involves a systematic methodology to search and critically appraise primary studies.

**Directed Enhanced Services [DES]** – DES are non-core general medical services that local health boards must commission or provide by central governmental mandate. DES underpins the role of PCNs in empowering general practices to improve and widen primary care services.

**General Practice** – General practice is the name given to services provided by general practitioner [GP] surgeries, within primary care settings. General practice provides comprehensive primary care, offering acute, chronic, and follow-up care, and are often the first point of contact for patients to the healthcare system.

**Healthcare Professional [HCP]** – An HCP is an overarching term to encompass clinical roles such as GPs, nurses, pharmacists, allied health professionals and pharmacists. HCPs commonly deliver care for patients in health and care settings. In this thesis, HCPs are referred to in the context of general practice settings.

**Impact Accelerator Unit [IAU]** – A specialist knowledge mobilisation unit situated within Keele University's School of Medicine. The IAU works in addressing the evidence-to-practice gap, by both accelerating the impact of research evidence into clinical practice. The IAU collaborated with academic, clinical, public, commissioning and charity stakeholders to co-produce knowledge and innovations.

**Implementation** – Implementation is the process of putting a decision or plan into effect.

**Integrated Care Systems [ICSs]** – ICSs are partnerships of organisations which plan and pay for health and care services to improve care in their area. Each ICS is split into an Integrated Care Partnership [ICP] and an Integrated Care Board [ICB]. There are 42 ICSs in England, legally established in July 2022.

**Knowledge Mobilisation** – Knowledge Mobilisation is the process of optimising the use of knowledge generated from research, through a two-

way, active exchange of different types of the best available knowledge. This incorporates connecting and encouraging people to share explicit and tacit knowledge and to use this knowledge to inform their decision-making.

**Lay Involvement in Knowledge Mobilisation [LINK] Group** – The LINK group is comprised by a diverse range of members with personal, professional, and volunteering experience and knowledge. The LINK group supports patient and public involvement and engagement in the implementation of research evidence into real-life contexts.

**Long-Term Conditions [LTCs]** – LTCs are defined as ‘*a health problem that requires on-going management over a period of years or decades and is one that cannot currently be cured but can be controlled with the use of medication and/or other therapies*’ (NHS Data Model and Dictionary, 2024). In this thesis, the definition of LTCs is further described in Chapter 3.

**Multimethod** – Multimethod research refers to ‘*two or more studies using different methods, which address the same research question or different parts of the same research question or programmatic goal*’ (Morse, 2015, p.210). Compared to a mono-methodology, a multimethod approach integrates compatible aspects of different research methods, creating a conversation between data sets to deepen knowledge rather than triangulate knowledge (Bazeley, 2006; Bryman, 2006).

**Patient and Public Involvement and Engagement [PPIE]** – PPIE encompasses collaborating with patients and the public in all stages of research. PPIE members are not considered research participants but can offer their own experiences and expertise in ensuring research is

relevant, appropriate, and suitable for everyday clinical practice. Public members can include patients, family members of patients, carers, representatives from charities or social groups and health and social care service users.

**Primary Care** – Primary care services are the ‘front door’ of contact for patients seeking healthcare services, including prevention, diagnosis, treatment, and management of various health conditions. They encompass general practices, dental practices, optometrists, and community pharmacists.

**Primary Care General Practice** – Primary care general practice is the term used throughout the thesis to describe general practice and the wider services associated with running of general practice inclusive of primary care networks, integrated care boards, and integrated care systems.

**Primary Care Networks [PCNs]** – PCNs are groups of practice which work together with community, mental health, social care, pharmacy, secondary care, and voluntary services in their local area. PCNs aim to integrate primary care with secondary and community services.

**Quality and Outcomes Framework [QOF]** – QOF is a system which rewards and incentivises general practices for providing good quality care to their patients. It was introduced in 2004 and covers four main domains: clinical; public health; public health (additional services); and quality improvement. QOF is voluntary for practices.

**Research User Group [RUG]** – The RUG group was initiated in 2006, involving members with experience of long-term conditions, are carers or

close relatives of someone with a chronic condition. The RUG group provide advice on research design, research materials, research proposals, and collaborate with external organisations.

**Stakeholders** – *‘an individual or group who is responsible for or affected by health- and healthcare-related decisions’* (Concannon et al., 2019, p.459).

## List of abbreviations

---

**5YFW** – Five Year Forward View

**ACAP** – Absorptive Capacity

**ACP** – Advanced Clinical Practitioner

**AF** – Dr Andrew Finney

**AHP** – Allied Health Professional

**AM** – Dr Alice Moulton

**ANP** – Advanced Nurse Practitioner

**ARRS** – Advanced Roles Reimbursement Scheme

**BSLM** – British Society of Lifestyle Medicine

**CASP** – Critical Appraisal Skills Programme

**CAT** – Critically Appraised Topic

**CCG** – Clinical Commissioning Group

**CINAHL** – Cumulative Index to Nursing and Allied Health Literature

**CQC** – Care Quality Commission

**CRD** – Centre for Reviews and Dissemination

**DES** – Directed Enhanced Services

**DHSC** – Department of Health and Social Care

**DoH** – Department of Health

**EMBASE** – Excerpta Medica Database

**ES** – Eleanor Scott

**FCP** – First Contact Practitioner

**FREC** – Faculty Research Ethics Committee

**GP** – General Practitioner (Note: this can also mean General Practice.

For this thesis, GP will refer to General Practitioner)

**GPFW** – General Practice Forward View

**GPN** – General Practice Nurse

**GW-J** – Professor Gwenllian Wynne-Jones

**HCA** – Healthcare Assistant

**HCP** – Healthcare Professional

**HEE** – Health Education England

**HRA** – Health Research Authority

**IAU** – Impact Accelerator Unit

**ICB** – Integrated Care Board

**ICP** – Integrated Care Partnership

**ICS** – Integrated Care System

**i-PARIHS** – Integrated Promoting Action on Research Implementation in Health Services

**LINK** – Lay Involvement in Knowledge Mobilisation



**LS** – Dr Laura Swaithe

**LTC** – Long-Term Condition

**MEDLINE** – Medical Literature Analysis and Retrieval System Online

**MeSH** – Medical Subject Headings

**ML** – Marion Lynch

**MMAT** – Mixed Methods Appraisal Tool

**MS Teams** – Microsoft Teams

**NC** – Dr Nadia Corp

**NHS** – National Health Service

**NHSE** – NHS England

**NHSEI** – NHS England and NHS Improvement

**NHSLTP** – NHS Long-Term Plan

**NICE** – National Institute for Health and Care Excellence

**NIHR** – National Institute of Health Research

**NK** – Natalie Knight

**NPT** – Normalisation Process Theory

**OHID** – Office for Health Improvement and Disparities

**ONS** – Office for National Statistics

**PCN** – Primary Care Network

**PHE** – Public Health England

**PICO** – Population, Intervention, Comparison, Outcome

**PPIE** – Patient and Public Involvement and Engagement

**PRISMA** – Preferred Reporting Items for Systematic Reviews and Meta-Analyses

**PRISMA-S** – Preferred Reporting Items for Systematic Reviews and Meta-Analyses - Statement

**QNI** – Queen’s Nursing Institute

**QOF** – Quality and Outcomes Framework

**RCGP** – Royal College of General Practitioners

**REFAPIR** – Race Equality Framework for Public Involvement in Research

**RTA** – Reflexive Thematic Analysis

**RUG** – Research User Group

**SAG** – Stakeholder Advisory Meeting

**SAPC** – Society for Academic Primary Care

**SMA** – Shared Medical Appointment

**SPCR** – School for Primary Care Research

**STP** – Sustainability and Transformation Partnership

**STROBE** – The Strengthening and Reporting of Observational Studies in Epidemiology

**UK** – United Kingdom

**VGC** – Video Group Consultation

**VGW** – Virtual Group Visit

**WHO** – World Health Organisation

## Research output and training arising from this thesis

---

### Research awards

Awarded research prize for '*Best Poster Presentation*' at the NIHR School for Primary Care Research (Nursing) Conference (2024).

Awarded research prize for '*Best Poster Presentation*' at the Keele University Post Graduate Research Conference (2023).

Awarded research prize for '*Best Poster Presentation*' at the Keele University Faculty of Medicine and Health Science Post Graduate Research Conference (2022).

### Research publications

Scott, E., Swaithe, L., Wynne-Jones, G., & Finney, A. (2021). Embedding group consultations into practice: Perceptions of the general practice workforce. *Practice Nurse*, 12-16. (Appendix 1) (Chapter 2)

Scott, E., Swaithe, L., Wynne-Jones, G., & Finney, A. (2023). Describing the use and uptake of video group consultations in general practice by healthcare professionals during the COVID-19 pandemic. *Primary Health Care*. doi: 10.7748/phc.2023.e1801. (Appendix 2) (Chapter 5 & Chapter 6)

## **Oral presentations**

Scott, E., Moulton, A., Swaithes, L., Wynne-Jones, G., & Finney, A. (2024, September). The implementation and impact of video group consultations by healthcare professionals in primary care general practice: a semi-structured interview study. Royal College of Nursing International Research Conference. Northumbria University. Newcastle-upon-Tyne, UK. [in-person] (Chapter 7 & Chapter 8)

Scott, E., Moulton, A., Swaithes, L., Wynne-Jones, G., & Finney, A. (2024, March). The implementation and impact of video group consultations by healthcare professionals in primary care general practice: a semi-structured interview study. School for Primary Care Research Conference. Keele University. Keele, UK. [in-person] (Appendix 3) (Chapter 7 & Chapter 8)

Scott, E., Swaithes, L., Wynne-Jones, G., & Finney, A. (2023, March). The use and uptake of video group consultations by healthcare professionals in primary care general practice: a cross-sectional survey. Shared Medical Appointments Event. Newcastle University. Newcastle-upon-Tyne, UK. [in-person] (Chapter 5 & Chapter 6)

Scott, E., Swaithes, L., Wynne-Jones, G., & Finney, A. (2023, March). The use and uptake of video group consultations by healthcare professionals in primary care general practice: a cross-sectional survey. School of Nursing and Midwifery Faculty Research Showcase. Keele University. Keele, UK. [in-person] (Chapter 5 & Chapter 6)

Scott, E., Swaithes, L., Wynne-Jones, G., & Finney, A. (2022, November).

The use and uptake of video group consultations by healthcare professionals in primary care general practice: a cross-sectional survey. School of Nursing and Midwifery Faculty Research Theme: Health, Care and Wellness School Research Showcase. Keele University. Keele, UK. [in-person] (Chapter 5 & Chapter 6)

Scott, E., Swaithes, L., Wynne-Jones, G., & Finney, A. (2022, November).

The use and uptake of video group consultations by healthcare professionals in primary care general practice: a cross-sectional survey. Invited Speaker at The Haywood Hospital Lunchtime Seminar Series. Midlands Partnership NHS Foundation Trust. [online] (Chapter 5 & Chapter 6)

Scott, E., Swaithes, L., Wynne-Jones, G., & Finney, A. (2022, October).

The use and uptake of video group consultations by healthcare professionals in primary care general practice: a cross-sectional survey. Keele University and University of Wollongong Symposium. [online] (Chapter 5 & Chapter 6)

Scott, E., Swaithes, L., Wynne-Jones, G., & Finney, A. (2022,

September). The use and uptake of video group consultations by healthcare professionals in primary care general practice: a cross-sectional survey. Royal College of Nursing International Research Conference. Royal Welsh College of Music and Drama. Cardiff, UK. [in-person] (Chapter 5 & Chapter 6)

Scott, E. (2022, March). An exploration of the implementation, delivery and impact of video group consultations to manage long-term

conditions in primary care general practice. Keele University Nursing and Midwifery Seminar Series. [online]

Scott, E. (2022, March). An exploration of the implementation, delivery and impact of video group consultations to manage long-term conditions in primary care general practice. Keele University Impact Accelerator Research Expert Advisory Group. [online]

### **Poster presentations**

Scott, E., Swaithes, L., Wynne-Jones, G. & Finney, A. (2024, March). The use and uptake of video group consultations in primary care general practice: a cross-sectional survey study. School for Primary Care Research Conference. Keele University. Keele, UK. [in-person] (Appendix 4) (Chapter 5 & Chapter 6)

Scott, E., Swaithes, L., Wynne-Jones, G. & Finney, A. (2023, March). The use and uptake of video group consultations in primary care general practice: a cross-sectional survey study. Post-Graduate Research Conference. Faculty of Medicine and Health Sciences. Keele University. Keele, UK. [in-person] (Chapter 5 & Chapter 6)

Scott, E., Swaithes, L., Wynne-Jones, G. & Finney, A. (2022, May). The use and uptake of video group consultations in primary care general practice: a cross-sectional survey study. Faculty of Medicine and Health Sciences (FMHS) Post-Graduate Research Conference. Keele University. Keele, UK. [in-person] (Chapter 5 & Chapter 6)

Scott, E., Swaithes, L., Wynne-Jones, G. & Finney, A. (2021, June). An exploration of the implementation, delivery, and impact of video group consultations to manage long-term conditions in primary care general practice: a PhD study. Institute of Liberal Arts and Sciences (ILAS) Post-Graduate Research Conference. Keele University. Keele, UK. [online]

Scott, E., Swaithes, L., Wynne-Jones, G., & Finney, A. (2021, May). An exploration of the implementation, delivery, and impact of video group consultations to manage long-term conditions in primary care general practice: a PhD study. Faculty of Medicine and Health Sciences (FMHS) Post-Graduate Research Conference. Keele University. Keele, UK. [online]

### **Conference and symposium attendance**

1. Royal College of Nursing International Research Conference. In-Person Event (Newcastle-upon-Tyne). (2024, September 10<sup>th</sup>-12<sup>th</sup>)
2. School for Primary Care Research Conference. In-Person Event (Keele). (2024, March 11<sup>th</sup>)
3. Royal College of Nursing International Research Conference. In-Person Event (Manchester). (2023, September 6<sup>th</sup>-8<sup>th</sup>)
4. Shared Medical Appointment Event. In-Person Event (Newcastle-upon-Tyne). (2023, March 29<sup>th</sup>)



5. School of Nursing and Midwifery Research Showcase. In-Person Event (Keele). (2023, March 21<sup>st</sup>)
6. Keele University Post Graduate Research Conference. In-Person Event (Keele). (2023, March 14<sup>th</sup>)
7. School of Nursing and Midwifery Faculty Research Theme: Health, Care and Wellness Research Showcase. In-Person Event (Keele). (2022, November 9<sup>th</sup>)
8. Keele University and University of Wollongong Symposium. Virtual Event. (2022, October 11<sup>th</sup>)
9. Royal College of Nursing International Research Conference. In-Person Event (Cardiff). (2022, September 5-6<sup>th</sup>)
10. National Virtual Academic Conference. Virtual Event. (2022, July 4<sup>th</sup>)
11. Knowledge Mobilisation Summer School. Keele University. Virtual Event. (2022, June 21<sup>st</sup>-23<sup>rd</sup>)
12. Nursing in Practice Conference. In-Person Event (Birmingham). (2022, June 9<sup>th</sup>) (Provided content for an invited speaker)
13. Faculty of Medicine and Health Sciences (FMHS) Post-Graduate Research Conference. Keele University. In-Person Event. (2022, May 4<sup>th</sup>)
14. Developing Best Research in Primary Care and Community Nursing Conference. Virtual Event. (2022, March 31<sup>st</sup>)

15. 2021 Research Methods e-Festival. Virtual Event. (2021, October 25<sup>th</sup>-29<sup>th</sup>)
16. Best Practice Show. (2021, October 13-14<sup>th</sup>)
17. Royal College of Nursing International Research Conference. Virtual Event. (2021, September 7-9<sup>th</sup>)
18. Institute of Liberal Arts and Sciences (ILAS) Post-Graduate Research Conference. Keele University. Virtual Event. (2021, June 8<sup>th</sup>)
19. Faculty of Medicine and Health Sciences (FMHS) Post-Graduate Research Conference. Keele University. Virtual Event. (2021, May 6<sup>th</sup>)
20. The UK Knowledge Mobilisation Forum. Virtual Event. (2021, March 22-26<sup>th</sup>)
21. Institute of Liberal Arts and Sciences (ILAS) Post-Graduate Research Conference. Keele University. Virtual Event. (2020, November 23<sup>rd</sup>)

### **Formal research training**

MSc Research Methods in Health module at Keele University (January 2022-March 2022). PASS.

Basic NVIVO training through the Keele Doctoral Academy. (2021, May 18<sup>th</sup>)

Advanced NVIVO online training course as part of the Keele Doctoral Academy Research Summer School. (2021, August 12<sup>th</sup>)

### **Extra-curricular activities**

1. School of Nursing and Midwifery Postgraduate Research Student Representative for the Faculty of Medicine and Health Sciences at Keele University (November 2020 – November 2024)
2. Member of the Keele Research Conference Organisation Group at Keele University (November 2022 – June 2023)
3. Member of the Critically Appraised Topics [CAT] General Practice Evidence-Based Practice Group (November 2021 – present)
4. Member of the Primary, Community and District Nursing Research Group at Keele University (November 2022 – present)

## **Funding acknowledgments**

---

This PhD has been funded by the Faculty of Medicine and Health Sciences at Keele University as a PhD Studentship in the School of Nursing and Midwifery.

## Acknowledgements

---

I would like to acknowledge and thank my supervisory team; Dr Andrew Finney, Dr Alice Moulton, Professor Gwen Wynne-Jones and Dr Laura Swaithe, who not only have been an intrinsic part to the development of this thesis and developing me as a researcher, but as a huge support to me personally. I honestly don't have the words to describe the invaluable impact you have made on me as inspiring academics and individuals, and this research journey would not have been the same without you. I really can't thank you enough.

I would also like to thank the wider team that has contributed to this thesis, in particular the School of Nursing and Midwifery for providing the opportunity to conduct this research. I would like to acknowledge the friends and colleagues that have been a great support throughout this research journey, not only academically but on a personal level (sometimes providing a healthy distraction from work!).

I would like to acknowledge the professionals, patients and other stakeholders that have participated in this research, particularly the General Practice Nurse Evidence-Based Practice group, the Impact Accelerator Unit, the Research User Group and the Lay Involvement in Knowledge Mobilisation group at Keele University. This research would not have been possible without your support and participation.

Finally, I would like to thank my family and friends who unconditionally support my goals and dreams and have kept me grounded on this journey. To my parents who are always there to provide advice and support and have kept me going during difficult times. To my dad, I never knew how much I appreciated the laughter and jokes provided by you

during this time. To my mum, for the many hours of discussion and personal/professional mentoring you have provided me with your inspiring role across primary care. To my sister, thanks for always reminding me that there is more to life with your refreshing and relaxed attitude. And lastly, to my fiancé, Yaz, who has been my biggest inspiration indefinitely, as your own determination, strength and resilience has taught me that really 'anything is possible'!

# **Chapter 1: Thesis**

## **introduction**

---

## **Chapter 1: Thesis introduction**

---

### **1.1 Introduction**

This chapter introduces the context to the thesis, with a rationale and brief summary of the area of research. The overall aim and objectives for the thesis are outlined, informing the thesis structure. Lastly, an overview of thesis style is described, followed by a chapter summary.

### **1.2 Rationale to thesis development**

Prior to the development of this thesis, a General Practice Nurse [GPN] evidence-based practice group (Keele University, 2024a), proposed a Critically Appraised Topic [CAT] question: '*Do group consultations or shared medical appointments improve outcomes for patients with long-term conditions?*'.

This initial investigation by the CAT group led to a NHS England [NHSE] funded project, focusing on the experiences of implementing and delivering group consultations in general practice across the United Kingdom [UK], led by researchers at Keele University (Swaithes et al., 2021). Whilst studies had been published on group consultations in the UK (Booth et al., 2015), this study highlighted the need for further research into the experiences of primary care staff in implementing and delivering group consultations across UK general practice.

Although this knowledge gap was identified around the implementation of group consultations (Swaithes et al., 2021), the ways in which the COVID-19 pandemic impacted primary care services from 2020 to the present



day meant group consultations became practically and contextually problematic. The rapid implementation of virtual services across general practice settings was initiated as a way to reduce footfall, maintain contact with patients and address the backlog of appointments (Murphy et al., 2021). This meant that group consultations, by default, were delivered using virtual platforms due to the impact of COVID-19 restrictions; yet the evidence on this remained sparse.

The ways in which the COVID-19 pandemic impacted care delivery and the potential use of group consultations in primary care (Swaithes et al., 2021) led to the development of this thesis research question. Little research has been conducted on video group consultations [VGCs] in primary care general practice, highlighting the significance of this thesis in providing an evidence base for the future role, delivery and implementation in primary care.

This thesis presents the first multimethod exploration of the role, delivery and implementation of VGCs across UK general practices, offering 'top tips' for consideration in clinical practice. It is felt that this thesis will provide vitally important findings for those hoping to deliver and implement VGCs, considering the changing contexts of general practice, impacted by the COVID-19 pandemic.

### **1.3 Thesis aims and research questions**

#### **1.3.1 Aim and objectives**

The aim of this multimethod thesis is to explore the role, delivery and implementation of VGCs in primary care general practice. To achieve this, this thesis has two overarching aims:

- i) To identify the evidence for VGCs across primary care general practice, including the current use, uptake, and delivery purposes
- ii) To explore the experiences and perceptions of healthcare professionals [HCPs] regarding VGCs in primary care general practice

These aims were addressed through five individual objectives:

1. To systematically review current best evidence for the uptake and delivery of VGCs nationally and internationally (Chapter 3).
2. To undertake an online cross-sectional survey of general practice staff to identify current uptake and use of VGCs (Chapter 5 & Chapter 6).
3. To explore the experiences of HCPs who have implemented/delivered or have been involved with VGCs (Chapter 7 & Chapter 8).
4. To establish the views of key stakeholders and Patient and Public Involvement and Engagement [PPIE] regarding VGCs (Chapter 5 & Chapter 7).
5. To develop 'top tips' for the implementation and delivery of VGCs in primary care general practice (Chapter 9).

## **1.4 Overview of thesis structure**

Three distinct research methods are used to explore the role, delivery and implementation of VGCs in UK general practice settings, presented across nine chapters.

Figure 1 presents an overview of the thesis structure.

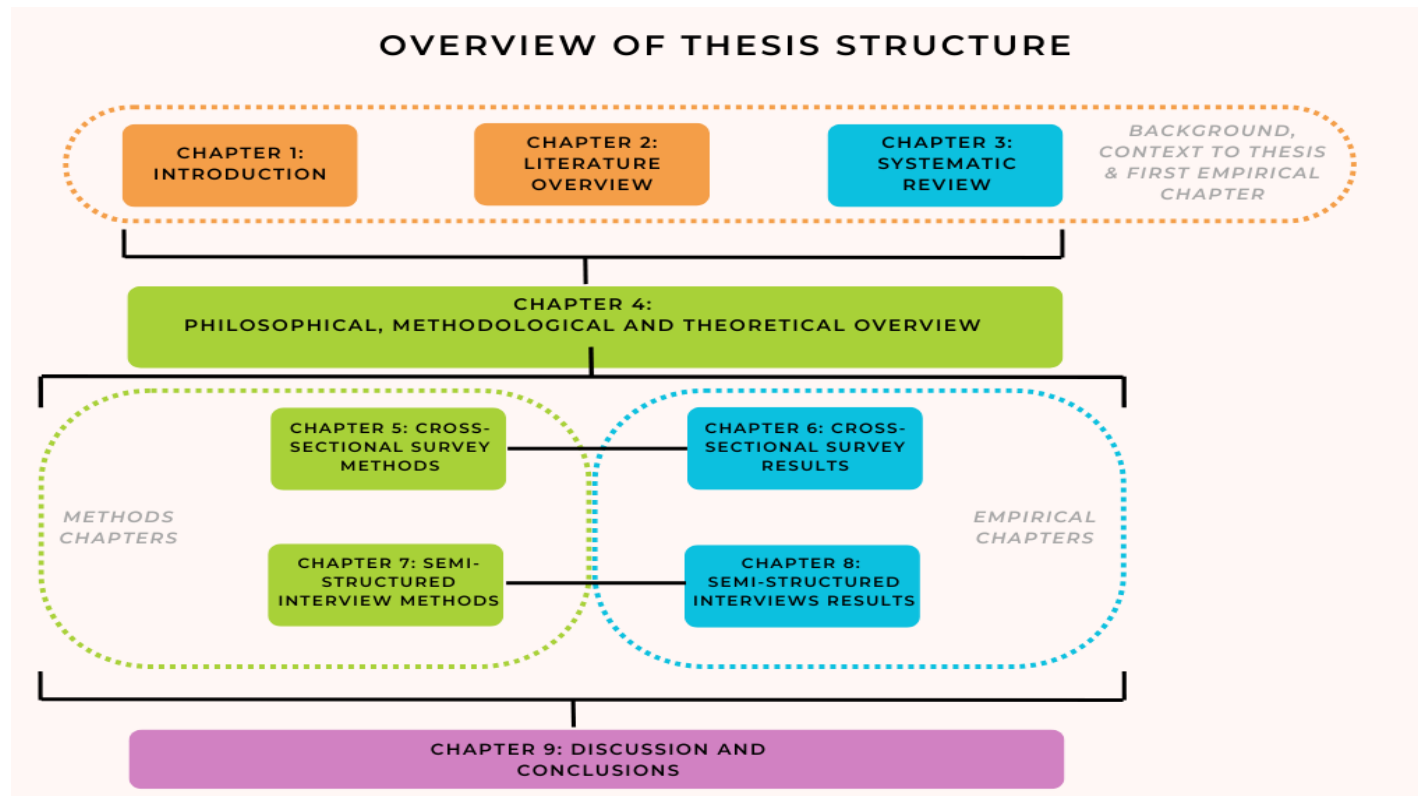


Figure 1: Overview of thesis structure

## **1.5 Stakeholder and patient and public involvement and engagement throughout the thesis**

The importance of engaging stakeholders, patients and the public throughout the thesis was essential to identify priorities for subsequent stages of the thesis, to obtain feedback on study materials and to present study findings, to ensure the relevance and practical impact of the research (Blackburn et al., 2018; Boaz et al., 2018). A timeline of stakeholder and PPIE involvement is presented in Figure 2.

## Stakeholder and PPIE involvement

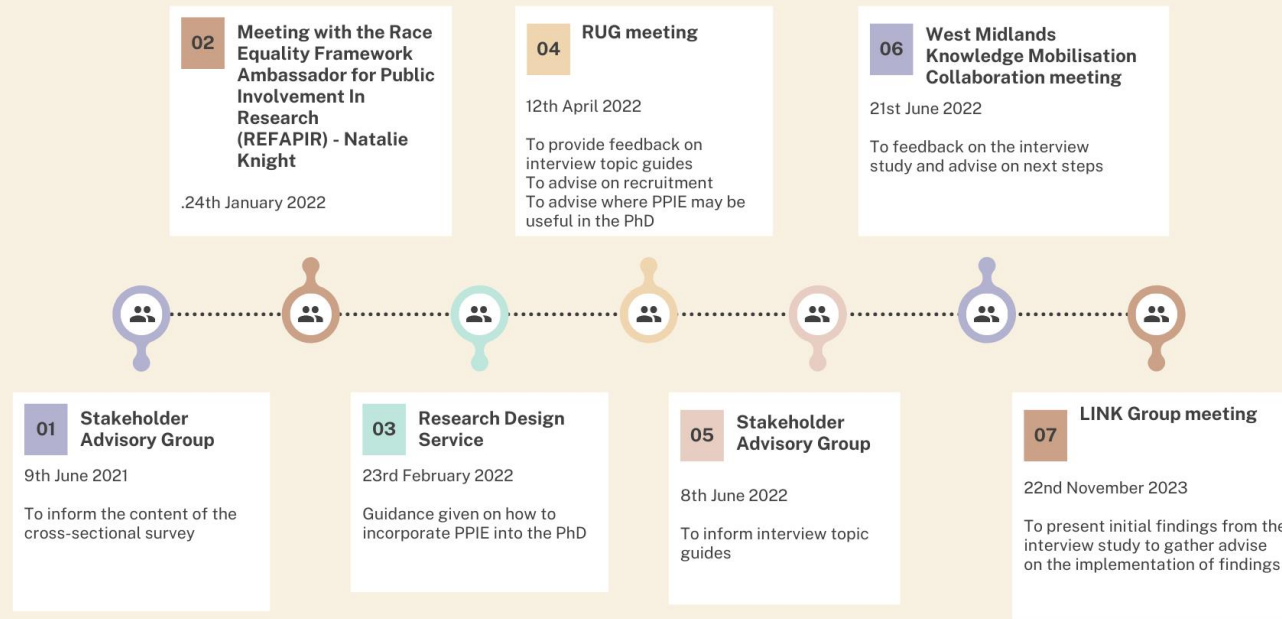


Figure 2: Stakeholder and patient and public involvement and engagement throughout the thesis

## **1.6 Overall thesis considerations**

### **1.6.1 Choice of theoretical lens**

Three implementation theories, including i) Normalisation Process Theory [NPT] (May & Finch, 2009; May et al., 2018); ii) Integrated Promoting Action on Research Implementation in Health Services [i-PARIHS] (Harvey & Kitson, 2016); and iii) Absorptive Capacity [ACAP] (Cohen & Levinthal, 1989), were considered pragmatically throughout the thesis to aid interpretation and applicability of data sets.

Choice of approach used to interpret data was dependent on usefulness of the theory in interpretation of particular data sets. Theories are outlined and discussed in sections relevant to study findings and interpretations.

Further justification for the choice of theoretical lens is provided in section 4.5.

### **1.6.2 Multimethod approach**

Phases or stages were used to describe the sequential and concurrent timings of each of the studies throughout the thesis. These terms were not used to imply that studies informed each other. Instead, studies were conducted independently with distinct research questions and methods, yet were viewed as complementary in contributing to the overall research question (Creswell, 2015).

Further justification for the multimethod approach taken is provided in section 4.3.5.

### **1.6.3 Study population**

Initially, inclusion of patients within the interview study was planned. However, during the iterative analysis of interviews with HCPs and general practice staff, a decision was made to increase the number of interviews planned and to consider patients for future studies on VGCs. This decision was made based on the need to address further questions related to the experiences of VGCs by HCPs and non-clinical general practice staff, which were not covered by participants in the intended initial sample size.

Further justification of the choices surrounding the study population are provided in 7.5.3.

As patient interviews were planned, consent forms and patient and public engagement and involvement meetings were held to inform patient topic guides and recruitment materials. Reference to the inclusion of patients is included throughout the thesis, yet, this should be considered in light of the planned inclusion of patients which did not occur.

### **1.6.4 Study sample sizes**

With regards to the cross-sectional survey study, an initial plan for 50 participants was intended. Yet, the inability to determine the overall use of VGCs across the UK negates the possibility of determine an appropriate, *a priori* sample size to address this research question.



Therefore, iterative considerations during data collection and analysis meant that a sample of 36 participants was sufficient to answer the research question. This was justified by the variety of participants included and the depth of information provided.

Further justification of the cross-sectional survey sample size is provided in section 5.5.2 and section 6.5.

A further consideration regarding sample size was the timing of the study and the pressures facing general practice as a result of the pandemic, which may have impacted the ability to obtain a larger sample population as initially intended.

In addition, the increase in sample size of HCPs and general practice staff for the semi-structured interview study was necessary in adequately answering the research question, due to the depth and richness of responses obtained in the initial sample. Whilst the sample size was increased to 20 participants, 14 participants took part in the study. This meant whilst 20 participants were planned, this was not possible. Discussion of the sample size for the interview study is also presented in section 7.5.2 and section 8.6.

### **1.6.5 Overall thesis contributions**

This thesis provides novel and confirmatory contributions to knowledge surrounding VGCs across UK general practice settings. When commencing this PhD in November 2020, there was no published research on VGCs in the UK, which led to the development of this thesis research question. However, during the PhD, further studies by Oxford

University (Papoutsi et al., 2022) were conducted, although, this research was focused on implementation of VGCs in a small geographical area over Oxford.

This PhD builds on and extends this knowledge base providing original contributions to the field. The systematic review within this thesis synthesised published research evidence on VGCs for long-term condition management in UK general practice. In addition, the cross-sectional survey study, which was published during the PhD, had an extended sample population from across the UK, providing a set of unique descriptive statistics in relation to the uptake and use of VGCs for HCPs. Furthermore, the semi-structured interview study highlighted the inability to demonstrate impact of VGCs, which provides an insight for further research to be conducted. The thesis findings were synthesised to produce a set of pragmatic and contextually based 'top tips', which act as practical guidance for HCPs implementing VGCs.

Consideration of future planned research on VGCs (Newcastle University, 2024; Nuffield Department of Primary Care Health Sciences, 2024) meant that this thesis not only provides unique contributions to the knowledge base on VGCs, but also provides a foundation for further work on this approach.

## **1.7 Style of thesis**

I conclude Chapter 1 with a justification of the writing style I have adopted for the thesis. The traditional style of reporting empirical research uses the third-person as it is objective but does not acknowledge that the researcher is part of the research process. Academics have argued that

writing in the first-person is acceptable in qualitative research where the researcher may directly influence the data collected (Mitchell & Clarke, 2018).

I have chosen to take a middle-ground approach when writing this thesis, using first-person where appropriate so that the reader can be knowledgeable of my part within the research process. In particular, first-person is used to demonstrate accounts of reflexivity throughout chapters. In spite of this, the use of the first-person was not appropriate for the entire thesis due to variation in data sets, including the collection and interpretation of quantitative data and choice of data analysis. The term 'candidate' is chosen to alternatively describe my role throughout the thesis.

## **1.8 Chapter summary**

The chapter introduced the thesis, provided a rationale to the aim and objectives. An overview of the thesis structure and style of thesis was then outlined. The next chapter provides the context to the thesis, integral to understanding the research question and the development of particular research methods.

# **Chapter 2: Providing a context to the introduction of VGCs**

---

## **Chapter 2: Providing a context to the introduction of VGCs**

---

### **2.1 Introduction**

The previous chapter has provided an introduction to the thesis rationale, aims and objectives. This chapter includes a literature review, outlining gaps in the literature, identifying the need for particular research questions. This is followed by a contextual account of primary care settings, and the ways in which COVID-19 'impacted' care delivery from 2020 to the present day. Various approaches to VGCs are explored briefly, as this will be considered in subsequent chapters. Key literature on the topic is highlighted, followed by a chapter summary.

### **2.2 Approach to literature review**

Prior to conducting a full systematic review, a narrative literature review was undertaken to inform the development of the thesis as a whole and to allow the development of the systematic review question (Sutton et al., 2016). Keary et al. (2012) proposed that a narrative literature review can capture a vast amount of research whilst also providing a basis for an evidence-based argument. This was important for the current study which spanned across multiple discourses in terms of national and contextual change, service transformation and the locality of general practice settings, to provide a contextual account of the factors contributing to the introduction of VGCs. Therefore, a narrative literature review was conducted, allowing for the identification of a broad range of studies across various disciplines.

Whilst not systematic in nature, this narrative literature review was conducted with careful consideration. Prior to searching the literature and before a research question had been identified, the research topic was considered through key concepts. This was centred around a Population, Intervention, Comparison and Outcomes [PICO] searching method (Keary et al., 2012), identifying subjects and key words that were relevant to the study, i.e. 'video', 'group consultation'; 'primary care'; 'general practice'. The literature was also scoped to identify key authors and sources, in relation to the area of research interest.

Electronic databases were searched, which included a mixture of health databases such as the Medical Literature Analysis and Retrieval System Online [MEDLINE] and the Cumulative Index of Nursing and Allied Health Literature [CINHAL], google scholar and other grey literature such as policy documents and national guidelines to contextualise the topic. Abstracts and full-text articles were identified, screening their reference lists to ensure key literature was not overlooked.

The literature was further critically analysed, looking for strengths and weaknesses, assessing how each study fits in line with the existing literature and identifying opposing arguments or debates between the research studies. This enabled a critical perspective on the topic areas throughout the literature review. The use of grey literature, including websites, policies, resources also enabled the gathering of literature surrounding the topic area to provide a well-informed context to the thesis.

The narrative literature review was an evolving and iterative process which started from commencement of the PhD, to account for recent

changes in the literature, as well as reflecting on existing knowledge. This process also allowed for the identification of gaps in the literature, which led to the formulation of a systematic review question.

## **2.3 Context to the thesis**

### **2.3.1 The growth of newer ways of working in primary care**

Over the last decade, the growth of newer ways of working in primary care has been influenced by a number of public health policies, aiming to tackle the changing contexts faced by the National Health Service [NHS], by setting a clear vision for the future and facilitating targets to overcome actual and potential challenges to health systems (World Health Organisation [WHO], 2020; WHO, 2021) (Figure 3).

In 2014, the *Five Year Forward View* [5YFW], delivered by NHSE, aimed to set out a new shared vision for the future of healthcare provision, by proposing new models of integrative and collaborative care and a reduction in the fragmentation of services, as a way to ‘future proof’ the NHS from challenges to come (NHSE, 2014). In particular, the idea of ‘meaningful local flexibility’ was employed to support the tailoring of services, negating a ‘one size fits all’ approach (NHSE, 2014).

However, the 5YFV (NHSE, 2014) was applied at a national level, including a diverse range of health systems with various organisational needs and health priorities. This led to a revision of the 5YFV in 2017, which addressed national concerns regarding primary care more specifically and proposed key improvements to be made by 2019 (NHSE, 2017a).

Coinciding with this revision, the *General Practice Forward View* [GPFV] (NHSE, 2016a) in 2016 was seen to be a 'turning point' for primary care. The GPFV proposed an additional funding of £2.4 billion per year and an increase in the workforce including an additional 5000 general practitioners [GPs] and 5000 other members of the multidisciplinary team (Gillam, 2017). Like the 5YFV, the GPFV proposed a collaborative approach to general practice service delivery with the need to facilitate roles which were considered to be mutually exclusive rather than specific to a particular discipline (Collins, 2016).

In addition, governmental support and drive to deliver the aims set out in the 5YFV (NHSE, 2014) and the GPFV (NHSE, 2016a) meant that in July 2018, the Prime Minister announced a new national five-year funding deal, aiming to demonstrate an increase in the NHS budget by £20.5 billion by 2023/2024, to strengthen healthcare delivery and to meet the vision set out in public health policies (NHS Finances, 2021; Prime Minister's Office, 2018).

This funding agreement thus provided a foundation for the introduction of the *NHS Long-Term Plan* [NHS LTP] (NHSE, 2019a) in 2019, which the NHS LTP (NHSE, 2019a) employed the need for collaborative care delivery focused on the demands of local populations, the establishment of effective commissioning systems and the flexibility of roles across the primary care workforce.

The establishment of Primary Care Networks [PCNs] were therefore developed from this plan in July 2019, recognising the need for integrative and accessible healthcare services for primary care, mental health, and community care (Marcello et al., 2020; NHS Digital, 2021a; NHSE, 2019a;



NHSE, 2020). This plan also aimed to increase the general practice workforce by 26,000 staff by 2024 through the Additional Roles Reimbursement Scheme [ARRS] (NHS Confederation, 2024; NHS Digital, 2021a; NHSE, 2023a). Additional roles such as community physiotherapists, clinical pharmacists and social prescribers were funded across PCNs to enhance accessibility and to meet the needs of specific local populations (NHSE, 2019a). Health coaches were also integral to the additional roles provided in primary care, but this role was not identified explicitly in the NHSLTP (NHSE, 2019a).

In parallel to the NHSLTP (NHSE, 2019a), NHSE further negotiated a *Five-Year Framework for GP Contract Reform* (NHSE, 2019b), addressing the potential to increase the sustainability of general practice and community services by implementing the NHSLTP (NHSE, 2019a) over the next five years and beyond (NHSE, 2019b). Key components of this framework related to increased funding to support PCNs, expansion of the primary care workforce, new quality improvement approaches and digitalisation of primary care services (NHSE, 2019b). In addition, Public Health England [PHE] (2019) published a national strategy in 2019, demonstrating national public health priorities from 2020-2025. This included the demand to promote healthier lifestyles, with increased mental health services, strengthening of the public health system, utilisation of new digital technologies and a personalised care delivery model (PHE, 2019).

With regards to commissioning and funding, the NHSLTP (NHSE, 2019a) introduced Integrated Care Systems [ICSs] to formally replace Sustainability and Transformation Plans [STPs], which work with PCNs so funds are directly allocated to PCNs to coordinate care for local

populations, facilitating commissioning decisions at systems level (Alderwick & Ham, 2017; Baird et al., 2016; Department of Health and Social Care [DHSC], 2021; Dunn et al., 2022; NHS England, 2016b; The Kings Fund, 2021). Services are delivered at 'place' level, meaning 'places' have no firm boundaries, defined according to what is meaningful to the local population (NHS England and Improvement [NHSEI] and the Local Government Association, 2021).

ICSs had existed formally since 2016 but lacked formal powers to initiate change as they remained voluntary in nature and relied on the willingness and commitment of organisations to collaborate (Dunn et al., 2022; NHSE, 2017a; The Kings Fund, 2021). Although from July 2022, 42 area-based ICSs were formally introduced, covering around 500,000 to three million individuals (Dunn et al., 2022). Each ICS was split further into two bodies: Integrated Care Boards [ICBs] and Integrated Care Partnerships [ICPs] (DHSC, 2022a). ICBs are responsible for controlling resources and planning healthcare services in their area, taking on the function of the previously established Clinical Commissioning Groups [CCGs]. Each ICB was combined with an ICP, a looser collaboration of NHS, local government, and local agencies responsible for developing an integrated care strategy to guide local decisions (DHSC, 2022a; NHSEI, 2021a).

However, despite plans to address newer ways of working in primary care through new models of care delivery and an effective commissioning system, the workforce issues facing primary care were most recently addressed by the *NHS Long-Term Workforce Plan* (NHSE, 2023b), proposing an extension to the success of the ARRS roles, which has already achieved an additional 29,000 multi-professional roles across primary care. Most recently, the role of the Enhanced Nurse has been

added to the ARRS, recognising the role of advanced nursing practice in primary care, additional to routine care provided (NHSE, 2024a). Increased funding for ARRS has also enabled the recruitment of newly-qualified GPs under this scheme (Baird & Wickens, 2024). Further to this, an additional primary care service development fund has been employed by NHSE (2023b) to support practices and PCNs to deliver the goals set out in the *Delivery Plan for Recovering Access to Primary Care* (NHSE, 2023a), including the ambition to provide a 'modern' general practice with support of harnessing digital technologies to improve access to primary care.

Therefore, striving for the growth of newer ways of working in primary care has involved the delivery of both national and local health policies which seek to address concerns regarding healthcare delivery models, roles within primary care, the expansion of the general practice workforce and the effectiveness of commissioning systems. Despite delivery of these policies, receptiveness, and capability of the general practice workforce in implementing these visions for healthcare delivery is to be explored.



Figure 3: Timeline of UK health policy

### **2.3.2 General practice at ‘breaking point’**

Despite striving for newer ways of working in primary care through national health policies (NHSE, 2014; NHSE, 2016a; NHSE, 2019a), it is well recognised that general practice teams are at ‘breaking point’, due to increased pressures in workload, time and staff shortages (Deakin, 2022; Hall et al., 2019; Karuna et al., 2021; Verhoef & Bloome, 2022). Coupled with the impact of the pandemic, general practices teams have faced a substantial increase in workload over the last few years, with an ageing population and greater complexity associated with increasing multi-morbidity (Khan, 2024).

NHSE (2023d) reported that in January 2023, general practice teams delivered 30 million appointments, demonstrating an increase of 11% from January 2020. In addition, in September 2023, around 31.1 million appointments were booked, averaging 1.48 million general practice consultations being delivered per working day (British Medical Association, 2023; House of Commons Library [HCL], 2023). However, despite an increase in the number of appointments, patient demand still remains high with limited access to appointments in primary care. Thus, the *‘Delivery Plan for Recovering Access to Primary Care’* (NHSE, 2023a) was published, which planned to tackle issues regarding access, projecting 50 million more appointments by March 2024.

In addition, the increased pressures faced in primary care has still not been adequately supported with funding, time, and resources, despite policies in place to address workplace burnout (Baird et al., 2016; Care Quality Commission [CQC], 2023; Mahase, 2021; NHS Digital, 2021c). The CQC issued a report stating that 20-28% of sickness absence is

related to 'stress/anxiety/depression' (CQC, 2023). Yet, this report did not focus on general practice staff specifically, and thus reasons of absence across primary care cannot be solely determined by these results. Most recently, the *NHS Long-Term Workforce Plan* (NHSE, 2023c) has projected a shortfall of 15,000 fully-qualified GPs by 2036, highlighting that newer ways of working are required and a broader skill mix. The increased impact of burnout has led to an issue of recruitment and retention across general practice. However, attempts to address this have been backed by the government, in which an additional £82 million can be used to enable changes to the ARRS scheme. This includes the ability to recruit newly qualified GPs into the NHS, whereby practices will be reimbursed for GP salary costs (Baird & Wickens, 2024).

With regards to funding, the newly announced '*General Practice Contract 24/25*' has projected an additional investment of £259 million (NHSE, 2024a; NHSE, 2024b). However, it is uncertain whether the global sum will increase by this due to how the funding will be allocated as most of the funding will be covering the extra patients, rather than increasing the payments per patient (Kaffash, 2024a; Kaffash, 2024b; NHSE, 2024a; NHSE, 2024b). Further to this, NHSE is able to take back any unspent ARRS money with no commitment to keep the money in general practice (Kaffash, 2024a; Kaffash, 2024b; NHSE, 2024a; NHSE, 2024b).

The impact of increased workload, lack of support for practices and clinicians, and a recruitment and retention crisis has led to these increased pressures becoming a significant issue over the last ten years. Often initiatives proposed to tackle burnout take an individual approach rather than addressing the problem at systems level, creating national concern regarding the future of the general practice workforce

(Montgomery et al., 2019). Therefore, the need to establish newer ways of working to meet the demands of, not only the patient population, but the needs of the general practice workforce is required to avoid a systems level burnout (Montgomery et al., 2019).

### **2.3.3 Initiatives behind group consultations**

#### **2.3.3.1 The rise of group consultations**

The growing need for newer ways of working to meet the demands and pressures facing primary care led to a rethinking of alternative ways to deliver general practice services (NHSE, 2019a). Group consultations were posed as a solution to the crisis faced in general practice, as a way to improve both patient self-management and to increase the efficient use of resources (Booth et al., 2015; Graham et al., 2021; Graham et al., 2022; Jones et al., 2019; Ramdas & Darzi, 2017; Scott et al., 2021; Swaithe et al., 2021).

However, the concept of delivering medical care to a group of patients is not a new phenomenon. Group consultations began in 1905, with pioneers such as Joseph Pratt (1907), who used the concept of group consultations to address health inequalities in patients suffering with tuberculosis, drawing on the aspect of a shared bond between patients with a common disease (Pratt, 1907). Similarly, group consultation methods were used as a means of providing group psychotherapy for soldiers and civilians during and following World War II, and recent studies of the group approach to manage depression have been effective (McDermut et al., 2001). In the US, the concept of 'shared medical

appointments' was championed by psychologist Edward Noffsinger in 1996, as a means to deliver more effective care and improve access for patients (Bartley & Haney, 2010; Noffsinger, 2009).

In the UK, the GPFV (NHSE, 2016a) has helped to drive the profile of group consultations in the UK by including this initiative as one of the '*Ten High Impact Actions*' (Royal College of General Practitioners [RCGP], 2018), as part of NHSEs *General Practice Development Programme* (NHSE, 2014), as a way to relieve pressures and increase capacity of the general practice workforce. This report identified the use of group consultations as a way to increase efficiency based on a case-study of improving access to primary care using a group consultation approach in Slough (NHSE, 2016c; NHSE, 2021).

In addition, the '*General Practice Ten Point Action Plan for General Practice Nursing*' (NHSE, 2017b) accelerated the need for the implementation of group consultations from 2018. This document explicitly highlighted the need to offer alternative models of care, digital solutions, and engagement with social prescribing (NHSE, 2017b). Most recently, group consultations have been posed as a way to achieve the '*Delivery Plan for Recovering Access to Primary Care*' (NHSE, 2023a), to increase the number of appointments, reduce backlog, respond to patient need and to adapt to newer ways of working. The national sponsorship of group consultations provided a platform for potential implementation into practice (NHSE, 2024c).



### **2.3.3.2 Definitions of group consultations**

Group consultations, also known as shared medical appointments or group clinics in the UK, provide the opportunity for a group of patients to consult in the presence of others with the same or similar medical condition, led by one or multiple HCPs (Imison et al., 2016; Ramdas & Darzi, 2017). Up to 15 patients can attend a group consultation focused on a particular medical condition, often lasting around 90 minutes (Ramdas & Darzi, 2017; Scott et al., 2021; Scott et al., 2023; Swaithes et al., 2021). Patients are met with a facilitator, usually a non-clinical member of staff who introduces and facilitates the running of the group (Scott et al., 2021; Swaithes et al., 2021). Any investigations required for the consultation are taken beforehand and the results of these are shown on a 'results board' and discussed within the group setting (Group Consultations Ltd., n.d; Scott et al., 2021; Swaithes et al., 2021). The clinician joins the group for around half of the consultation time, consulting with each patient individually in the presence of others and answering any clinical questions patients may have (Group Consultations Ltd., n.d). The session concludes by reflecting on health behaviours and setting future goals with the facilitator prior to the next appointment (Group Consultations Ltd., n.d).

However, this consultation model has remained far from standardised in primary care, as the definition and description of the approach implies (Booth et al., 2015; Jones et al., 2019). Group consultation models vary in definition and approaches, also being defined as 'shared medical appointments' (Graham et al, 2021; Graham et al., 2022), 'chronic care clinics' (Coleman et al., 2015; Wagner et al., 2001), 'group clinics' (ELC Works, 2024a), 'cluster visits' (Sadur et al., 1999), 'group medical

appointments' (Seesing et al., 2019; Weinger, 2003), 'self-management groups' (Steinsbekk, 2012), 'co-operative health clinics' (Beck et al., 1997; Scott et al., 1998) and 'group visits' (Burke et al., 2011; Jaber et al., 2006; Lavoie et al., 2013).

Booth et al. (2015) argued that the additional terms encountered in the literature create confusion, dissipating the effectiveness of individual models of group consultations. The above terms and descriptions reveal considerable overlap between the purpose and content of the different models (Booth et al., 2015). However, several models of group consultations align to the common origins in the writings of Noffsinger, promoting a therapeutic approach to health (Noffsinger, 1999a; Noffsinger, 1999b; Noffsinger & Scott, 2000).

Jones et al. (2019), more recently supported by the work of Graham et al. (2021) and Graham et al. (2022), made an important distinction between group consultations and other models of care in general practice, including usual individual appointments; education groups where education is the sole purpose of the session; and a series of 1:1 consultations. Group consultations are viewed as distinct in that they are a potential method of integrating self-management support with routine clinical care, as an alternative to a 1:1 clinic appointment (Booth et al., 2015; Clay & Stern, 2015; Kirsh et al., 2017; Hayhoe et al., 2017; Graham et al., 2021).

Group consultations can also be directly contrasted from education groups, in which the sole purpose of the appointment is education, rather than a 1:1 consultation with education and goal-setting as an additional support (Booth et al., 2015; Jones et al., 2019). Examples of this include,

shared medical appointments for nutrition and culinary education; (Delichatsios et al., 2015) and diabetes self-management education programmes (Sanchez, 2011). Although the ways in which group education is delivered across group consultation approaches is varied, it is viewed as fundamental to this model of care delivery (Booth et al., 2015).

Despite this lack of clarity, multiple definitions of the approach have been highlighted as beneficial from a systems approach to implementation due to increased flexibility and adaptability in practice (Jones et al., 2019; Wadsworth et al., 2019). Group consultations are therefore employed in primary care to meet the pragmatic needs of the staff, patients, and practice (Kwan et al., 2020).

#### **2.3.3.3 The use of group consultations**

The varied definition and approaches to group consultations has led to diversity in the use and delivery of the approach in primary care. Group consultations have been used across the UK and internationally to manage long-term conditions [LTCs] and the burden of chronic disease management (Jones et al, 2019; Sadikot et al., 2017; Scott et al., 2023).

Much of the existing literature of group consultations originates from the US. Ramdas & Darzi (2017) coined the use of shared medical appointments as a 'transformative innovation' in the US. Kirsh et al. (2017) support this notion by proposing several causal mechanisms for the beneficial effects of shared medical appointments in the US, including shared learning from others' experiences, development of equitable

relationships between HCPs and patients, promoting greater trust, increased time allocated for the consultation and enabling learning amongst both HCPs and patients alike (Kirsh et al., 2017). Interestingly, these causal mechanisms map closely to Yalom's (1995) theorised 'curative factors' of group psychotherapy identified by Bartley and Haney (2010) and the initial conceptualisation of group consultations in the US by Noffsinger (2009) (Bartley & Haney, 2010; Hayhoe et al., 2017).

The strongest clinical evidence of group consultations from the US is the systematic review focused on diabetes care, in which shared medical appointments demonstrated improvements in HbA1c and blood pressures (Edelman et al., 2010; Edelman et al., 2015). Although, group consultations have also demonstrated their effectiveness in a range of health conditions such as cancer care (Reed et al., 2015), cardiology (Pastore et al., 2014), chronic obstructive pulmonary disease (Vries et al., 2008), dermatology (Tkachenko et al., 2019), diabetes (Barnes et al., 2020; Burke et al., 2011; Cohen, 2011; Cole et al., 2013; Ganetsky et al., 2020; Kowalski et al., 2018; Nederveld et al., 2023), ear, nose and throat (Smith & Elias, 2016), health screening (May et al., 2014), chronic heart disease (Bartley & Haney, 2010), geriatrics (Lum et al., 2017; Lum et al., 2020), osteoporosis (Ayoub et al., 2009), substance misuse (Doorley et al., 2017) and trauma and orthopaedics (Powell & Biernacki, 2019). The Cleveland Clinic in the US offers group consultations in every department as a default and has been pioneering in driving this approach across US health systems (Bronson & Maxwell, 2004; Jones et al., 2019). Despite this, evidence of group consultations in the US is largely focused on provider perspectives and the experiences of low-income patient groups which offers limited transferability to other health systems and patient

populations (Graham et al., 2021; Graham et al., 2022; Lavoie et al., 2013).

Evidence from Australia demonstrates high levels of patient satisfaction for group consultations focusing mainly but not exclusively on type two diabetes (Egger et al., 2015). These findings were supported with a later study focusing on the effect of programmed shared medical appointments for chronic disease management in primary care, which concluded that programmed shared medical appointments can be used as an alternative to conventional 1:1 clinical care, including added benefits such as peer support, extra time with the clinician and the contribution of allied health professionals [AHP] (Egger et al., 2018; Egger et al., 2019). Also, a study by Stevens et al. (2016) found that shared medical appointments were an effective way of improving cultural competences and accessibility of Aboriginal health services. Although these results are not generalisable, this study suggests that shared medical appointments may offer a cultural safe tool to enhance access to primary care for Aboriginal and Torres Strait islanders (Stevens et al., 2016).

Whilst evidence from the US and Australia has helped to establish the use and scope of group consultations, the approach is still regarded as a relatively new concept in the UK. The first published work on group consultations was in secondary care in 2008 which involved a co-designed monthly NHS group consultations to support patients with inflammatory arthritis (Russell-Westhead et al., 2020). Through a qualitative analysis of 3,363 attendances using focus groups, feedback, and Disease Activity Scores, it was reported the enabling of group consultations are dependent on five key themes: Efficiency, Empathy, Education, Engagement and Empowerment (Russell-Westhead et al.,

2020). These themes coupled with patient satisfaction indicators were able to promote high levels of acceptability and sustainability of the group consultation model amongst patients across secondary care in the UK (Russell-Westhead et al., 2020). Since then, group consultations have been used within UK secondary care for conditions such as osteoarthritis (Blatgé et al., 2024), chronic knee pain (Asprey et al., 2012; White et al., 2012), weight management (Seager et al., 2012) and for young people with diabetes in socioeconomically deprived, ethnically diverse settings (Papoutsi et al., 2017; Papoutsi et al., 2019; Papoutsi, Hargreaves, Hagell, Hounscome, Skirrow, Muralidhara, Colligan et al., 2022; Papoutsi, Hargreaves, Hagell, Hounscome, Skirrow, Muralidhara, Colligan, Vijayaraghavan et al., 2022).

However, the use of group consultations in primary care is primarily used in the management of LTCs, aligning to annual Quality Outcomes Framework [QOF] reports (NHS Digital, 2021b). QOF is an annual reward and incentive programme for all general practices in England, evidenced through achieving points for resourcing and rewarding good practice (NHSE QOF, 2024). The initial pragmatic application of group consultations therefore resonates with a primary care setting, dependent on practice priorities, commissioning incentives and patient demand.

More recently, group consultations have been sporadically adopted across UK general practice (ELC Works, 2024a). By 2020, group consultations had been piloted in London, Birmingham, Sheffield, Slough, Northumberland, and Newcastle (Mackie & Holender, 2020). In particular, Brigstock Medical Practice focused on evaluating the suitability, feasibility and acceptability of diabetes group consultations through a pilot study (Gandhi & Craig, 2019) and Croydon CCG piloted shared medical

appointments for LTCs such as diabetes and COPD (Group Consultations Ltd., 2016). Group consultations demonstrated an improvement to access, had a positive impact on the number of missed appointments and aided medicine optimisation amongst patient groups (Gandhi & Craig, 2019). Group consultations have also been used in primary care for a range of LTCs including diabetes, hypertension, cancer care, respiratory conditions, as well as menopause, mental health, pain management, and ante- and post-natal care (Birrell et al., 2018; Coates et al., 2017; Craig, 2017; Hodgson, 2019; Jensen & Fage-Butler, 2016; Jones et al., 2019; Nelson & Craig, 2019; Rushton, 2023). However, much of the research conducted in UK primary care on group consultations is case-study based, which is classed as low-level of evidence, due to limited generalisability and subjectivity of the research with a lack of appraisal by experts (Centre for Evidenced-Based Medicine, 2021).

Training providers for group consultations (ELC Works, 2024a; Group Consultations Ltd., n.d) have also developed a number of case studies to demonstrate the use and scope of group consultations across the UK. However, the published evidence base on the viability of group consultations as an alternative model of care in primary care is still developing and expanding.

#### **2.3.3.4 Published evidence on group consultations in a UK primary care setting**

Early results of the group consultation approach have indicated that face-to-face group consultations have the potential to improve clinical

outcomes for patients (Booth et al., 2015; Jones et al., 2019; Wadsworth et al., 2019), in particular for patients with LTCs (Baqir et al., 2020; Jackson et al., 2019; Tang et al., 2023). Wadsworth et al. (2019) echoed the benefits of group consultations to aid LTC management and patient experience, yet the variety of formats increasingly employed in primary care settings requires a refinement of this healthcare delivery model by standardising measures of patient satisfaction and clinical outcomes. More recently, Birrell et al. (2023) coined group consultations as '*the fourth healthcare revolution*' in primary care, referring to the benefits of peer learning and group support evident within group consultations.

Most notably, the systematic review by Booth et al. (2015) focused on the effectiveness, appropriateness, and feasibility of group clinics for patients with chronic conditions demonstrating promising evidence for several biomedical measures in primary care, yet this did not extend across all outcomes (Booth et al., 2015). Booth et al. (2015) identified three future research priorities with regards to group consultations in the UK:

- i) increased UK-centred evaluations using rigorous research designs;
- ii) clearer definition of the different models of group delivery;
- iii) and clarification of whether group clinics are an alternative or replacement consultation model to individual consultations.

Whilst group consultations have demonstrated their effectiveness in practice for patients managing LTCs (Gandhi & Craig, 2019; Jones et al., 2019; Russell-Westhead et al., 2020; Tang et al., 2023), the research priorities demonstrated by Booth et al. (2015) echo the need for a more robust evidence base with clarification of the different models of group



delivery (National Institute for Health and Care Research [NIHR], 2020). However, Hayhoe et al. (2017) highlighted that whilst the overall number of studies is small in the UK, the strength of evidence is marred by heterogeneity of studies and settings, with an increasing evidence base for group consultations. Despite this, the need for further research into the most effective models of group consultations in the UK and where and how they can be implemented into practice, is necessary for future research (Hayhoe et al., 2017).

More recently, this was addressed by Swaithes et al. (2021) who evaluated the implementation and delivery of group consultations through the experiences of HCPs in UK general practice. This study has provided a unique contribution to the evidence base surrounding the implementation and delivery of group consultations, providing an insight to the ways in which this initiative can be used as a solution to the problems surrounding the sustainability of the general practice workforce. This work has been extended to address the barriers and facilitators of group consultations for the primary care workforce (Scott et al, 2021; Swaithes et al., 2021).

Graham et al. (2021) further contributed to the evidence regarding the implementation of group consultations, highlighting the barriers and facilitators to implementation of shared medical appointments in primary care for the management of LTCs from practitioner, patient, and carer's experiences. Both papers (Graham et al., 2021; Swaithes et al., 2021) highlight the need for further research to best understand the views of HCPs and patients with regards to the implementation of group consultations into UK general practice. Implementation is thus dependent on complex clinical and organisational settings which present as

substantial barriers, leading to a pragmatic approach to group consultation delivery and implementation within a complex healthcare system (May, 2006).

#### **2.3.4 Harnessing digital approaches to care in general practice**

The need to harness digital approaches to care delivery was previously addressed by PHE (2019) and NHSE (2016a; 2019a). The GPFV (NHSE, 2016a) launched a general practice consultation systems fund in 2017, which provided substantial funding to the CCGs at the time to support virtual consultations. Digitalising care was further advocated for in the NHSLTP (NHSE, 2019a) and the *Five-Year Framework for GP Contract Reform* (NHSE, 2019b), including video and telephone appointments. National bodies have further supported digital innovation in the NHS, including the previously established NHSX which has now integrated into the Transformation Directorate at NHSE to deliver newly reformed digital plans (DHSC & NHSE, 2022a; DoHSC & NHSE, 2022b; NHSX, 2021). In addition, the NIHR produced an evidence standards framework for digital health technologies, describing the standards for an evidence base on digital technologies in the NHS (NIHR, 2019). However, a lack of sustainability for digital care was reported by NHS Providers (2020), demonstrated by a succession of national initiatives to implement digital technologies into the NHS which have failed due to the absence of support from national bodies (Department of Health [DoH], 2011; NHS Digital, 2023; NHSE, 2020; NHSE, 2019a).

The primary motivation behind a digital primary care was posed as a way to improve access, improve quality and outcomes, reduce workload and

provide greater support for patients (Car et al., 2020; Gray et al., 2020; Khan et al., 2020). However, the ways in which COVID-19 impacted service delivery from March 2020 came as an unprecedented shock to general practice, with a pressing need to provide services whilst being physically distinct (Baynham & Hudson, 2020). This need created an almost universal access to video-conferencing platforms, a large expansion in telephone consultations and a wide-spread adoption of a digital triage model (Baird & Maguire, 2020), which has been more recently coined, “*augmented’ primary care*” (Stewart et al., 2021). An estimated 31 million fewer primary care appointments were booked between April 2020 and March 2021, compared to the previous 12 months (Fraser & Fisher, 2021; Watt et al., 2021). Prior to the pandemic, over 84% of consultations were in-person but this significantly dropped to 50% when the pandemic began (HCL, 2023). Within a few weeks, over 75% of general practices were delivering remote consultations via video (Baird, 2020) and over 50% via telephone by May 2020 (NHS Digital, 2020).

Establishing wider remote access to clinical IT systems, messaging platforms and shared health records was viewed as an enabler of care delivery rather than an end in itself (Charles & Ewbank, 2020; Stewart et al., 2021). Virtual consultation platforms such as AccuRx, a platform enabling remote consultation, SMS and exchanging of documents and images, increased significantly (Khan et al., 2020; Thornton, 2020). From 2023, AccuRx launched a Modern General Practice Access model, introduced as one of the four priorities in NHSE’s ‘*Delivery Plan for Recovering Access to Primary Care*’ (NHSE, 2023a), to enhance access and rapid prioritisation of patient’s needs (AccuRx, 2023).

Increased access as a result of the use of remote platforms perpetuated the opinion that general practice appointments were limitless, opening the floodgates to supply induced patient demand at the 'digital front door' (Mathew, 2021). Initially remote consulting in general practice was viewed positively by the public, sparking an unparalleled level of respect for NHS staff, but a short-lived desire to use services sparingly was soon overlooked rather than prioritising urgency and need (Marshall et al., 2020). The changing media depictions raised questions regarding the need for a remote-first policy and problems such as mis-diagnoses, difficulties with patient assessment, lack of continuity of care and digital inequalities were perpetuated (Gray et al., 2020; Mroz, Papoutsis & Greenhalgh, 2021; Mroz, Papoutsis, Rushforth et al., 2021). Murphy et al. (2021) also found that after an initial response to the pandemic crisis, some GPs found remote consulting to be a strain, missing the face-to-face contact and being concerned about the clinical risk involved.

Despite this, a digital approach to care has been deemed essential, revolutionising healthcare provision worldwide (Greenhalgh et al., 2020). The 'burning platform' of needing to reduce patient contact, whilst being able to see patients, helped to overcome some the barriers to technological advancements previously existing in practices, due to the increasing demand to deliver remote patient care (Baird & Maguire, 2020). Telehealth and video consultation methods have slowly been integrated into primary care and have now become a viable alternative to deliver the same level of patient care through a remote platform (Birrell et al., 2020). This need is echoed in international literature in which Mehrotra et al. (2020) described their experiences of converting to 'virtual

practices' in the US, as a direct response to the pandemic to meet patient's needs and to future-proof primary care services.

Despite this, whether evidence can be translated into general practice is unclear with issues including limited time and resources and implementation being slow and unsystematic (Khan et al., 2020). Prior to the pandemic, support for the implementation of remote consultation at a local level was viewed as inconsistent, based on practice priorities and pre-established clinical support (Baird & Maguire, 2020; Shaw et al., 2021). Studies tended to be small scale, focusing on initial adoption in a research context, with little evidence exploring the technological, contextual, and practical challenges to be overcome if video consulting is to become more widespread (James et al., 2021; Banks et al., 2018).

### **2.3.5 The need for the digital inclusivity of HCPs and patients**

The need to be digitally inclusive, requiring general practice to offer a choice of modality, was championed by NHSE (2019c) and Health Education England [HEE] (2019a) prior to the pandemic (Greenhalgh & Rosen, 2021). This provided guidance on ways in which healthcare providers and commissioners can ensure that service delivery is as digitally inclusive as possible (HEE, 2019a; NHSE, 2019c).

The requirement for nurses to become digitally literate has been supported by national reports from HEE (2019a) and the Royal College of Nursing (n.d) and has been advanced since the impact of the pandemic on general practice services. In 2019, the *Topol Review* (HEE, 2019a) was published which aimed to prepare the healthcare workforce, through

education and training, to deliver the digital future of healthcare and embrace digital inclusivity (HEE, 2019a). A digital readiness programme (HEE, 2019b) was also produced by HEE to support the aims set out in the *Topol Review* (HEE, 2019a). This programme primarily focuses on supporting senior leaders, supporting digital experts, building a future digital workforce, establishing the *NHS Digital Academy* (HEE, 2021a), enhancing the digital literacy of the workforce and embedding of social care into the programme (HEE, 2019b).

Locally, creating digitally ready GPNs has been championed, producing a programme supported by NHSE's '*Ten-Point Plan for General Practice Nursing*' (NHSE, 2017b), to embed technology-enabled care services into clinical practice (Beany et al., 2019; Chambers & Schmid, 2018; Chambers et al., 2018). This programme aims to create a digitally ready workforce with the ability to adopt technology-enabled care, where appropriate, into primary care services (Beany et al., 2019; Chambers & Schmid, 2018; Chambers et al., 2018). By 2023, the Queens Nursing Institute [QNI] (2020) found that the highest users of technology-enabled care nationally were general practice teams (QNI, 2020; QNI, 2023). A digitally ready workforce is thus believed by Beany et al. (2019) to be central to the next stage of digital transformation in healthcare.

However, despite the need for HCPs to be digitally ready, the receptiveness of the patient population to successfully implement a digital approach to care is paramount. Digital literacy can be defined as '*the capabilities that fit someone for living, learning, working, participating and thriving in a digital society*' (HEE, 2018, p.2). Prior to the pandemic, 4.3 million people were reported to have no digital skills, with over 75% of these being over 65, and a further 6.4 million adults were estimated to

only have limited abilities online (Lloyds Bank, 2018; Office for National Statistics [ONS], 2019).

Thus, the challenge of digital exclusion has become increasingly apparent, undoubtedly exacerbating marginalisation of some already-vulnerable groups, often patients with the greatest health needs (Majeed et al., 2020; Weiss et al., 2018). In attempt to address some of these inequalities, the Office for Health Improvement and Disparities [OHID] was recently launched as a new body to tackle health disparities across the UK and aid disease prevention reducing pressure across the health system (DoH OHID, 2021). Further to this, NHSEI has developed an approach, known as *Core20PLUS5*, focusing on reducing health inequalities by targeting efforts at people living in the 20% most deprived areas, according to the Index of Multiple Deprivation (NHSEI, 2021b).

Despite this, the ways in which the pandemic impacted general practice service delivery required the almost universal need for digital inclusion and digital readiness of both HCPs, practices and patients alike. The service re-design experienced within primary care required a willingness to adapt and learn, and adoption of digital delivery of care in systems-thinking (Ramdas & Swaminathan, 2021). Post-pandemic, the use of remote consultation by default is an ethical case-based judgement, where a decision regarding whether digital technology is appropriate for the patient, practice staff and the wider community (Greenhalgh & Rosen, 2021).

### **2.3.6 The introduction of VGCs**

#### **2.3.6.1 Defining VGCs**

The swift implementation of VGCs into general practice was initially posed as an initiative to tackle the growing pressures and demand facing the NHS, aiming to modernise, digitalise and future proof health care services (Papoutsi & Shaw, 2021; Papoutsi et al., 2022). Building on the viability of group consultations in UK primary care settings, VGCs grew as a direct response to the impact caused by the COVID-19 pandemic, with the need to provide physically distant, remote care (Baird & Maguire, 2020).

VGCs are considered to be an overarching term to describe a virtual delivery of care with a group of patients who share the same or similar health concern (Birrell et al., 2020). Like group consultations, VGCs were developed as an alternative or replacement for 1:1 clinical care for LTC reviews, with aspects of peer support and patient education (Booth et al., 2015; Graham et al., 2021; Jones et al., 2019; Papoutsi et al., 2022).

Similar to the group consultation model, VGCs include a clinical consultation with one or more clinicians, patient education, goal-setting and peer support but use a virtual platform (ELC Works, 2024a; Group Consultations Ltd., n.d; Redmoor Health, 2024). Clinical data is displayed in the form of a virtual 'results board' to aid patient education and clinical management (ELC Works, 2024a; Redmoor Health, 2024). The virtual nature of the approach has led to the use of a 'carpark', in which patients are able to use this space to gather thoughts and ideas that can be addressed after the VGC (ELC Works, 2024a; Redmoor Health, 2024). Delivery of VGCs is dependent on three key roles, including a technical



facilitator, a clinic co-ordinator, and a clinician (ELC Works, 2024a; Group Consultations Ltd., n.d). However, delivery of VGCs is pragmatically applied, with practices adapting consultation styles according to practice staff, resources, time, and the needs of patients.

Due to the rapid initiation of VGCs, implementation was initially directed by training providers, providing guidance on the set-up, delivery, and evaluation of VGCs in primary care (ELC Works, 2024a; Group Consultations Ltd., n.d; Redmoor Health, 2024). This has been more recently supported with a series of webinars, an implementation toolkit (FutureNHS, 2021a), a newly repurposed E-learning for Healthcare [e-LFH] VGC programme (E-learning for Healthcare, 2021), developed with NHSE and a NHSEI support package (FutureNHS, 2021b). A number of training providers including, ELC Works (2024a), British Society of Lifestyle Medicine [BSLM] (2024), Group Consultations Ltd. (n.d) and Redmoor Health (2024) have demonstrated early use of VGCs through a series of webinars, written and online case studies on the management of conditions such as ante-natal care, anxiety, asthma, chronic pain, diabetes, cancer care, lifestyle medicine, and long-COVID (Bradley et al., 2021a; Bradley et al., 2021b; BSLM, 2024; ELC Works, 2024b; ELC Works, 2024c; ELC Works, 2024d; Kerbel & Craig, 2021; Redmoor Health, 2024).

This influence has directly impacted the ways in which VGCs are defined and used in practice, with little research evidence on VGCs from primary care setting in the UK when they were first introduced. VGCs are still regarded as in their infancy, in which pragmatic application of the approach has led to varying definitions, aiding a wider conceptualisation of VGCs than previously established group consultations (Papoutsis &

Shaw, 2021; Papoutsi et al., 2022). The majority of papers on VGCs were published on or after 2020 as many models became prominent during or after the COVID-19 pandemic.

#### **2.3.6.2 Evidence of VGCs in primary care**

The definition and use of VGCs can be ambiguous and may be misunderstood (Papoutsi et al., 2022). The growing body of literature on VGCs, diversity in terminology to describe the approach and its use in practice has been highlighted (Papoutsi et al., 2022). Similar to group consultations, multiple terms and definitions of VGCs exist as a result of the contextual and pragmatic factors associated with primary care over recent years. Therefore, the word cloud was generated by systematically noting terminology encountered in the identification of relevant studies on VGCs. This was conducted as an iterative process, in conjunction with the identification of studies included in the contextual literature review (Chapter 2). A visual representation of the terminology used to describe VGCs is presented in Figure 4.



Training providers for VGCs have provided a number of case studies to evidence the use of VGCs for LTC management in primary care, but the extent to which a clinical consultation takes place is varied (Bradley et al., 2021a; Bradley et al., 2021b; BSLM, 2024; ELC Works, 2024b; ELC Works, 2024c; ELC Works, 2024d; Kerbel & Craig, 2021; Redmoor Health, 2024). The clinical component of VGCs is not always evidenced through the collection of biometric data or vital signs but may be demonstrated through individual goal-setting and behavioural change (Booth et al., 2015; Papoutsi et al., 2022). In addition, a case study by Gibson et al. (2022) investigated the effectiveness and acceptability of VGCs for menopause symptom management across a primary and secondary care interface, incorporating a 1:1 consultation into the group setting. Yet the purpose of this VGC was for symptom management and therefore was considered to be educational, and not to replace a routine consultation in primary care (Gibson et al., 2022). Furthermore, virtual structured diabetes education programmes in primary care are often mistaken for VGCs, due to the sole purpose of the programme to provide education for the management of diabetes (Butler et al., 2022; Northern et al., 2021). This overlap between an educational model and a clinical consultation creates an ambiguity in determining the purpose and scope of VGCs for the management of LTCs, as an addition and/or replacement for routine care in general practice.

Evidence in international primary care settings supports the use of VGCs as a clinical consultation but evidence is often case-study based or has small sample sizes, relative to particular health systems, practice sizes and patient populations. Tokuda et al. (2016) published the first international study in primary care exploring the use of VGCs to manage

patients with diabetes in Guam and Honolulu, with a relatively small sample size. With regards to case studies, a retrospective study of 22 patients using VGCs, demonstrated weight loss in an obesity-focused virtual programme (Shibuya et al., 2018). This study analysed the effects of participation in VGCs versus face-to-face group consultations over a 6-month period. However, Shibuya et al. (2018) found that patients attending VGCs had comparable weight loss to those attending face-to-face groups, yet this was based on a small sample size (n=22). Moreover, a case study by Patel (2021) demonstrated the feasibility of a virtual diabetes reversal programme, as an addition to an individual consultation, to collect biometric data to demonstrate the efficacy of the programme. This study recognised the feasibility of VGCs over in-person group consultations, although, only included 12 participants over a 12-week time period.

With regards to a UK secondary care setting, a study by Wong et al. (2021) found significant clinical benefits of using VGCs for the management of idiopathic intracranial hypertension due to the person-centred approach demonstrated. In particular, reduced repetition of information meant patients were able to experience a more fulfilling session with greater time to discuss information and lifestyle measures to support patient care. Additionally, Lynch (2022) conducted an evaluation of VGCs in an outpatient setting which demonstrated the utilitarian (useful) and emancipatory (freedom) value of VGCs at a micro, meso and macro level, which has significant benefit for outpatient clinical care models. Lynch (2022) argued that the visible benefits of VGCs represent their utilitarian value, as they are tangible, practical benefits that can be measured, and the invisible benefits of VGCs represent their

emancipatory value, recognising the intangible benefits that contribute to a patient's overall well-being and sense of control over their health. Thus, this study (Lynch, 2022) highlights the need to focus not only on the visible benefits of VGCs but also recognise the hidden benefits of the approach.

Across international secondary care settings, most of the published literature refers to programmes in speciality clinics, such as neurology (Mahajan et al., 2022), diabetes (Bisno et al., 2022; Reid et al., 2018), chronic pain (Thompson-Lastad & Gardiner, 2020), geriatrics (Yourman et al., 2024) and oncology (Halloway et al., 2022). Yet, there is a lack of distinction between the therapeutic and clinical nature of the VGCs listed creating ambiguity with regards to the scope of VGCs in international secondary care settings. In particular, whilst studies focus on clinical conditions, VGCs often are conducted as support mechanisms or therapeutic groups for patients. Mahajan et al. (2022) found that positive patient feedback highlighted the therapeutic nature of VGCs, rather than demonstrating improvements in clinical outcomes. Yourman et al. (2024) found that patients preferred VGCs over in-person group consultations due to convenience and accessibility, which had a positive impact on their wellbeing. Although, this study was based on a very homogeneous sample and therefore results may be different in greater diverse populations, In addition, Bisno et al. (2022) and Reid et al. (2018) highlighted reduced diabetes distress through the use of VGCs, which led to subsequent increased attendance at clinic appointments. Halloway et al. (2022) also emphasised the importance of addressing the psychosocial and behavioural aspects of managing cancer, as well as clinical care. This therapeutic emphasis further extended to clinicians. in

which Thompson-Lastad & Gardner (2020) found positive benefits of group consultations for clinician wellbeing. However, this primarily referred to in-person group consultations as opposed to VGCs (Thompson-Lastad & Gardner, 2020).

Also, the Cleveland Clinic in the United States has reported use of VGCs seeing around 130 patients a month from 2020-2021 for type 2 diabetes and obesity and has run VGCs throughout the pandemic as an alternative to clinical care or face-to-face services (Cleveland Clinic, 2021). Furthermore, the University of California's Psychiatry Department had offered group consultations for 15% of adult psychiatry services in 2019, but since COVID-19, the department switched to running group clinics virtually as part of a tele-psychiatry project (University of California, 2021). Yet the specialised nature of these international secondary care settings hinders the applicability of results to a UK primary care setting.

Despite this clinical model of VGCs, virtual education programmes delivered in primary care internationally are often viewed synonymously but have the sole purpose of delivering education and offering peer-support through a group dynamic (Banbury et al., 2016). In particular, educational programmes in primary care related to diabetes and weight management were identified predominantly within the literature (Azar et al., 2015; Brown et al., 2020; Dinh et al., 2023; Mash & Cairncross, 2023; Nuñez et al., 2022; Patel et al., 2023). These groups were often described as preventative rather than for the management of conditions. For example, prevention programmes for diabetes (Moin et al., 2018) or weight management programmes for obesity (Azar et al., 2015). This approach relies heavily on the self-management of patients and fosters a personalised and holistic approach to the management of health

conditions. A clinical consultation was not the aim of these virtual groups and they were often delivered additionally to routine care. Studies by Dinh et al. (2023), Nuñez et al. (2022) and Patel et al. (2023) did offer a clinical consultation as part of the educational programme, but this was conducted individually and in-person and not part of the virtual group. In contrast, Patel et al. (2020) reported an individual clinical consultation was conducted virtually whilst the group education programme was conducted in-person. Ritchie et al. (2023) described the use of both virtual and in-person groups in combination to deliver an educational programme for diabetes.

Similarly, educational programmes were also reported in international secondary care settings to manage heart failure (Alkouri et al., 2023; Hansen et al., 2023), type 1 diabetes in young adults (Bisno et al., 2022; Bisno et al., 2023; Raymond et al. 2016; Reid et al. 2018), diabetes and obesity (Al-Badhri et al. 2022; Dhaver et al., 2023), and type 2 diabetes (Katula et al. 2022; Moin et al., 2018).

VGCs have also been reportedly used internationally as a support group in primary care, in particular for mental health conditions (Gentry et al., 2019). In the US, most notably, Juarez-Reyes et al. (2021) determined the acceptability of virtual groups for stress, anxiety, and depression during the COVID-19 pandemic. However, Juarez-Reyes et al. (2021) recognised the difficulties in adapting from an in-person to virtual model, but reported an appreciation from patients that care could still be delivered using a virtual platform during the pandemic. In Canada, cognitive-behavioural therapy [CBT] is reported to be delivered in a virtual group in general practice as an impact of COVID-19 (Maheshwari et al., 2022). Similarly, the viability of group CBT was reported for military



veterans in primary care in the US (Arizmendi et al., 2023). However, there is no known published evidence, aside from case studies, of virtual support groups for mental health conditions specifically being delivered in UK primary care setting. Delivery of virtual care for mental health in primary care in the UK is delivered on an individual basis rather than in a group setting, and often requires an extended individual consultation (Elmore et al., 2016; Hutton & Gunn, 2007).

International published literature also described the use of VGCs as a psychoeducational intervention, referring to educating individuals about their psychological conditions, and a psychosocial intervention which considers the individual psychological processes in relation to social contexts, including the use of VGCs as a support group to carers of persons with dementia (Austrom, 2015; Marziali & Garzia, 2011), chronic pain (Moore et al., 2024) and for young adults with cancer (Campo et al., 2017; Melton et al., 2016). Across Australia, VGCs were reported as a psychoeducational intervention for people with a family history of depression in general practice (Meiser et al., 2013). However, in the UK there is a limited published evidence base on the use of VGCs as a psychosocial or psychoeducational intervention. ELC Works (2024e) have provided a written case study of the use of a virtual group to support adults who are shielding to improve wellbeing through a group discussion, including a 1:1 consultation in general practice. In addition, a further case study describes a video group used to support parents whose children were anxious and/or depressed during lockdown, as a means of social support and education (ELC Works, 2024f).

To summarise, this review of the literature has provided a contextual account of the growth of VGCs across national and international

healthcare systems. Recognising the context in which VGCs are situated highlights the need to understand the role of VGCs across UK general practice as an alternative to routine, clinical care due to the paucity of evidence identified.

As routine, clinical care in primary care largely involves the management of LTCs, it is imperative to understand the factors associated with the uptake and delivery of VGCs to manage chronic conditions. The identified pressures across general practice settings and the growth of newer models of care highlights the importance of exploring the potential use of VGCs as alternative model of consultation.

## **2.4 Reflexivity**

This literature review was conducted to demonstrate the wider context surrounding the introduction of VGCs. The macro and meso level contexts of national policies, the impact of the pandemic, pressures within general practice, and need to embrace digital approaches to care, has led to a funnelling down of these diverse contexts which contribute to the ways to which VGCs were introduced. Therefore, I chose to conduct an extensive literature review, in addition to a systematic review, as I felt it was important to identify the contextual background to VGCs, which have preceded the introduction of the approach into general practice.

## **2.5 Chapter summary**

This chapter has provided a narrative account of the development and background to the introduction of VGCs, identifying areas for further research. Chapter 3 presents a systematic review focusing on factors affecting uptake and delivery of VGCs for the management of LTCs in primary care general practice.

**Chapter 3: Factors affecting  
the uptake and delivery of  
video group consultations  
for the management of long-  
term conditions in primary  
care general practice: a  
systematic review**

---

### **Chapter 3: Factors affecting the uptake and delivery of video group consultations for the management of long-term conditions in primary care general practice: a systematic review**

---

#### **3.1 Introduction**

The previous chapter outlined the context to the thesis and the introduction of VGCs. This chapter presents a systematic review, which forms study one of the thesis. The chapter is introduced with the research question, and the overarching aims and objectives of the review. The following parts of the chapter then discuss methodological considerations, a consideration of synthesis methods, with a rationale for the chosen review methods and a description of how these methods were undertaken. The chapter then discusses the systematic review results, followed by a chapter summary.

A systematic review can be defined as a *'systematic, explicit, and reproducible method for identifying, evaluating, and synthesising the existing body of completed and recorded work produced by researchers, scholars, and practitioners'* (Fink, 2005, p.3). Systematic reviews offer an efficient integration of multiple study results, by combining available evidence appropriately mapped to a pre-specified eligibility criteria to provide an answer to a specific research question (Higgins et al., 2023; Lau et al., 2015; Lau et al., 2016). Mulrow (1994) argues a systematic review is a search for the whole truth not just a part of it, enabling the identification of any gaps in the knowledge base to strengthen an understanding for future research (Booth et al., 2016; Webster & Watson, 2002). The use of a well-documented and systematic process can produce a transparent and comprehensive evidence synthesis, which

helps to establish the consistency and generalisability of previous research findings (Mulrow, 1994). However, the impact and strength of the review is dependent on the methods used, and identification of high-quality studies (Grant & Booth, 2009; Higgins et al., 2023).

### **3.1.1 Research question**

*What are the factors affecting uptake and delivery of video group consultations for the management of LTCs in primary care general practice?: a systematic review.*

### **3.1.2 Aim and objectives for the review**

This systematic review aimed to investigate the factors affecting the uptake and delivery of VGCs, focusing on the management of LTCs in general practice. More specifically, the objectives of the review were to:

1. Identify existing evidence investigating the uptake and delivery of VGCs for the management of LTCs in primary care
2. Critically appraise the methodological quality of the identified studies
3. Examine the factors associated with the uptake and delivery of VGCs with reference to the primary outcomes of use, effectiveness, appropriateness and implementation
4. Examine the factors associated with the uptake and delivery of VGCs considering additional secondary outcomes related to barriers and facilitators, including patient access, confidentiality,

clinical outcomes, organisational structures, workload and perceptions and experiences of VGCs

5. Inform subsequent sections of the thesis to provide a greater understanding of the published research evidence base on VGCs across national and international primary care settings

### **3.2 Methodological considerations**

A number of methodological considerations have been identified for this systematic review, in an attempt to provide valuable evidence to inform future policy and clinical practice (Popay et al., 2006; Veginadu et al., 2022). In line with the exploratory nature of this systematic review and the thesis as a whole, an interpretative synthesis approach was used, aiming to identify existing knowledge, inform new thinking and develop deeper understanding of the topic area, through a synthesis grounded in primary studies (Gough et al., 2012; Popay et al., 2006). The utility of the review was also considered, with the need to ensure novelty of synthesis findings, the contribution to clinical practice and research, as well as the need to inform and potentially influence the following chapters of the thesis (Barnett-Page & Thomas, 2009).

To aid a systematic process, transparency was also a key methodological consideration within this review, leading to the documentation of each stage of the research process (Figure 5). The methods presented within this chapter should therefore be transparent enough to be replicated.

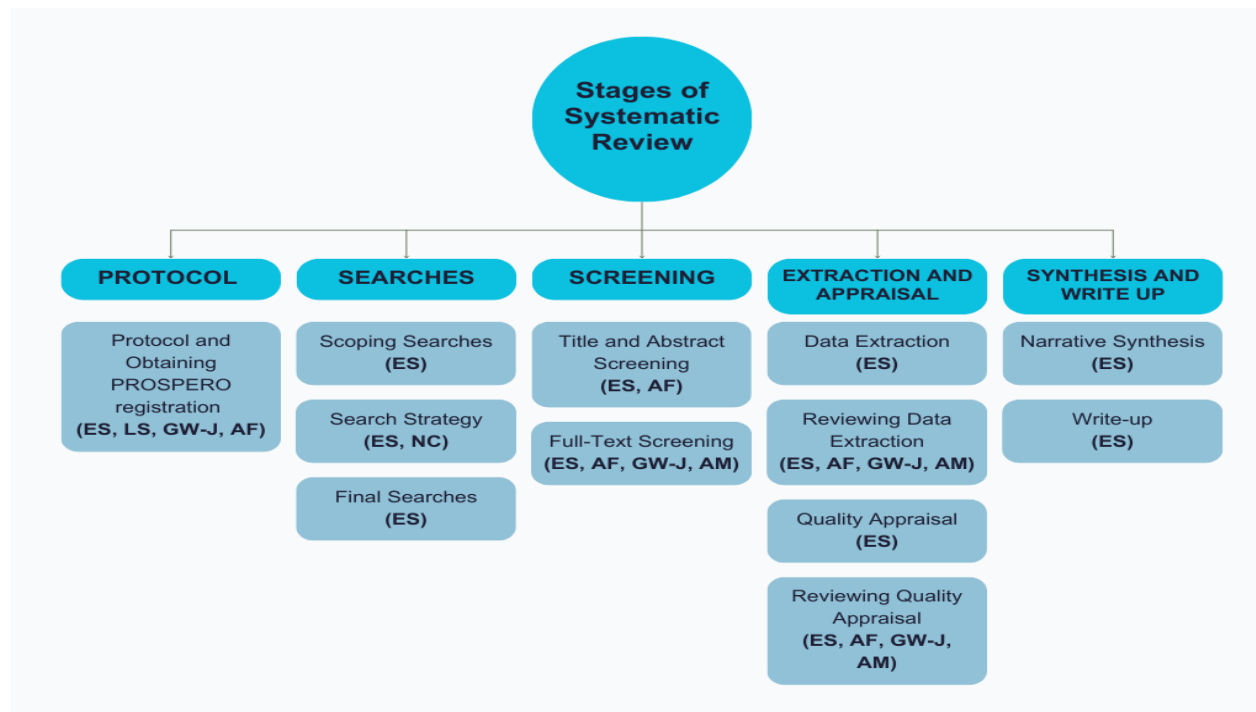


Figure 5: Researcher contributions



### **3.3 Methods**

#### **3.3.1 Registration**

The review was registered with National Institute for Health Research [NIHR] Centre for Reviews and Dissemination PROSPERO registry, an international database of prospectively registered systematic reviews in health and social care (Page et al., 2018) (Appendix 5), prior to commencement of searches. Registration was obtained in March 2021, registration number: CRD42021220258. This protocol was agreed by each member of the review team [ES, AF, LS, GW-J], and by a Keele University systematic review expert [NC]. This was obtained in February 2021. A protocol is essential to the development of a systematic review clearly describing the need for the review (the review question), what the review is about (the context of the review) and how the review will be undertaken (Cochrane Consumer Network, 2021).

#### **3.3.2 Stages of the systematic review**

The following section describes the five stages of the systematic review method, including search strategy, screening and selection, quality assessment, data extraction, and evidence synthesis (Lunny et al., 2017; Lunny et al., 2018) (Figure 6).

## STAGES OF THE SYSTEMATIC REVIEW

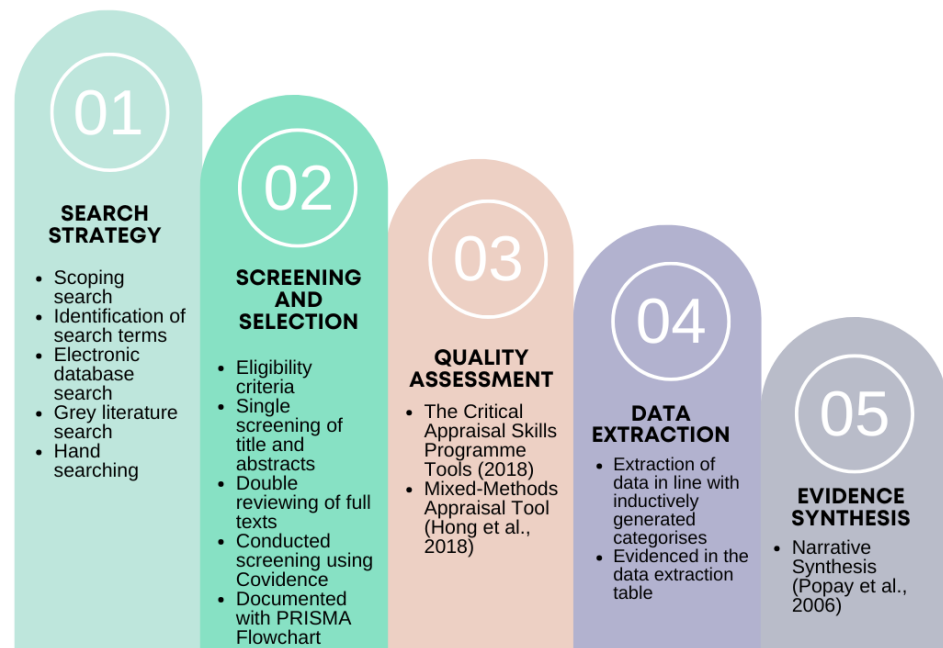


Figure 6: Stages of a systematic review

### 3.3.3 Search strategy

A broad search strategy was initially employed, through a scoping search, to determine the relevant and most appropriate search terms, as well as determining the focus of the review. This scoping search was conducted in electronic databases MEDLINE and CINAHL, as well as referring to the Cochrane Library for identification of search terms. This helped to identify where the research gaps are and ultimately where a review is needed.

Initial search terms related to intervention, setting and population/outcome, based on a PICO framework (Eriksen & Frandsen, 2018) (Table 1).

Table 1: Search headings for scoping search

SEARCH HEADINGS	SEARCH TERMS*	
INTERVENTION	Online	Consultation
	Video	
	Group	
SETTING	General Practice	
	Primary Care	
POPULATION/OUTCOME	Long-Term Conditions	

\*Relevant search terms were adapted based on international contexts

Search terms related to various healthcare settings and ‘long-term conditions’ were initially included as key words. However, this scoping search identified large numbers of ineligible papers which did not meet the review objectives. ‘Setting’ was refined to include results only in primary care and general practice, as a requirement of the review question. A removal of search terms associated with ‘long-term conditions’, helped to focus results, and produce more relevant and eligible results. ‘Long-term conditions’ as a concept was too broad for the research question and produced increasing ineligible results (Bernell & Howard, 2016).

The search strategy was further refined using MEDLINE through the OVID platform, as it was deemed a suitable platform to add and change lines, whilst trying to get the search strategy formulation correct (Bramer et al., 2017; Bramer et al., 2018). The use of Medical Subject Headings [MeSH] as well as Boolean phrases, proximity searching and truncation to maximise and merge results was used in to further develop the search

strategy. Other key words were added through the free-text function embedded into the databases used. Input and advice from the systematic review team [NC] at Keele University who have expertise in systematic searching and primary care interventions further helped to refine the search to meet the needs of the research question.

Limiters were used to refine the scope of the review, limiting to studies published after 2014, due to the contextual nature of VGCs, and to papers written in the English language, due to little resource for translation during this PhD. These limiters were applied at the start of the search strategy and were iteratively checked during screening. Table 2 illustrates the search strategy developed in MEDLINE.

Table 2: Search strategy (OVID – MEDLINE search)

PICO SEARCH STRATEGY			
INTERVENTION	Group	<b>MeSH HEADINGS</b>	exp Shared Medical Appointments/
		<b>OR</b>	
		<b>FREE-TEXT</b>	(SMA or SMA*1).ti,ab,kf. (group* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf. (shar* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf. (joint* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf. (combine* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf.
		<b>AND</b>	
	Video	<b>MeSH HEADINGS</b>	exp Videoconferencing/ exp Telemedicine/
		<b>OR</b>	
		<b>FREE-TEXT</b>	video*.ti,ab,kf. online.ti,ab,kf remote*.ti,ab,kf. (Remote* adj3 deliver*).ti,ab,kf. virtual*.ti,ab,kf. electronic*.ti,ab,kf. e-consult*.ti,ab,kf. zoom.ti,ab,kf. whatsapp.ti,ab,kf. facetime.ti,ab,kf. accurx.ti,ab,kf. webex.ti,ab,kf. skype.ti,ab,kf. ms teams.ti,ab,kf. microsoft teams.ti,ab,kf. (google adj (duo or meet)).ti,ab,kf. (telemethod* or tele method*).ti,ab,kf. digital health*.ti,ab,kf. (teleconsult* or tele consult*).ti,ab,kf. (telemedicine or tele medicine).ti,ab,kf. (telehealth* or tele health*).ti,ab,kf. (telenurs* or tele nurs*).ti,ab,kf.

SETTING*	Setting		(telecommunication* or telecommunication*).ti,ab,kf. (telepracti* or tele practi*).ti,ab,kf.
		AND	
		MeSH HEADINGS	exp Primary Health Care/ exp General Practice/ exp Family Practice/ exp Physicians, Family/
		OR	
		FREE-TEXT	general practi*.ti,ab,kf. (primary adj3 care*).ti,ab,kf. medical pract*.ti,ab,kf. family practi*.ti,ab,kf. family physician*.ti,ab,kf. family doctor*.ti,ab,kf. GP.ti,ab,kf.

\*Primary care search filter was adapted but based on Gill, P. J., Roberts, N. W., Wang, K. Y., & Heneghan, C. (2014). Development of a search filter for identifying studies completed in primary care. *Family Practice*, 28, 1-7.

The search strategy developed on MEDLINE was then exported to a further six databases: CINAHL (EBSCO), EMBASE (OVID), EMCARE (OVID), Joanna Briggs Institute (OVID), PubMed (NCBI), and Cochrane Library (Cochrane). Databases were accessed using NHS Open Athens and Keele University access.

Each search term was iteratively reviewed and narrowed according to the requirements of each database e.g. use of CINAHL's subject headings. Proximity search and Boolean operators were adjusted to meet the requirements of the individual databases. Search strategies formulated for each database can be found in Appendix 6.

These databases were chosen due to the wide variety of disciplines included, such as nursing and allied health (CINAHL), medicine (MEDLINE), healthcare (Cochrane Library), allied health (EMCARE), biomedicine (EMBASE, PubMed) and evidence-based practice (Joanna Briggs Institute, Cochrane Library). Databases such as the British Nursing Index, although primarily a nursing database, were not included as part of the review as MEDLINE and CINAHL are inclusive of the BNI results (Briscoe & Cooper, 2014). Both MEDLINE and PubMed were included in the final selection of databases, despite the inclusivity of MEDLINE findings within PubMed, due to the added value of using MeSH within MEDLINE itself, which was used for the development of the initial search strategy (Bramer et al., 2017; Bramer et al., 2018). Bramer et al. (2017) further argue that MEDLINE should be included in any optimum database search combination. Also, whilst EMBASE includes all MEDLINE records, which allows them to be searched simultaneously, EMBASE further searches 2900 journals which are not indexed in

MEDLINE (Elsevier, 2016). The inclusion of both MEDLINE and EMBASE is also necessary if publishing a Cochrane Review of Interventions.

Searches conducted through databases were supported by the use of incremental searches used to filter through reference lists. Reference lists of all eligible studies were searched, and forward citation tracking was undertaken (using Google Scholar) to identify further eligible studies or study reports.

All databases were searched periodically from development of the final search strategy in May 2021 to the day the final searches were conducted on 8<sup>th</sup> January 2024. Preferred Reporting Items for Systematic Reviews and Meta-Analyses for searching [PRISMA-S] (Rethlefsen et al., 2021) was used to support the reporting of the search strategy as part of this systematic review (Appendix 7).

Final search results were imported into the reference management software, *Endnote Web* (<https://endnote.com/>). This was used to record all results from the search strategy, acting as a storage system for references.

Subsequently, references were imported into *Covidence* (<https://www.covidence.org/>), a Cochrane online text-mining programme, ensuring that all studies were documented at each aspect of the study selection process with reasons for eligibility. Using this software, duplicates were removed and clear documentation of the selection of eligible studies at title, abstract and full-text paper stage was conducted. Duplicates were also hand checked for consistency. Collaboration with the supervisory team through the screening results [AF,GW-J] was facilitated through the *Covidence* platform.



#### **3.3.4 Study selection**

The eligibility criteria were decided *a priori* before commencement of the search strategy (Higgins et al., 2023). Table 3 summaries the eligibility criteria in an expanded and adapted PICO format (Eriksen & Frandsen, 2018).

Table 3: Criteria for inclusion and exclusion of studies in the review

	INCLUSION	EXCLUSION
<b>POPULATION</b>	<ul style="list-style-type: none"> <li>• Patients (adults, children, adolescents) with LTCs*, including QOF LTCs, and LTCs such as cancer care, women's health, men's health and long-COVID**</li> <li>• HCPs in primary care general practice using VGCs</li> </ul>	<ul style="list-style-type: none"> <li>• Mental health/Learning disabilities/Palliative care</li> <li>• Patients without long-term conditions</li> <li>• HCPs external to primary care</li> <li>• HCPs not using VGCs</li> </ul>
<b>INTERVENTION</b>	<ul style="list-style-type: none"> <li>• Video group consultations (as a replacement for an annual one-to-one review as part of routine care)</li> </ul>	<ul style="list-style-type: none"> <li>• Individual consultations (in-person or virtual)</li> <li>• In-person group consultations</li> <li>• Telephone consultations</li> </ul>

	INCLUSION	EXCLUSION
		<ul style="list-style-type: none"> <li>Therapeutic groups, including therapy, treatment and rehabilitation groups</li> </ul>
<b>SETTING</b>	<ul style="list-style-type: none"> <li>Primary care general practice***</li> </ul>	<ul style="list-style-type: none"> <li>Secondary care/Tertiary care/Specialised care</li> <li>Mental health and learning disability settings</li> <li>Healthcare specialities not managed in general practice</li> </ul>
<b>STUDY DESIGN</b>	<ul style="list-style-type: none"> <li>Qualitative studies</li> <li>Quantitative studies</li> <li>Mixed methods studies</li> </ul>	<ul style="list-style-type: none"> <li>Systematic reviews (relevant reference lists were hand searched for primary studies)</li> <li>Case studies/Case reports</li> <li>Opinion papers/Commentaries/Editorials</li> <li>Conference proceedings/Protocols</li> </ul>

	INCLUSION	EXCLUSION
LANGUAGE	<ul style="list-style-type: none"> <li>Studies published in English</li> </ul>	<ul style="list-style-type: none"> <li>Studies not published in English</li> </ul>
PUBLICATION PERIOD	<ul style="list-style-type: none"> <li>From 2014 to the present day</li> </ul>	<ul style="list-style-type: none"> <li>Prior to 2014</li> </ul>
<p>*LTCs are defined as ‘a health problem that requires on-going management over a period of years or decades and is one that cannot currently be cured but can be controlled with the use of medication and/or other therapies’ (NHS Data Model and Dictionary, 2024). LTCs included are required to have an annual review as per QOF 2023/2024 indicators, including diabetes, cardiovascular disease (including atrial fibrillation, cholesterol, coronary heart disease, heart failure, hypertension, peripheral arterial disease), respiratory disorders (including asthma, chronic obstructive pulmonary disease), neurological conditions (including stroke, epilepsy), rheumatoid arthritis, osteoporosis, chronic kidney disease - <a href="https://www.england.nhs.uk/long-read/quality-and-outcomes-framework-guidance-for-2023-24/">https://www.england.nhs.uk/long-read/quality-and-outcomes-framework-guidance-for-2023-24/</a>. Obesity was not considered to be a long-term condition as the condition does not include an annual review.</p> <p>**A decision was made to add long-covid to the eligibility criteria in December 2022 due to the increasing evidence base in general practice, long-COVID consultations and the use of the group consultation model up until this point. PROSPERO was amended accordingly.</p> <p>***Settings were included in the final selection of papers if the setting deemed to be comparable to a UK general practice setting, e.g. outpatient clinics, hospital-based primary care clinics etc.</p>		

### **3.3.4.1 Study Screening**

At title and abstract stage, the candidate [ES] screened 95% of references, and a second reviewer [AF] screened 5% of the remaining studies. These studies were independently single screened by reviewers based on a strict eligibility criteria, although 5% of papers were double screened [ES,AF] to ensure consistency in the screening process. Studies failing to meet the eligibility criteria from the screening of titles and abstracts were excluded. Reasons for exclusion are provided within the Preferred Reporting Items for Systematic Reviews and Meta-Analyses [PRISMA] flow chart (Figure 8). Full details on the reasons for exclusion are provided in Appendix 8.

Whilst the majority of studies at title and abstract were single screened, application of the eligibility criteria and discussion between reviewers on the inclusion of particular studies throughout the screening process helped to maintain consistency across reviewer selection. Also, an overly inclusive approach was adopted to the inclusion of papers until screening at full-text stage due to the identified heterogeneity of interventions included within search terms which ensured all studies were considered in depth (Popay et al., 2006). This also aided an increased number of studies screened at full-text which were independently double screened.

At full-text stage, the candidate [ES] screened all papers, screened independently with a second reviewer [AF] and utilised a third reviewer for any disagreements [GW-J]. Independent double reviewer screening at full-text stage helped to minimise individual reviewer selection bias and the chance of human error (Stoll et al., 2019). Conflicts were discussed with the review team in supervisory meetings [AF, GW-J, AM] and all

disagreements were finalised before the selection of eligible studies was undertaken. Studies remaining at the end of full-text screening were included for quality assessment and data extraction, prior to synthesis of results.

### **3.3.5 Quality assessment**

A number of different quality assessment tools were considered to adequately appraise a diverse mix of studies identified. Initially, potentially included studies were quality assessed using the Critical Appraisal Skills Programme [CASP] checklists (CASP, 2024). A number of CASP checklists were used, including cohort, qualitative and randomised controlled trial, to meet the needs of the diversity of papers included. However, during this iterative process, it became apparent that CASP (CASP, 2024) was not able to fully capture the methodological diversity identified within the papers. Many studies included used a range of methodologies, including mixed-methods, which made it difficult to quality appraise, appropriate to the research methodologies used.

Therefore, a second quality appraisal tool was used, the Mixed Methods Appraisal Tool [MMAT] (Hong et al., 2018). The MMAT consists of a checklist which is used for appraising and/or describing studies in systematic mixed studies reviews, involving qualitative, quantitative and mixed-methods study designs (Hong et al., 2018). This allowed for increased flexibility in assessing the quality of particular methodological approaches, including mixed-methods research, to which a number of the studies were considered. This ensured all research study designs were adequately accounted for and assessed.

This became an iterative process in which three phases of quality assessment were undertaken at full-text stage. Studies were not excluded based on quality assessment but this provided an overall picture of the strength and rigor of the data included.

The variety of quality appraisal checklists, standardised across a number of diverse methodologies, ensured both consistency and reliability between the quality assessment of studies. This helped to inform conclusions regarding the uptake and delivery of VGCs in primary care general practice.

Any areas of uncertainty or absence regarding each quality appraisal statement were identified and reflected upon. This was highlighted in supervisory meetings, in which discussions surrounding the quality of studies included in the review was considered to be of importance. Textual descriptions of the quality appraisal conducted for each study is provided in Appendix 9.

Risk of bias was considered intrinsic to the quality assessment process. Bias is defined as a systematic 'error' or 'mistake' in the decisions and judgements made, which influence the results of a study or review (Cochrane Consumer Methods, 2021). Risk of bias was considered initially through the use of an eligibility criterion, which aided appropriate study selection, relevant to the research question. Throughout quality assessment, early use of the CASP (CASP, 2024) tools did help to recognise any risk of bias by questioning the inherent relationship between the author and participants, through its standardised questioning.

### **3.3.6 Data extraction**

The data extraction process was guided by the PRISMA checklist (Page et al., 2021) (Appendix 10) and Centre for Reviews and Dissemination [CRD] guidance (CRD, 2009). Data extraction was conducted after quality assessment, yet the quality of papers was not a reason for exclusion, only for consideration throughout the review.

A data extraction table was produced to document this data and created specifically for the needs of the review (CRD, 2009) (Table 4; Table 5; Table 6; Table 7). A draft extraction tool was tested and approved by the supervisory team prior to application. Data extraction was primarily undertaken by the candidate [ES] and reviewed by the supervisory team [AM, GW-J, AF] to ensure appropriate extraction of information relevant to the study aims and objectives.

### **3.3.7 Data synthesis**

Due to the anticipated heterogeneous nature of studies included, a narrative synthesis was performed (Barnett-Page & Thomas, 2009; Lucas et al., 2007; Popay et al., 2006; Ruppert, 2020) (Figure 7). Narrative synthesis adopts a textual approach to synthesis, allowing for a synthesis of *'considerable heterogeneity in the included studies in terms of methods, participants, interventions and via other unknown sources'* (Popay et al., 2006, p.14). It has been shown to be useful to report study characteristics, context, quality and findings to a standard format and to compare similarities and differences across studies (Barnett-Page & Thomas, 2009; Popay et al., 2006). This was seen as the most



appropriate method as the review question dictates a wide range of research designs, producing qualitative and/or quantitative data, with consideration of individual study characteristics and varying contexts (Barnett-Page & Thomas, 2009; Popay et al., 2006). Narrative synthesis also focuses on the effects of interventions and/or the factors shaping the implementation of intervention, which aligns with the aims and objectives for this review question (Popay et al., 2006).

The Narrative Synthesis Framework proposed by Popay et al. (2006) was used:

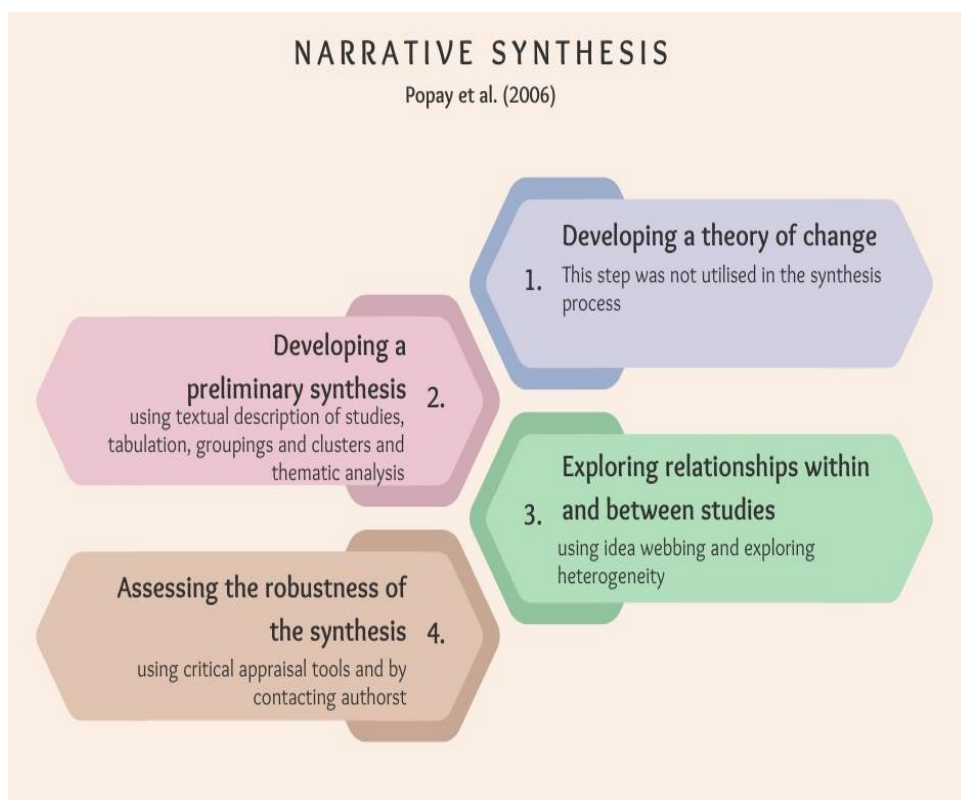


Figure 7: Narrative Synthesis (Popay et al., 2006)

The use of the narrative synthesis process helped to limit any bias around subjectivity of interpretation, allowing for a transparent and well-defined synthesis of evidence (Campbell et al., 2016). Data synthesis involved the final number of papers identified from the search strategy and data extraction processes, to ensure consistency between synthesis of studies. The population (HCPs and patients), interventions and outcomes were synthesised to provide an interpretative narrative synthesis of data. A meta-analysis was not possible due to the lack of comparability across studies and the heterogeneous nature of the research included.

A number of different approaches to synthesis were considered. Thematic synthesis, developed by Thomas & Harden (2008) allows for an inductive generation of themes. Lucas et al. (2007) compared narrative synthesis and thematic synthesis and found that thematic synthesis holds most potential to develop a hypothesis whereas narrative synthesis demonstrates transparent heterogeneity between studies. This is because narrative synthesis clearly recognises the context and characteristics of each study, whilst thematic synthesis organises data according to themes (Lucas et al., 2007). Therefore, narrative synthesis was best suited to a synthesis of a mixture of research papers, which variety in context and characteristics of the intervention.

### **3.4 Results**

#### **3.4.1 Identification of studies**

A PRISMA flowchart (Page et al., 2021) to document each stage of the study selection was populated within *Covidence* (Figure 8).

After importing studies from databases into *Covidence*, 4899 studies were identified. There were also 17 studies included from grey literature and hand-searching. After de-duplication ( $n = 1384$ ), 3532 studies were screened at title and abstract stage. A total of 192 papers remained after screening of titles and abstracts for full-text review, and four papers remained after full-text review.

Reference lists were also hand-searched from all the eligible papers included in the review, to ensure all current studies regarding VGCs had been identified. Relevant systematic review reference lists were also hand searched to identify any eligible primary studies. Horsley et al. (2011) found that checking reference lists generated 2.5%-40% more studies, dependent on the quality and scope of the search strategy used. One paper was identified through the checking of reference lists for inclusion in the final review as one of the four included papers, identified at initial screening stage by hand searching.

PRISMA Flowchart (populated through Covidence)

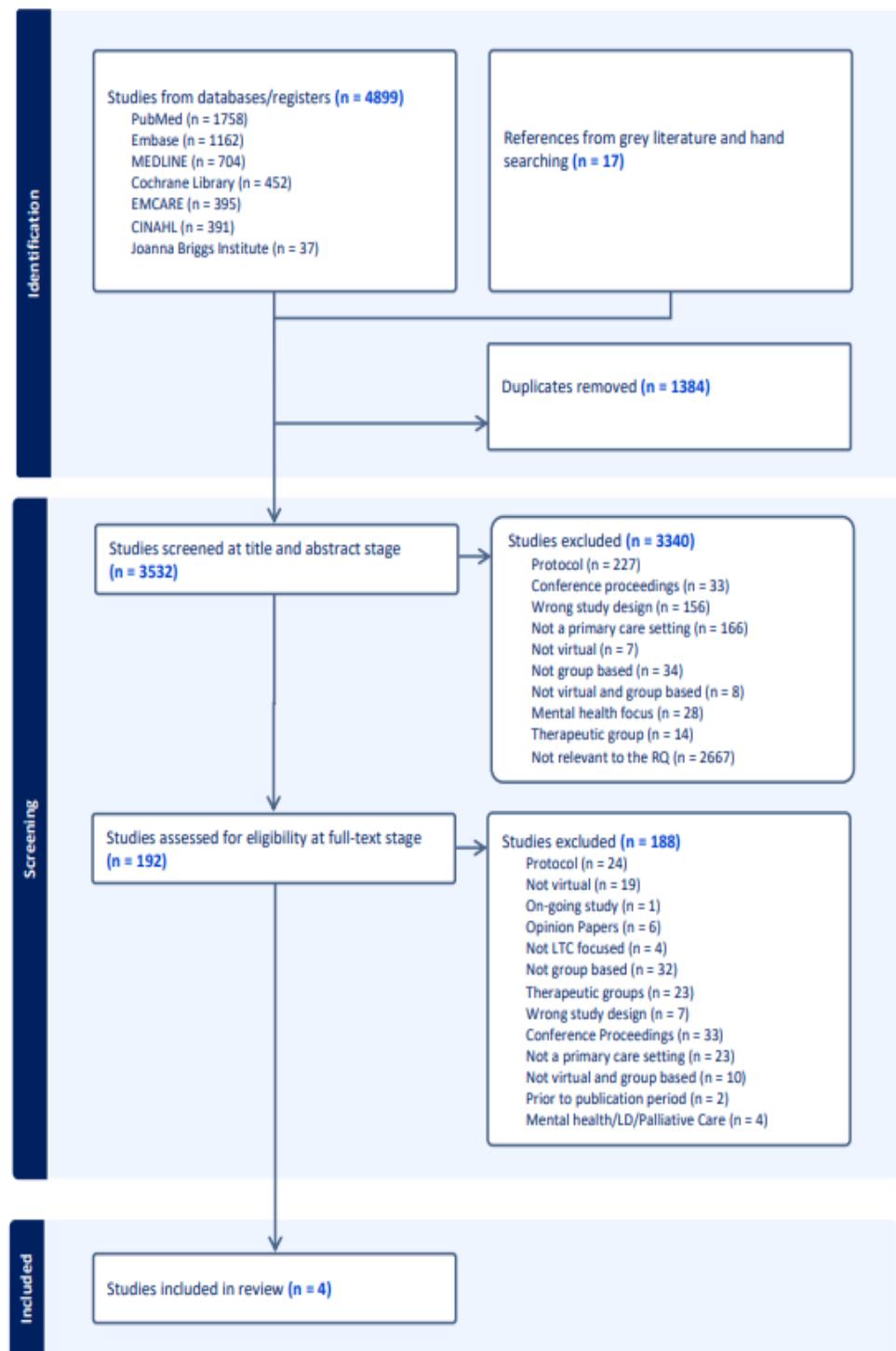


Figure 8: PRISMA flowchart (Page et al., 2021)

### **3.4.2 Excluded studies**

At title and abstract stage, studies were excluded (n=3340) based on an exclusion hierarchy, focused on the requirements for eligibility. The most common reasons for exclusion were based on the lack of relevance to the research question (n=2667), wrong study design (n=416), studies not based in primary care (n=166), not group or virtually based interventions (n=49), and studies which did not make reference to LTCs (n=28), including therapeutic, rehabilitation and treatment groups (n=14).

At full-text stage, 188 papers were excluded. The most predominant reasons for exclusion were wrong study design (n=71), not group or virtually based interventions (n=61) and interventions were not delivered for LTCs (n=31). A number of these papers were appraised at depth, due to the ambiguity in determining the intervention description (Brown et al., 2020; Dhaver et al., 2023; Dinh et al., 2023; Drake et al., 2023; Mash et al., 2023; Nuñez et al., 2022; Patel et al., 2020; Ritchie et al., 2023). In addition, 23 papers were excluded because interventions were not based in primary care. Authors were contacted if studies had comparable settings to primary care, to provide clarification on the setting surrounding the intervention. Other exclusion reasons related to studies published prior to the eligibility publication period (n=2).

### **3.4.3 Study characteristics**

Four studies included in the final selection of papers were all published in English between 2016 and 2023. Three of the four papers included were published between 2022 and 2023 (Papoutsis et al., 2022; Mirsky et al.,

2022; Mirsky et al., 2023). All studies were published in peer-reviewed journals. The research was conducted in the UK (Papoutsis et al., 2022), Honolulu and Guam (Tokuda et al., 2016) and Boston, USA (Mirsky et al., 2022; Mirsky et al., 2023).

#### **3.4.3.1 Study design and methods**

The study designs and methods used are presented in Table 4.

A range of study designs and methods were used across the four included papers. Three out of the four studies are classified as cohort studies. Studies by Mirsky et al. (2022) and Tokuda et al. (2016) included a prospective design, with a cohort of patients or HCPs receiving or delivering an intervention. The study by Mirsky et al. (2023) presents a survey at the end-point of a cohort study. The fourth study is a qualitative study design. However, multiple methods were used within the same study (Table 4). These methods included semi-structured interviews, surveys, focus groups, workshops and observation.

The first pilot cohort study (Tokuda et al., 2016) focused on the feasibility of virtual group education and medication-titration to improve diabetes outcomes in rural populations. This was demonstrated by collecting outcomes from the cohort study itself and the use of multimethods, including surveys, focus groups and interviews, for evaluation. Data was presented through the use of descriptive statistics (mean values, percentages), inferential statistics including t-tests and Pearson chi square test, linear mixed effect modelling, *p* values, standard error of the mean), as well as an analysis of the qualitative data to produce themes.

Secondly, a pilot cohort study conducted by Mirsky et al. (2022) tested a four-part primary care led virtual group visit series integrating hypertension education, lifestyle medicine, home blood pressure monitoring and health and wellness coaching. However, this study was published as a quality improvement initiative, which has been considered throughout the quality appraisal process. Data was presented through the use of descriptive statistics such as percentages, interquartile ranges and median values, and inferential statistics including linear regression models, *p* values and confidence intervals.

Thirdly, an end-point survey of a cohort study (Mirsky et al., 2023) was used to determine associations between patient attendance patterns and self-reported behaviour changes, after participating in a primary care lifestyle medicine virtual group visit programme. Results were presented through a combination of descriptive statistics such as mean variables, standard deviations, percentages and inferential statistics including *p* values, ANOVA and chi squared.

The final study is a qualitative study (Papoutsi et al., 2022) using a multimethod approach to demonstrate how multiple interacting influences underpin the implementation and delivery of VGCs. Papoutsi et al. (2022) used semi-structured interviews, longitudinal observation, surveys and workshops as data collection methods. To analyse data, thematic analysis (Braun & Clarke, 2006) was informed by the Planning and Evaluating Remote Consultation Services framework (Greenhalgh et al., 2017; Greenhalgh et al., 2021).

Table 4: Data extraction table: Study description

	Study description				Journal	Study methods	
	Study	Author	Year	Country of study		Study design, methodology and data collection method	Inclusion/Exclusion criteria
Papoutsi et al. (2022)	Implementing video group consultations in general practice during COVID-19: A qualitative study	Papoutsi, C., Shaw, S., Greenhalgh, T.	2022	UK	British Journal of General Practice	<b>Study design -</b> Qualitative Study  <b>Data collection methods -</b> Semi-structured interviews (n=32), longitudinal observation of 2 practices and training meetings, patient feedback survey, workshops	Not reported



	Study description				Journal	Study methods	
	Study	Author	Year	Country of study		Study design, methodology and data collection method	Inclusion/Exclusion criteria
Tokuda et al. (2016)	The utilization of video-conference shared medical appointments in rural diabetes care	Tokuda, L., Lorenzo, L., Theriault, A., Taveira, T. H., Marquis, L., Head, H., Edelman, D., Kirsh, S. R., Aron, D. C., Wu, W-C	2016	Honolulu & Guam	International Journal of Medical Informatics	<b>Study design:</b> Prospective non-randomised study/Qualitative  <b>Data collection methods:</b> Survey, focus groups and semi-structured interviews for evaluation	<b>Inclusion:</b> Patients with a documented diagnosis of diabetes and HbA1c >7% or were referred by their primary care providers to assist in diabetes care  <b>Exclusion:</b> Patients not willing or unable to participate in the video-SMA
Mirsky et al. (2022)	Hypertension control and medication titration associated with lifestyle medicine virtual group visits and home blood pressure monitoring	Mirsky, J. B., Bui, T. X. V., Grady, C. B., Pagliaro, J. A., Bhatt, A.	2022	Boston, USA	American Journal of Lifestyle Medicine	<b>Study design - Cohort study</b>	<b>Inclusion:</b> attendance of all four VGVs in the series in addition to 10 or more HBPM measurements during the study period (two weeks prior to the first VGV and two weeks after the fourth VGV)

	Study description					Study methods	
	<i>Study</i>	<i>Author</i>	<i>Year</i>	<i>Country of study</i>	<i>Journal</i>	<i>Study design, methodology and data collection method</i>	<i>Inclusion/Exclusion criteria</i>
Mirsky et al. (2023)	Lifestyle medicine virtual group visits: Patient attendance and perceived benefits	Mirsky, J.B., Brodney, S., Boratyn, V., Thorndike, A.N.	2023	Boston, USA	American Journal of Lifestyle Medicine	<b>Study design</b> - Cohort study  <b>Data collection methods</b> - 1) paper survey, 2) online survey	<b>Inclusion:</b> Eligible for the study if 1) they had signed up for at least 1 LMVGV visit between September 1, 2020, and August 31, 2021, 2) they were >21 years old, and 3) English was their preferred language in the EMR

### **3.4.3.2 Population**

Characteristics of the study sample population are provided in Table 5.

Two of the cohort studies (Mirsky et al., 2022; Tokuda et al., 2016) included 123 patients, as part of the intervention or control group. Mirsky et al. (2023) included 111 patients as part of the end-point survey of the cohort study by Mirsky et al. (2022). Sample sizes were generally small, as these three studies were reported to be pilot studies (Mirsky et al., 2022; Mirsky et al., 2023; Tokuda et al., 2016). The range of mean ages for patients was 60-67 years with a mixture of male and female cohorts. A number of ethnicities were identified across these three studies, including Asian Pacific, White, Hispanic and Non-Hispanic patient participants. Only Tokuda et al. (2016) presented baseline activity levels for patients, which was described as generally low physical activity with a lack of dietary fruit and vegetables. Other social determinants were reported by Mirsky et al. (2023) who described patient levels of education, employment, food insecurity and housing insecurity, after participating in the intervention.

Two studies reported study sample baseline clinical data (Mirsky et al., 2022; Tokuda et al., 2016). Tokuda et al. (2016) reported that most patients have had diabetes over ten years, and baseline clinical data between the intervention and control group was comparable, except a 5mmHg difference in diastolic blood pressure. Mirsky et al. (2022) reported a median blood pressure of 128/78 across patients, with the majority of patients taking anti-hypertensive medications. Mirsky et al. (2023) referred to the subsequent overall health of patients, the extent of loneliness and depression screening. However, this data was collected

after the intervention had finished and was self-reported by patients, thus prone to bias.

The sample of HCPs involved in the interventions varied across the three cohort studies (Mirsky et al., 2022; Mirsky et al., 2023; Tokuda et al., 2016). The number of HCPs involved in VGCs remained consistent at an average of two professionals per VGC. Job roles included nurse practitioners, clinical pharmacists, doctors and health and wellness coaches. Mirsky et al. (2022) did not report the characteristics of HCPs involved.

In the qualitative study (Papoutsi et al., 2022), the study sample consisted of patients and HCPs providing their experiences of implementing and delivering VGCs. With regards to patients, a small number of patients participated in interviews and workshops, but no demographic or clinical data was reported. A range of clinical and non-clinical HCPs were also involved in the interviews and workshops including NHS staff from eight practices, national level policy makers and programme managers and training provider representatives. NHS staff included GPs, nurses, receptionists, pharmacists, practice managers, physiotherapists, and IT officers. Papoutsi et al. (2022) further recommended the inclusion of at least two HCPs in each VGC.

Table 5: Data extraction table: Study participants

	Participants: HCPs		Participants: Patients					
	Number	Job roles	Number	Age range (years)	Gender	Ethnicity	Baseline demographic data	Baseline clinical data
Papoutsi et al. (2022)	<p><b>Interviews -</b> 15 NHS staff from eight practices 5 national level policy makers and programme managers 3 training providers</p> <p><b>Workshops -</b> NHS staff NHSEI programme partners (21 in total, including patients)</p> <p><b>Recommended to have at least 2 members of staff for a VGC</b></p>	<p><b>Interviews -</b> GPs, nurses, receptionists, a pharmacist, practice managers, a physiotherapist and an IT officer Policy makers and programme managers Training providers</p>	<p><b>Interviews</b> - 5 patients who had participated in or declined VGCs</p> <p><b>Workshops</b> - patients (21 in total, including NHS staff, NHSEI programme partners)</p>	Not reported	Not reported	Not reported	Not reported	Not reported

	Participants: HCPs		Participants: Patients					
	<i>Number</i>	<i>Job roles</i>	<i>Number</i>	<i>Age range (years)</i>	<i>Gender</i>	<i>Ethnicity</i>	<i>Baseline demographic data</i>	<i>Baseline clinical data</i>
<b>Tokuda et al. (2016)</b>	2 HCPs (they were both in the same room at the time of the video-SMAs)	Nurse practitioner and clinical pharmacist	31 intervention group 69 in control group Total of 100 in the study	Intervention Age: 60.4 (mean)  Control Age: 61.6 (mean)	Overall: 95% male 5% female	Overall: 63% Asian Pacific	Generally low physical activity and a lack of fruit and vegetables in their diet  Geographical isolation	Most patients have diabetes duration 10+ years  Baseline clinical data between groups was comparable (Smoker, Coronary Artery Disease, Stroke, Hypertension, SBP, HbA1c, Total cholesterol, Triglycerides, LDL, Insulin, Metformin, Sulphonylurea, Statin, ACE Inhibitors, ARBs), although, there was a 5mmHg difference in DBP

	Participants: HCPs		Participants: Patients					
	<i>Number</i>	<i>Job roles</i>	<i>Number</i>	<i>Age range (years)</i>	<i>Gender</i>	<i>Ethnicity</i>	<i>Baseline demographic data</i>	<i>Baseline clinical data</i>
Mirsky et al. (2022)	Not reported	Not reported	38 patients enrolled but 23 patients deemed eligible  <b>Reasons for ineligibility</b> - low attendance: 6 insufficient HBPM: 9	Age: 67 (median) IQR – 56-70	Female: 17 Male: 6	White:19	Not reported	Median BP - 128/78 (10 patients were below the goal of 130/80)  One patient was not taking anti-hypertensive medication before the VGV series. 22 patients were taking anti-hypertensive medication.

	Participants: HCPs		Participants: Patients					
	<i>Number</i>	<i>Job roles</i>	<i>Number</i>	<i>Age range (years)</i>	<i>Gender</i>	<i>Ethnicity</i>	<i>Baseline demographic data</i>	<i>Baseline clinical data</i>
Mirsky et al. (2023)	Physician Health and wellness coach	1 physician 1 health and wellness coach	111 survey respondents	Age: 60.6 (mean)	Male: 30 (27%) Female: 81 (73%)	Hispanic: 11 Non-Hispanic: 89 Not reported: 11	<b>Education –</b> High school or less: 25 Some college: 27 College or more: 49 Currently employed: 58  <b>Food insecurity -</b> 19  <b>Housing insecurity</b> - 16	<b>Overall health –</b> Excellent/Very good:41 Good: 44 Fair/poor: 26  <b>Loneliness -</b> Never:43 Rarely:23 Sometimes:37 Often: 8  <b>Positive depression screen - 14</b>



### 3.4.3.3 Intervention

The characteristics of the VGC interventions are summarised in Table 6.

Overall, the intervention presented varied in terms of the LTC managed, components of the VGC, number of sessions, frequency of sessions, duration of VGCs, number of attendees and setting. With regards to the LTCs which the interventions focused on, diabetes, including pre-diabetes, and hypertension, including blood pressure monitoring, were mostly commonly identified. Three of the four studies identified diabetes to be the primary focus of VGCs (Mirsky et al., 2023; Papoutsi et al., 2022; Tokuda et al., 2016). Hypertension was also mentioned across three of the four included papers (Mirsky et al., 2022; Mirsky et al., 2023; Tokuda et al., 2016). Other chronic conditions such as asthma, COPD, cancer, post-natal care, mild COVID-19, cholesterol monitoring was further identified (Papoutsi et al., 2022; Tokuda et al., 2016). Although, Mirsky et al. (2023) and Papoutsi et al. (2022) also identified the use of VGCs for lifestyle medicine including healthy eating support, stress reduction, insomnia, and anxiety.

Papoutsi et al. (2022) described the variety of formats experienced by participants, including clinical, educational, informational and mixed formats. All studies combined clinical care within a virtual group setting, comprising a mixture of educational content, review of individual care plans, medication adjustment and coaching. Papoutsi et al. (2022), Mirsky et al. (2022) and Tokuda et al. (2016) reported the display of clinical patient data within the group, taking the format of a results board, cardiovascular risk card or display of home blood pressure readings. However, Papoutsi et al. (2022) recognise that not all VGCs have an

individually-focused clinical consultation within the virtual group setting. Instead, educational content is the primary focus to manage LTCs using VGCs. Mirsky et al. (2023) provided a more general description of the intervention referring to the delivery of patient-specific guidance about chronic disease care and education and did not provide specifics about what the virtual group intervention consisted of.

A control group was only reported in the study by Tokuda et al. (2016). The control consisted of usual care which is regular individual visits with a primary care physician every four to six months.

The average number of sessions described was four. Tokuda et al. (2016) reported these sessions to be delivered weekly, with two bi-monthly booster sessions. Mirsky et al. (2022) and Mirsky et al. (2023) reported four sessions per video group visit programme. Mirsky et al. (2022) reported these sessions to be every two weeks. Papoutsi et al. (2022) identified that all sessions planned for VGCs were scheduled but did not quantify how many sessions were delivered. The frequency of sessions was described by Papoutsi et al. (2022) as varied, with patient participation being either periodic, e.g. to align with an annual review, or more frequent, with patients joining multiple VGC sessions, as Tokuda et al. (2016) described a virtual group consultation lasting over five months. The average session for a VGC lasted between 60-120 minutes, consisting of three to six patients on average (Mirsky et al., 2022; Tokuda et al., 2016).

The setting of the intervention included UK primary care general practice (n=1), a community-based outpatient clinic (n=1) and an academic community health clinic associated with a hospital (n=2). Whilst varied in

nature, each setting included offered services comparable to a UK general practice setting and therefore met the eligibility criteria for this review.

Table 6: Data extraction table: Study intervention

	Description of intervention							Comparison (if applicable)
	<i>LTC on which VGC focused on</i>	<i>Components</i>	<i>Sessions</i>	<i>Frequency</i>	<i>Duration</i>	<i>Attendees</i>	<i>Setting</i>	
<b>Papoutsi et al. (2022)</b>	Diabetes Asthma COPD Cancer (acute treatment and long-term survivors) Mild COVID-19 Anxiety Postnatal care Healthy eating support	Diversity of formats noted - not all VGCs had an individually-focused clinical consultation that took place in the group setting  Results board	All VGCs were set as scheduled sessions	Patient participation was either periodic (to align with annual reviews) or more frequent (with patients joining multiple VGCs)	Not reported	Not reported	UK general practice	Not reported

	Description of intervention							Comparison (if applicable)
	<i>LTC on which VGC focused on</i>	<i>Components</i>	<i>Sessions</i>	<i>Frequency</i>	<i>Duration</i>	<i>Attendees</i>	<i>Setting</i>	
Tokuda et al. (2016)	Diabetes, including blood pressure and cholesterol monitoring	<p>Educational content</p> <p>Individualised cardiovascular risk card, including lab results at the 1 month, 3 month and 5-month visit</p> <p>Medication adjustments according to report cards</p> <p>Individualised plans</p>	<p>4 weekly sessions and 2 bi-monthly booster sessions</p> <p>Telephone follow-up visits where needed (once-twice monthly)</p>	4 weekly sessions and 2 bi-monthly booster sessions	<p>Programme was over 5 months</p> <p>Each session was 120 minutes</p>	3-5 patients per group	Guam community-based outpatient clinic	Usual care: consisted of regular individual visits with primary care physician every 4-6 months (concomitant historical control)

	Description of intervention							Comparison (if applicable)
	<i>LTC on which VGC focused on</i>	<i>Components</i>	<i>Sessions</i>	<i>Frequency</i>	<i>Duration</i>	<i>Attendees</i>	<i>Setting</i>	
Mirsky et al. (2022)	Hypertension	Hypertension management education, lifestyle medicine, health and wellness coaching, home blood pressure monitoring (individual review of HBPM readings in the group)	4 sessions	Every two weeks	60-minute sessions	3-6 patients	Academic community health clinic associated with Massachusetts General Hospital	Not reported

	Description of intervention							Comparison (if applicable)
	<i>LTC on which VGC focused on</i>	<i>Components</i>	<i>Sessions</i>	<i>Frequency</i>	<i>Duration</i>	<i>Attendees</i>	<i>Setting</i>	
Mirsky et al. (2023)	Hypertension Pre-diabetes Diabetes Additional session on rotating topics: nutrition, stress reduction or insomnia	4-part LMVGCV series on hypertension  4-part LMVGCV series on pre-diabetes  4-part LMVGCV series on diabetes  Additional session on rotating topics: nutrition, stress reduction or insomnia	4 sessions	Not reported	Not reported	Not reported	Academic community health clinic associated with Massachusetts General Hospital	Not reported

#### **3.4.3.4 Outcomes**

Outcomes are presented in Table 7.

From the three cohort studies (Mirsky et al., 2022; Mirsky et al., 2023; Tokuda et al., 2016), a range of clinical and non-clinical outcomes were measured. Clinical data was collected based on the LTC which the VGC was focused on. In the study conducted by Tokuda et al. (2016), HbA1c, blood pressure and fasting lipid values (LDL-c, triglycerides) were measured in relation to diabetes care. Outcomes were measured at baseline, three months and five months after the intervention. With regards to the study by Mirsky et al. (2022), blood pressure for hypertension monitoring was taken prior to the first VGC and after the last session and medication prescribing was assessed at the start and end of the programme. Clinical outcomes were also self-reported by patients, within the study by Mirsky et al. (2023), around 4-5 months after the intervention had taken place. These outcomes reflected self-reported lifestyle change, related to eating healthier, increased physical activity, weight loss, stress reduction, lower blood pressure, better sleep, lower blood sugars and reduced medication, as well as maintenance of these healthy lifestyle changes.

Non-clinical outcomes were also measured by Tokuda et al. (2016) and Mirsky et al. (2023). Tokuda et al. (2016) measured emergency department visits and hospitalisations as a result of the VGC programme, as well as medication prescribing. The survey conducted as part of the study (Tokuda et al., 2016) focused on patient assessment of care in chronic conditions, which included outcomes such as patient activation, delivery system design/decision support, goal setting, problem-



solving/contextual counselling, and follow-up/coordination. Focus groups also identified barriers and facilitators to diabetes self-management, perceived reasons for non-adherence to healthy behaviours and level of satisfaction with the VGCs. Interviews conducted focused on ways to overcome health system barriers, provider attitudes and satisfaction about the intervention and the belief that VGCs provide better care. Mirsky et al. (2023) also measured attendance of VGCs, as a subsequent impact on self-reported behaviour change.

The study by Papoutsi et al. (2022) did not focus on providing clinical or non-clinical outcomes for VGCs due to the nature of the study design and aims of the research.

Table 7 : Data extraction table: Study outcomes

	Outcomes		Key findings	Discussion points
	Clinical	Non-clinical		
Papoutsis et al. (2022)	Not reported	Not reported	<p>Range of different formats - clinical, educational, informational and mixed</p> <p>VGCs appeared to be 'scripted' establishing a lack of online rapport between clinicians and patients alike, however, others valued the human connection and understanding</p> <p>Dislike of the virtual group dynamic (patients)</p> <p>Having pre-existing relationships with the patients helped to establish an online rapport</p> <p>COVID-19 as a facilitator of VGCs</p> <p>Increased access to services using a virtual platform</p> <p>Staff motivations for VGCs was demand-led i.e. backlog, workload, QOF, and to increase patient access</p> <p>Significant workload required up-front and need for a team approach to implementation with relational coordination</p> <p>Benefits including increased skill set and additional roles and responsibilities</p> <p>Technology was viewed as a barrier to delivery</p>	<p>It is a prerequisite for group consultations to incorporate clinical care in a group setting (rather than purely education or peer support). The extent this happens varies</p> <p>Practices tend to stay with the relative safety of educational or informational sessions due to clinical formats requiring a bigger operational and cultural shift</p> <p>Included patients with increased digital literacy and good IT skills</p> <p>First study in UK general practice on VGCs</p> <p>Underpinned by a theoretical approach (PERCS)</p> <p>Small sample size</p>

	Outcomes		Key findings	Discussion points
	Clinical	Non-clinical		
Tokuda et al. (2016)	<p><b>HbA1c:</b> changes from baseline to 5 months – significant change in HbA1c in intervention group compared to control group (9.1 to 8.3). Greatest decline was after 3 months</p> <p><b>BP:</b> decreased SBP and DBP in the intervention group but no reduction in control group, no significant difference in BP at baseline for both groups</p> <p><b>Fasting lipid values (LDL-c, triglycerides):</b> change in lipid values were the same in both groups and comparable to baseline</p>	<p><b>ED visits and hospitalisations</b></p> <p><b>Medication prescribing</b></p> <p><b>PACIC survey</b> (19 patients completed): Patient activation, delivery system design/decision support, goal setting, problem-solving/contextual counselling, follow-up/coordination</p> <p><b>Focus groups</b> (15 patients and 2 members of social support participated in 4 focus groups): facilitators and barriers to diabetes self-management, perceived reasons for non-adherence to healthy behaviours, level of satisfaction of the video-SMAs</p> <p><b>Interviews:</b> health system barriers to diabetes care and how the video-SMA can help to overcome these barriers, provider attitudes and satisfaction about the video-SMAs and whether the belief that VGCs provide better care</p>	<p>Lower rate of ED visits noted in the intervention group, but hospitalisations were similar between both groups</p> <p>Higher rates of prescriptions of metformin and ACE inhibitors in the intervention group, where other medications were similar</p> <p>The median PACIC summary score was 4.5 indicating a perceived concordance with the chronic care model. Problem solving was rated highly</p> <p>Themes identified via focus groups: 1) overall satisfaction with video-SMAs, 2) patients feeling that the information provided was informative and personally beneficial, 4) improvement in self-efficacy to perform self-care behaviours, 5) an increased concern over health and life expectancy, 6) satisfaction with the cultural competency of the video-SMA providers and the use of culturally appropriate educational materials</p> <p>Themes identified from interviews: 1) overall satisfaction with the video-SMA experience, 2) perceived benefits for their patients, 3) health system barriers to diabetes care and potential resolutions for these barriers, 4) effective video-SMA facilitator strategies and key elements</p>	<p>Recommended to have more individualised time with the providers to discuss individual health concerns in the virtual group setting</p> <p>Expressed frustration with patients who dominated the group consultation</p> <p>Feelings demonstrated that patients were not experiencing a condition on their own</p> <p>Barrier noted was the physical distance and a lack of personnel dedicated to video-SMA activities along with an overburdened support staff</p> <p>Overall, success of video-SMA programme with a reduction in HbA1c and ED visits, however, there were contributory factors occurring which may have caused this</p> <p>Feasibility is still unknown</p> <p>Need for frequent video-SMAs to manage diabetes in the long-run due to the rise in HbA1c at the end of the programme</p>

	Outcomes		Key findings	Discussion points
	Clinical	Non-clinical		
Mirsky et al. (2022)	<p>Mean BP two weeks prior to first VGV</p> <p>Mean BP two weeks after the fourth VGV</p> <p>Changes in BP over the study period using linear regression models</p> <p>BP readings within 180-360 days after the last VGV (this was not included as only 9 patients were seen in primary care during this time)</p> <p>Anti-hypertensive prescriptions were reviewed at the beginning and the end of the series</p>	Not reported	<p>Median BP at the end of VGV series - 125/74 (14 patients were below the goal of 130/80)</p> <p>Decrease in SBP and DBP per day</p> <p>The 22 patients who were taking anti-hypertensive medication prior to the VGV, the dose was either reduced or discontinued (13 patients), medication remained the same (7 patients) and medication was increased, or new medication was added (3 patients). 4 patients were taken off medication completely and one medication was discontinued for 10 patients during the VGV. Within 180 days of the VGV, 6 patients were off anti-hypertensive medication.</p> <p>Overall, improved BP control with VGV series with a 40% increase in patients at goal BP at the end of the VGV</p> <p>Local confidentiality agreements in place</p>	<p>Quality improvement initiative</p> <p>First study to demonstrate hypertension virtual group care and HBPM integration</p> <p>Supports medication deprescribing</p> <p>Lack of a control group</p> <p>Small sample size</p> <p>Older, female, white patient population</p> <p>It is not clear which intervention (VGV, HBPM, HWC, virtual exercise class) contributed to a reduction in BP</p> <p>Participation in HWC and exercise class was not reported</p>

	Outcomes		Key findings	Discussion points
	Clinical	Non-clinical		
Mirsky et al. (2023)	<b>Lifestyle changes -</b> Eating healthier Increased physical activity Weight loss Stress reduction Lower blood pressure Better sleep Lower blood sugars Reduced medications Other Did not make changes  <b>Maintenance of healthy lifestyle changes –</b> A lot Some A little	<b>Attendance -</b> 1-4 LMVGs: 51 5+ LMVGs: 48	Most frequently reported behaviour change in both groups was eating healthier, increasing physical activity, losing weight  Most patients made some or a lot of lifestyle changes after the programme - 75% of respondents that attend 1-4 LMVGs and 89% who attend 5+ LMVGs reported some or a lot of changes made. No significant difference between the groups	Diverse patient population used  Almost all respondents reported making some behaviour change  Participants who attended 5+ had the greatest effect  Low response rate (48%) - reduced generalisability and representativeness of the wider population  LMVGs were only offered in English  Prone to recall bias - participants subjective reports

#### **3.4.4 General methodological considerations of included studies**

The results from the quality appraisal are outlined in Table 8 and Table 9.

Studies were not excluded on the basis of quality due to the contribution provided to the research question. The studies were all assessed on an individual basis using two quality appraisal tools due to ambiguity in study design.

Overall, all studies addressed a clearly defined research question, with clear research questions stated. The collected data for all studies adequately addressed the research question. With regards to the qualitative paper by Papoutsis et al. (2022) and qualitative component of the study by Tokuda et al. (2016), there is uncertainty surrounding the relationship between the researcher and participants as this was not addressed in the study themselves. The qualitative component of the study by Tokuda et al. (2016) did not demonstrate clearly where the findings were derived from and did not state the analysis methods used. Considering the mixed-methods nature of the study by Tokuda et al. (2016), there was no adequate rationale for using a mixed-methods design to address the research question presented within the paper, neither did the authors integrate the different components of the study effectively as the results were presented separately and combined within the discussion. Divergencies and inconsistencies were not addressed throughout the study (Tokuda et al., 2016).

Across the three cohort studies (Mirsky et al., 2022; Mirsky et al., 2023; Tokuda et al., 2016), there was no mention of confounding factors identified or taken account of in the study design and/or analysis. Follow

up of subjects was not clearly presented as complete within all three cohort studies and in two of the studies (Mirsky et al., 2022; Mirsky et al., 2023), it was unclear whether follow-up was long enough. Precision of results was not reported amongst two studies (Mirsky et al., 2022; Mirsky et al., 2023) and it was unclear to what extent the results published by Mirsky et al. (2023) are believable due to the subjective nature of the results, risk of recall bias and risk of nonresponse bias. Mirsky et al. (2023) did not use the 'The Strengthening and Reporting of Observational Studies in Epidemiology' [STROBE] guidelines (von Elm et al., 2007) to report on the survey and therefore was considered to be an end-point survey, as a result of participation in the cohort study by Mirsky et al. (2022). The study by Mirsky et al. (2023) also did not report which part of the video group visit programme influenced self-reported behaviour change.

The small sample size and contextually dependent sample population of all cohort studies (Mirsky et al., 2022; Mirsky et al., 2023; Tokuda et al., 2016) created uncertainty regarding whether the results can be applied to the local population. The novelty of studies (Tokuda et al., 2016; Mirsky et al. 2022) meant that it was difficult to assess whether these results fit with other available evidence, due to the lack of available published evidence on the topic.

Table 8: CASP quality appraisal (2024)

Final Included Studies – CASP Quality Appraisal						
Key: ✓ = Yes, ? = Uncertain		Papoutsi et al. (2022) (1)	Tokuda et al. (2016) (2)	Mirsky et al. (2023) (3)	Mirsky et al. (2022) (4)	Areas of uncertainty
<b>CASP Cohort Checklist</b>						
Section A: Are the results of the study valid?						
Q1	Did the study address a clearly focused issue?		✓	✓	✓	
Q2	Was the cohort recruited in an acceptable way?		✓	✓	? <sub>4</sub>	4 Recruitment method not stated
Q3	Was the exposure accurately measured to minimise bias?		✓	✓	✓	
Q4	Was the outcome accurately measured to minimise bias?		✓	✓	✓	
Q5 (a)	Have all authors identified all important confounding factors?		? <sub>2</sub>	? <sub>3</sub>	? <sub>4</sub>	2, 3 Not reported 4 Reported as a limitation
Q5 (b)	Have they taken into account the confounding factors in the design and/or analysis?		? <sub>2</sub>	? <sub>3</sub>	? <sub>4</sub>	2, 3 Not reported 4 Reported as a limitation
Q6 (a)	(a) Was the follow up of subjects complete enough?		? <sub>2</sub>	? <sub>3</sub>	? <sub>4</sub>	2, 3, 4 Not reported
Q6 (b)	(b) Was the follow up of subjects long enough?		✓	? <sub>3</sub>	? <sub>4</sub>	3 Cross sectional study 4 Not reported
Section B: What are the results?						
Q7	What are the results of this study?		✓	✓	✓	



Final Included Studies – CASP Quality Appraisal						
Key: ✓ = Yes, ? = Uncertain		Papoutsi et al. (2022) (1)	Tokuda et al. (2016) (2)	Mirsky et al. (2023) (3)	Mirsky et al. (2022) (4)	Areas of uncertainty
Q8	How precise are the results?		✓	? <sub>3</sub>	? <sub>4</sub>	3, 4 Preciseness not reported
Q9	Do you believe the results?		✓	? <sub>3</sub>	✓	3 Recall bias – subjective reporting
Section C: Will the results help locally?						
Q10	Can the results be applied to the local population?		? <sub>2</sub>	? <sub>3</sub>	✓	2, 3 Small sample
Q11	Do the results of this study fit with other available evidence?		? <sub>2</sub>	✓	? <sub>4</sub>	2, 4 Novel study
Q12	What are the implications of this study for practice?		✓	✓	✓	
CASP Qualitative Checklist						
Section A: Are the results valid?						
Q1	Was there a clear statement of the aims of the research?	✓	✓			
Q2	Is a qualitative methodology appropriate?	✓	✓			
Q3	Was the research design appropriate to address the aims of the research?	✓	✓			
Q4	Was the recruitment strategy appropriate to the aims of the research?	✓	✓			
Q5	Was the data collected in a way that addressed the research issue?	✓	✓			
Q6	Has the relationship between researcher and participants been adequately considered?	? <sub>1</sub>	? <sub>2</sub>			1 No mention of role 2 Not reported
Section B: What are the results?						

Final Included Studies – CASP Quality Appraisal						
Key: ✓ = Yes, ? = Uncertain		Papoutsi et al. (2022) (1)	Tokuda et al. (2016) (2)	Mirsky et al. (2023) (3)	Mirsky et al. (2022) (4)	Areas of uncertainty
Q7	Have ethical issues been taken into consideration?	✓	✓			
Q8	Was the data analysis sufficiently rigorous?	✓	? <sub>2</sub>			<sup>2</sup> Analysis techniques not reported
Q9	Is there a clear statement of findings?	✓	✓			
Section C: Will the results help locally?						
Q10	How valuable is the research?	✓	✓			

Table 9: MMAT quality appraisal (Hong et al., 2018)

Final Included Studies – MMAT Quality Appraisal							
Key: ✓ = Yes, ? = Uncertain							
Category of study designs	Methodological quality criteria		Papoutsi et al. (2022) (1)	Tokuda et al. (2016) (2)	Mirsky et al. (2023) (3)	Mirsky et al. (2022) (4)	Areas of uncertainty
Screening questions (for all types)	S1	Are there clear research questions?	✓	✓	✓	✓	
	S2	Do the collected data allow to address the research question?	✓	✓	✓	✓	
1. Qualitative	1.1	Is the qualitative approach appropriate to answer the research question?	✓	✓			
	1.2	Are the qualitative data collection methods adequate to address the research question?	✓	✓			
	1.3	Are the findings adequately derived from the data?	✓	? <sup>2</sup>			<sup>2</sup> Not clear where findings are derived from
	1.4	Is the interpretation of results sufficiently substantiated by data?	✓	✓			
	1.5	Is there coherence between qualitative data sources, collection, analysis and interpretation?	✓	✓			
2. Quantitative randomised controlled trials	2.1	Is there coherence between qualitative data sources, collection, analysis and interpretation?					
	2.2	Are the groups comparable at baseline?					
	2.3	Are there complete outcome data?					
	2.4	Are outcome assessors blinded to the intervention provided?					

Final Included Studies – MMAT Quality Appraisal							
Key: ✓ = Yes, ? = Uncertain							
Category of study designs	Methodological quality criteria		Papoutsi et al. (2022) (1)	Tokuda et al. (2016) (2)	Mirsky et al. (2023) (3)	Mirsky et al. (2022) (4)	Areas of uncertainty
	2.5	Did the participants adhere to the assigned intervention?					
3. Quantitative non-randomised	3.1	Are the participants representative of the target population?		? <sub>2</sub>		? <sub>4</sub>	2 Context dependent and small sample size 4 Older, female white population
	3.2	Are measurements appropriate regarding both the outcome and intervention (or exposure)?		✓		✓	
	3.3	Are there complete outcome data?		✓		✓	
	3.4	Are the confounders accounted for in the design and analysis?		? <sub>2</sub>		? <sub>4</sub>	2, 4 Not reported
	3.5	During the study period, is the intervention administered (or exposure occurred) as intended?		✓		✓	
4. Quantitative descriptive	4.1	Is the sampling strategy relevant to address the research question?			✓		
	4.2	Is the sample representative of the target population?			? <sub>3</sub>		3 Small sample size
	4.3	Are the measurements appropriate?			? <sub>3</sub>		3 Not enough detail given
	4.4	Is the risk of nonresponse bias low?			? <sub>3</sub>		3 Risk of nonresponse bias identified
	4.5	Is the statistical analysis appropriate to answer the research question?			✓		

Final Included Studies – MMAT Quality Appraisal							
Key: ✓ = Yes, ? = Uncertain							
Category of study designs	Methodological quality criteria		Papoutsi et al. (2022) (1)	Tokuda et al. (2016) (2)	Mirsky et al. (2023) (3)	Mirsky et al. (2022) (4)	Areas of uncertainty
5. Mixed methods	5.1	Is there an adequate rationale for using a mixed methods design to address the research question?		? <sub>2</sub>			2 No rationale reported
	5.2	Are the different components of the study effectively integrated to answer the research question?		? <sub>2</sub>			2 Presented separately
	5.3	Are the outputs of the integration of qualitative and quantitative components accurately interpreted?		✓			
	5.4	Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?		? <sub>2</sub>			2 Not addressed
	5.5	Do the different components of the study adhere to the quality criteria of each tradition of the methods used?		✓			

### 3.4.5 Narrative synthesis

The narrative synthesis process taken was guided by the nature of the papers included in the review. An overview of the narrative synthesis process is provided in Figure 7. The process and tools used are presented in Figure 9.

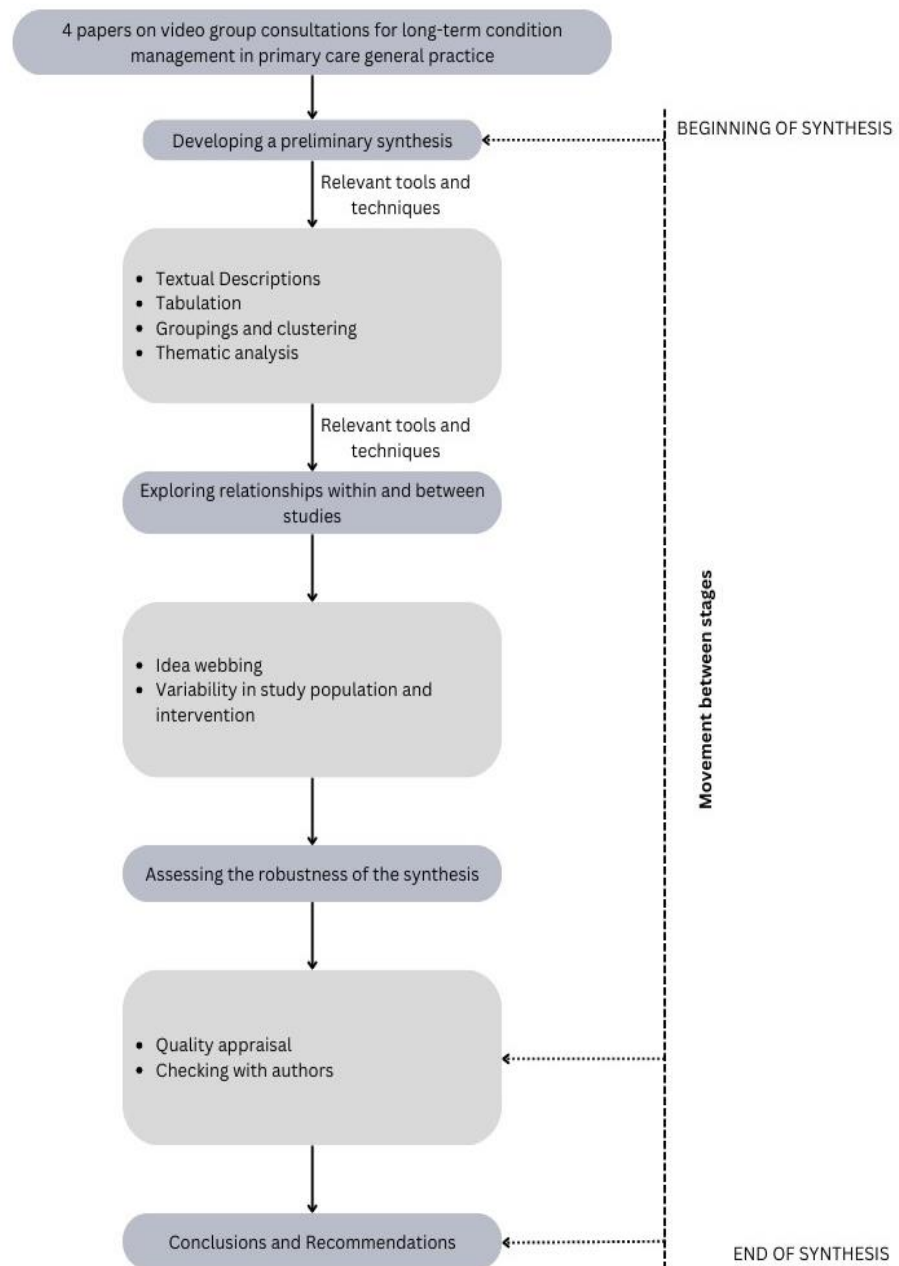


Figure 9: Narrative Synthesis process and tools used (Popay et al., 2006)

A convergent integrated approach to narrative synthesis was used, which refers to the process of extracting data from quantitative studies (including data from the quantitative component of mixed methods studies) and qualitative studies (including data from the qualitative component of mixed methods studies), and involves data transformation (Stern et al., 2020). ‘Qualitising’ involves extracting quantitative data and translating this into ‘textual descriptions’ to enable integration with qualitative data, requiring a narrative interpretation of quantitative results. This process is demonstrated in Figure 10.

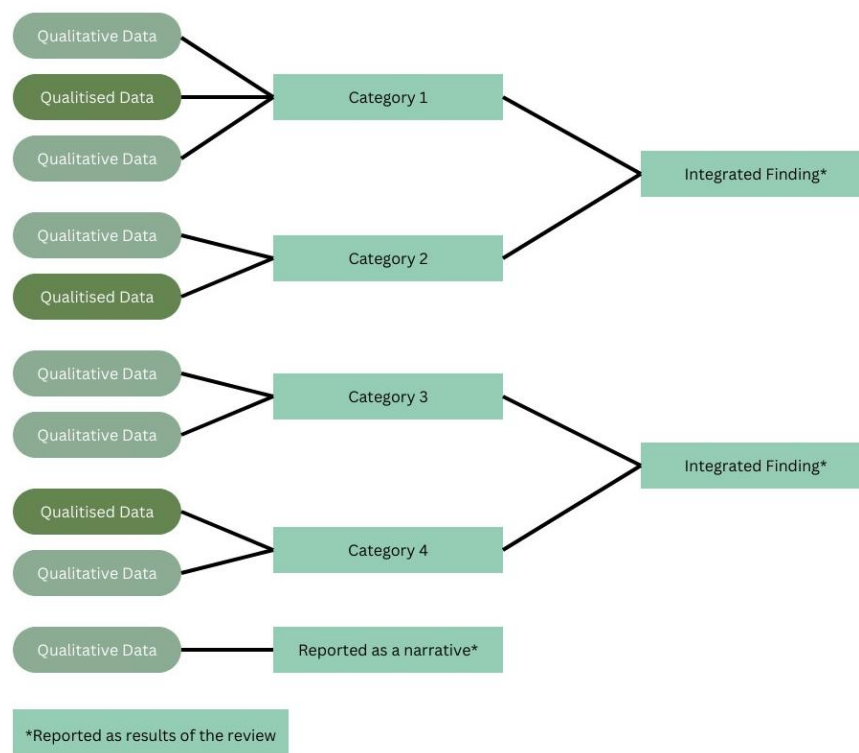


Figure 10: Convergent integrated approach to the narrative synthesis process (Stern et al., 2020)

To develop a preliminary synthesis, a textual description of each paper was undertaken. A structured approach to each description was maintained to ensure extraction of consistent findings (Appendix 11). This

was supplemented with tabulation, in which an iterative development of tables was produced, from initial description of study data to a table of key findings to observe key connections and divergences in results (Appendix 12). This aided the generation of key findings.

Key findings were identified based on individual papers. A Microsoft Excel spreadsheet was used to illustrate the key findings from each paper, providing supporting quotations to describe the key findings identified and produce an audit trail of these findings (Appendix 13). The identification of these findings was an iterative process, going back and forth through the papers to ensure all possible findings were captured. The findings were often descriptive in nature to highlight the narrative described within the studies.

After an illustration of key findings, they were then grouped into barriers and facilitators in relation to three main clusters including factors affecting patient uptake, factors affecting clinician and practice uptake and factors affecting delivery. Groupings and clusters were used to aid understanding of the results (Appendix 14). These groups were initially chosen to ensure the requirements of the review question were met.

To explore relationships between studies and findings, an idea web was produced to identify conceptual connections between findings to generate larger descriptive findings (Figure 11). The influence of heterogeneity was also explored due to the difference identified in conceptualisation of VGCs themselves and variation in primary care general contexts across international settings. This heterogeneity was reported on in the narrative synthesis.



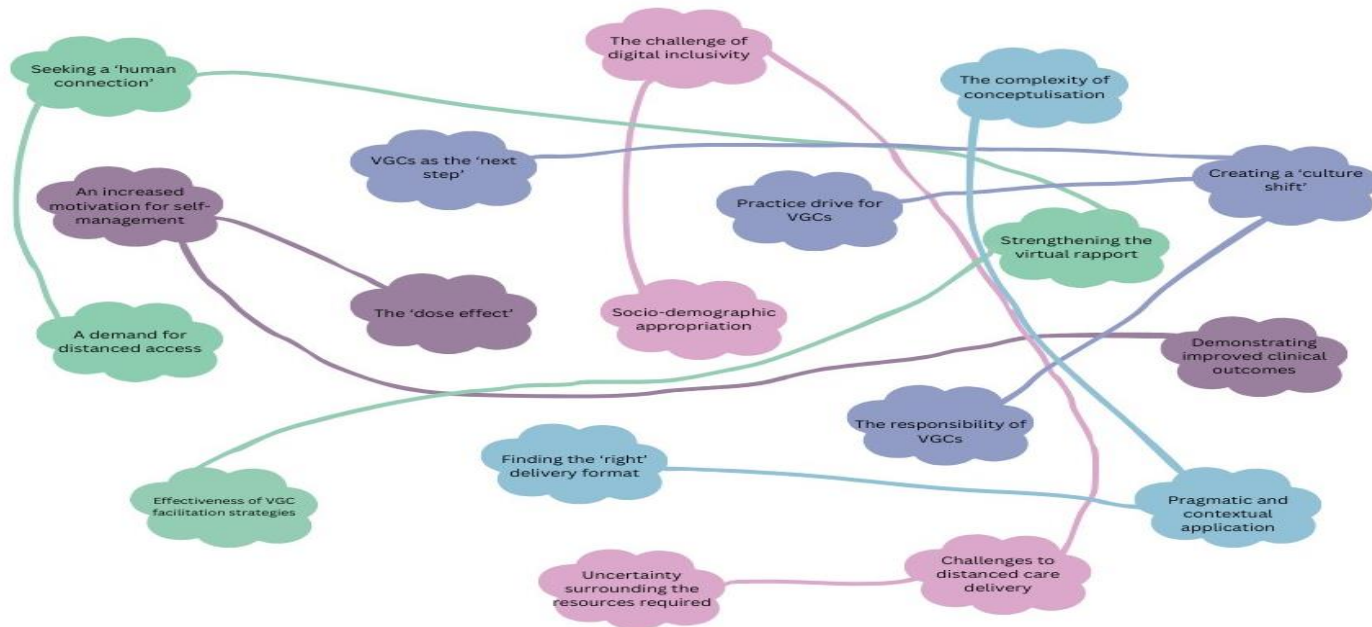


Figure 11: Idea webbing of key findings

Further to this, findings were grouped into larger descriptive findings, inclusive of similarities and differences across studies and initial findings, for example, 'seeking a 'human connection', included VGCs fostering peer support and importance of social support. The final stage of the synthesis involved a refinement of findings to narratively describe commonalities and differences across the included papers.

Five narrative findings were generated: Establishing the 'right' delivery format; The need to create a 'culture shift'; Seeking a 'human connection' online; An increased motivation for self-management and concern over health; and The fragmentation of distanced care delivery.

#### **3.4.5.1 Establishing the 'right' delivery format**

The synthesis of studies highlighted the nuances in determining '*the 'right' delivery format*' (Papoutsi et al., 2022, p.e486). The rapid adoption of virtual and remote services into primary care, as a result of the pandemic, facilitated a fluid approach to the delivery of VGCs. This stemmed from the conceptualisation of the approach, the diversity of formats and purposes employed, and the importance of pragmatic and contextual application.

##### *The conceptualisation of virtual group-based care*

A range of terminology was used to conceptualise virtual group-based care. The study by Papoutsi et al. (2022), conducted in a UK primary care setting, used the term 'video group consultation' to describe the

approach, in which it is a pre-requisite for group consultations to incorporate clinical care in a group setting (rather than purely education or peer support). However, international studies (Mirsky et al., 2022; Mirsky et al., 2023; Tokuda et al., 2016) did not employ this terminology. Studies by Mirsky et al. (2022) and Mirsky et al. (2023), based in the US, used the phrases such as ‘virtual group visit’ or ‘group medical visit’ interchangeably to describe the intervention. However, despite the use of distinct use of terminology, Mirsky et al. (2022) and Mirsky et al., (2023) use similar descriptions of the approach:

*‘in group medical visits, multiple patients with the same condition...meet with a provider in a group setting...individual care can also be provided in the context of a group’ (Mirsky et al., 2022, p.1)*

*‘to provide both general education and patient-specific guidance about chronic disease care’ (Mirsky et al., 2023, p.1)*

The study by Tokuda et al. (2016), conducted in Honolulu and Guam, used the phrase ‘video-shared medical appointments’ to describe the approach. This definition aligned with conceptualisations of care in a virtual group setting with regards to interactive discussion and behaviour change but did not refer to a clinical consultation undertaken for LTC management.

Contrary to the definition of VGCs provided by Papoutsis et al. (2022), involving the incorporation of a clinical review within the virtual group setting, the definitions by Mirsky et al. (2022), Mirsky et al. (2023) and Tokuda et al. (2016) do not echo this distinction as explicitly and account for variation across the virtual group-based care landscape and use for LTC management.

### *The diversity of formats and purposes*

Determining *'the 'right' delivery format'* (Papoutsi et al., 2022, p.e486), across primary care settings, illustrated a diverse range of formats and purposes for the uptake and delivery of VGCs. Papoutsi et al. (2022) articulated the difference between the types of VGCs employed, referring to clinical, educational, informational and/or mixed approaches. The studies within this synthesis (Mirsky et al., 2022; Mirsky et al., 2023; Tokuda et al., 2016) all demonstrate a mixture of approaches, primarily drawing on educational and clinical approaches. The study by Tokuda et al. (2016) explained that the content of sessions consisted of education for diabetes, hypertension and hyperlipidaemia, and the use of a cardiovascular risk report card to aid discussion of lab results and current vital signs. Similarly, Mirsky et al. (2022) reported that patients received hypertension education, behaviour change strategies and goal-setting, as well as an individual clinical review of blood pressure readings at each session. However, Papoutsi et al. (2022) highlight the contention with the extent of educational content provided within a clinical review, in determining whether the session is considered to be a 'video group consultation' by definition.

A number of different LTCs were highlighted to be managed through VGCs. In particular, studies by Mirsky et al. (2022), Mirsky et al. (2023) and Tokuda et al. (2016) used VGCs for diabetes and hypertension management. Yet, studies by Mirsky et al. (2022) and Mirsky et al. (2023) did not stipulate whether the patients had a diagnosis of hypertension or diabetes to participate in the virtual group visit programme. Papoutsi et al. (2022) focused on the use of VGCs more broadly, either for a structured annual review for LTCs, or as an informal consultation,

focusing on open-discussion and patient driven objectives. A range of LTCs were highlighted by Papoutsi et al. (2022), such as diabetes, asthma, COPD, cancer and mild COVID-19, which have been observed as demonstrating the approach. However, conditions described by Papoutsi et al. (2022) were not always considered as LTCs such as anxiety, post-natal care need and healthy-eating support. The delivery and uptake of VGCs for LTCs is therefore dependent on the use and definition of VGCs themselves.

The format of each VGC also seemed to vary. Papoutsi et al. (2022) highlighted the periodic or regular nature of sessions. Cohort studies described in this synthesis (Mirsky et al., 2022; Mirsky et al., 2023; Tokuda et al., 2016) referred to a 'video group consultation programme', consisting of around four to six sessions, lasting 60-120 minutes, usually involving the same group of patients. The frequency and length of these programmes differed, as Tokuda et al. (2016) described four weekly sessions, followed by two bi-monthly booster sessions for five months, and Mirsky et al. (2022) stated the attendance of four 60-minute VGVs every two weeks.

Despite this, the diversity of formats and purposes employed were heavily dependent on the pragmatic and contextual application of the approach, considered to be practice, clinician and patient dependent.

#### *Pragmatic and contextual application*

Each study reported on the pragmatic nature of VGCs employed for a specific context and/or need. Papoutsi et al. (2022) stated that practice

motivations for the uptake of VGCs were often demand-led, for example, back-log of work, and performance-led, for example, to comply with the QOF to generate practice income. This need for income generation was highlighted overtly by Mirsky et al. (2022) and Mirsky et al. (2023) who echoed the need for patient-specific, individualised guidance about chronic disease in order to bill insurance for reimbursement in the US. In this study, a mixed clinical and educational VGC approach was employed to comply with these standards.

Papoutsi et al. (2022) also highlighted the contextual nature of the pandemic into which VGCs were rapidly initiated as a facilitator to delivery of the approach, stating:

*'the pandemic context appeared to facilitate VGC implementation as many patients and staff became more receptive owing to lockdown and restrictions, disruption to patient support groups, and a shift towards remote interaction' (Papoutsi et al., 2022, p.e487)*

Other pragmatic reasons for the uptake and delivery of VGCs were described by Tokuda et al. (2016) and Mirsky et al. (2022), who took a patient-driven response as the purpose of VGCs. For Tokuda et al. (2016) VGCs were delivered to provide diabetes care to rural populations, due to limited access to services due to socio-demographic contextualities. Similar to this, Mirsky et al. (2022) believed that their demographic population does not receive adequate lifestyle counselling as part of hypertension management and titration of medication dosages.

For HCPs, the drive to deliver VGCs was motivated by the need for increased patient access, in which Papoutsi et al. (2022) quoted an HCP interview stating:

*‘to increase patient access in the context of GP workforce recruitment and retention challenges, support COVID-19 recovery, improve patient satisfaction and experience, enable a ‘coaching’ approach to patient care, achieve better quality clinical consultations, and address isolation in living with chronic illness, compounded by lockdown and the pandemic’ (Papoutsis et al., 2022, p.e488).*

Despite this, internal drive for VGCs, dependent on practice constraints and culture, individual experiences and overall motivations for the intervention, hindered implementation of the approach.

#### **3.4.5.2 The need to create a ‘culture shift’**

The synthesis demonstrated the increased need to create a *‘culture shift’* (Papoutsis et al., 2022, p.e486) to aid uptake and delivery of VGCs for the management of LTCs into primary care general practice. However, a dissonance between the ability to create a *‘culture shift’* and the overall responsibility for VGCs was identified, in particular, in studies by Papoutsis et al. (2022) and Tokuda et al. (2016).

##### *The ability to create a ‘culture shift’*

Papoutsis et al. (2022) considered the need for *‘a bigger operational and cultural shift from usual care practices’* (p.e486) to aid the uptake and delivery of VGCs. Clinical VGCs were reported as having to make a bigger cultural shift from usual care, a reason for the choice of the relatively ‘safer’ educational or informational sessions across primary

care settings (Papoutsi et al., 2022). This shift included '*a steeper learning curve*' (Papoutsi et al., 2022, p.e487) for some practices, as they began both remote delivery and group-based care simultaneously. For other practices, VGCs were viewed as a natural progression from already established face-to-face group consultations, and remote work was already facilitated as a result of the pandemic.

### VGCs as the '*next step*'

The ability to create a '*culture shift*' was driven by motivations from HCPs to embody VGCs as the '*next step*', in studies by Papoutsi et al. (2022) and Tokuda et al. (2016). The extended skill-set employed by delivering VGCs, allowed participants to take leadership roles and extra clinical or operational responsibilities (Papoutsi et al., 2022), for example, receptionists taking on facilitation roles, and healthcare assistants [HCA] increasing their knowledge about diabetes. The rewarding nature of VGCs was reported by both Papoutsi et al. (2022) and Tokuda et al. (2016).

The ability to create a '*culture shift*' was also viewed as dependent on relational coordination between staff and practices. The increased relational coordination enabled sharing of skills and knowledge across HCP roles, often requiring '*staff working together or coordinating across rotations to set up and deliver different sessions*' (Papoutsi et al., 2022, p.e488). This also extended to the shared motivations to drive the delivery of VGCs into practice, as '*enthusiastic staff (clinical and non-clinical) were prepared to make significant effort so that VGCs would work in their practice*' (Papoutsi et al., 2022, p.488).



However, the need for increased collaborative working and extended skill-set highlighted the responsibility VGCs placed on both the practice and clinicians involved in the approach.

### *The responsibility of VGCs*

The responsibility of running and organising VGCs, in particular in the study by Papoutsi et al. (2022) was viewed as difficult. Papoutsi et al. (2022) reported that uptake for initial training on VGCs was largely positive, however, the responsibility of VGCs often caused HCPs to refrain from the approach. This was reported to be because of a lack of time and organisational slack, workload and practice commitment and the complexity of group-based care (Papoutsi et al., 2022).

With regards to workload and practice investment, Papoutsi et al. (2022) alluded to the time commitment involved in setting-up and delivering the approach. In particular, supporting patients with IT was seen to encompass '*significant background work*' (p.e488). Operational work also consisted of a substantial amount of administrative processes such as sending online invitations and reminders, preparing materials, collecting biometric data and following up on any questions (Papoutsi et al., 2022).

However, the adoption of a collaborative approach to share the responsibility of VGCs was a finding highlighted by Papoutsi et al. (2022) stating:

*'introducing this new remote model of group-based care required practice-wide support at all levels, to be able to free up resources and distribute the workload' (Papoutsi et al., 2022, p.e488)*

Staff motivations to take on the responsibility of VGCs often related to perceived clinical and social benefits for patients, the ability to strengthen a virtual rapport with patients, and the general satisfaction with the approach. More specifically, Tokuda et al. (2016) reported a quote taken from an interview with a HCP involved in VGCs, stating:

*'both providers expressed that "it was very rewarding to see challenging, high-risk patients become better self-managers, teachers and motivators for other patients, as well as have improved clinical outcome measures after participation in video-SMA" (Tokuda et al., 2016, p.39)*

The need to create a 'culture shift' was determined by the ability to initiate change, the receptiveness of practices, clinicians and patients, and the responsibility employed in setting-up and delivering VGCs in primary care. The importance of a collaborative approach to delivery determines the viability of uptake in accordance with professional roles and responsibilities and practice need.

#### **3.4.5.3 Seeking a 'human connection' online**

The synthesis revealed the importance of seeking a 'human connection' online in engaging both clinicians and patients in the uptake and delivery of VGCs. The impact of the pandemic meant patients needed ways to remotely access primary care services to manage their long-term health needs, and for clinicians, the rapport with patients was considered lost or forgotten about during this time. The need for effective facilitation strategies aided the ability to demonstrate a virtual 'human connection'.

### *The demand for distanced access*

Interviews with patients in the study by Papoutsi et al. (2022) reported valuing access and connection associated with VGCs. Patients preferred the convenience of a virtual approach, in particular, patients who were shielding at the time and *'wanted to avoid the 'anxiety of being in a public place'* (Papoutsi et al., 2022, [Interview 21, Patient], p.487), or those with mobility or childcare issues, as they could remotely attend a consultation. Patients further discussed feeling more connected through participation in a VGC, for example, the nurse was able to know a patient's situation better, having a more personal rapport with them, rather than merely knowing them through his 'medical records' (Papoutsi et al., 2022).

This value placed on access and connection led the delivery of VGCs to foster a 'human connection' to aid uptake and engagement of the approach.

### *VGCs fostering a 'human connection'*

A *'human connection'*, articulated by a patient in the study by Papoutsi et al. (2022), was evident more specifically, when engaging in peer support and sharing their experiences of managing the same or similar LTCs. Tokuda et al. (2016) who conducted patient interviews on their experiences of video-shared medical appointments perceived that *'they learned a lot from others in the group and that peer interaction and support was beneficial'* (Tokuda et al., 2016, p.38).

Increased peer interaction and support was considered by Tokuda et al. (2016) to contribute to improvements in patient outcomes, as one HCP was quoted:

*'patients learn from each other about solutions to tackle the day-to-day challenges in a way that is impossible to achieve in traditional individual clinic visits'* (Tokuda et al., 2016, p.39)

However, patients also alluded to the need for more individualised time with clinicians within the VGC to ensure there was enough time to speak about personal concerns, as well as shared issues (Tokuda et al., 2016).

Patients interviewed by Papoutsi et al. (2022) felt the dynamic of a VGC was inefficient, due to differences in personality, hindering the ability to foster a 'human connection', as one patient was quoted:

*'I'm not really a great joiner-in. I would class myself as not social in that kind of way. I tend to be an individual in terms of getting things done and not wanting to hang out with lots of people, to be honest'* (Papoutsi et al., 2022, p.e486)

However, the need for a 'human connection' was not only valued as a means of peer support for patients but to strengthen the rapport between clinicians and patients virtually, due to the distancing of care models imposed as a result of the pandemic.

#### *Strengthening the virtual rapport*

The study by Papoutsi et al. (2022) highlighted the importance of the ability of VGCs to strengthen a virtual rapport between clinicians and

patients. Initially, in interviews with HCPs, Papoutsi et al. (2022) found that HCPs felt VGCs appeared 'scripted', with an inability to establish a rapport virtually, compared to an in-person group model. However, the peer support aspect of the consultation was valued, allowing patients to open-up discussions regarding their health, and for HCPs to explore a deeper dynamic with patients (Papoutsi et al., 2022).

One way the virtual rapport was strengthened was due to pre-existing relationships and time spent with patients, which allowed staff to understand the dynamic of the group of patients involved and how to tailor health advice to individual contexts and situations (Papoutsi et al., 2022). This relationship was often fragmented when pre-existing understanding of patients' needs were not established (Papoutsi et al., 2022).

#### *Effectiveness of VGC facilitation strategies*

Across interviews with HCPs, in the study by Tokuda et al. (2016), the effectiveness of VGC facilitation strategies was important to the sustained uptake of the approach and impactful delivery. For example, facilitation strategies included interactive games, patient education tools such as report cards or self-monitoring tools, to promote engagement and interactive discussion within the group (Tokuda et al., 2016). This aided the 'human connection' and strengthened the rapport between clinicians and patients in and outside of the group setting.

The importance of considering cultural contexts was raised as an important finding in the paper by Tokuda et al. (2016), due to the pragmatics associated with context and culture which were central to the

study's patient population. Tokuda et al. (2016) reported that patients stated practices valued diversity with sensitivity, as cultural backgrounds can inherently affect group interaction. Practices employed adaptable techniques to tailor the video-shared medical appointment based on cultural backgrounds and beliefs (Tokuda et al., 2016).

Therefore, the ability to foster a 'human connection' was considered to be dependent on the importance of peer support and engagement, the value placed on the patient/clinician relationship, the effectiveness of facilitation techniques to establish a group dynamic and the ability to tailor consultations based on patient's needs and cultural background.

#### **3.4.5.4 An increased motivation for self-management and concern over health**

The synthesis demonstrated an increased motivation by patients for self-management and an overall increased concern regarding their health needs. This related to a rising interest in health priorities, with a self-efficacy to perform self-management, dependent on sustained attendance and an improvement in clinical outcomes.

##### *An increased concern for health priorities*

Interviews with patients regarding their experiences with video-shared medical appointments found an increased motivation for self-care and behaviour change, due to the awareness of self-care skills learnt from the group (Tokuda et al., 2016). For example:

*'now that I know what can happen if I don't eat right and take my medications...now that I know all the problems that I can have with my feet, eyes and heart I am going to be more careful' (Tokuda et al., 2016, p.38)*

Patients further reported on the increased relevance of information within a group setting, due to open discussion, ability to ask questions and a common shared understanding of managing a LTC. Examples of this include:

*'I found it informational. . .I learned a lot about my diabetes and what I need to do to prevent complications' (Tokuda et al., 2016, p.38)*

*'the providers answer all my questions and explain to me what is happening and why' (Tokuda et al., 2016, p.38)*

This increased learning and knowledge gained from participating in VGCs aided patient uptake of the approach, as Tokuda et al. (2016) quoted a patient's words, stating, *'I think there is a great need for something like this for everyone' (Tokuda et al., 2016, p.38)*

Attendance of VGCs by patients in the study by Tokuda et al. (2016) was high, with 87% of patients attending at least five of the six sessions delivered. Mirsky et al. (2023) highlighted that increased attendance aided greater self-management and increased lifestyle medicine behaviours.

### *The 'dose effect'*

The '*dose effect*', a phrase coined by Mirsky et al. (2023), was used to describe the importance of long-term participation in video group visits, contributing to increased lifestyle change after completing a virtual group visit programme. Mirsky et al. (2023) found that more patients who attended one to four virtual group visits made no lifestyle changes compared to those patients who attended more than five virtual group visits. Those patients who attended more than five virtual group visits experienced the largest self-reported benefit. However, 75% of patients who attended one to four virtual group visits and 89% of patients who attended more than five virtual group visits reported maintaining lifestyle changes 'some' or 'a lot', but no significant difference was found between groups (Mirsky et al., 2023).

The '*dose effect*' and need for long-term commitment was also valued by HCPs, as Papoutsi et al. (2022) found that staff valued VGCs where they had a better connection with their patients due to a greater understanding of patients' needs and concerns.

### *Demonstrating value in improving clinical outcomes*

Whilst the increased motivation for self-management of LTCs by patients was highlighted within the studies, the need to demonstrate value in improving clinical outcomes was identified as important within in this synthesis. Cohort studies such as Tokuda et al. (2016) found improvement to HbA1c results for diabetes, and Mirsky et al. (2022) observed an improvement in blood pressure control and a reduction in



anti-hypertensive medications. Although, in both studies, confounders were not clearly described or identified, for example, Tokuda et al. (2016) found that the video-shared medical appointment group had a higher trend of prescription rates for metformin and ACE inhibitors, compared to the control group.

Patients who self-reported change in behaviour and health changes were eating healthier, increasing physical activity, losing weight, and reducing stress (Mirsky et al., 2023). Similarly, Tokuda et al. (2016) found a concordance with the chronic care model, with patients self-reporting alignment with this model 'most of the time' to 'always' range.

Therefore, uptake and delivery of VGCs was dependent on patient and clinician understanding about the value of the approach in contributing to health outcomes and lifestyle change. Whilst this motivation was evident across studies (Mirsky et al., 2022; Mirsky et al., 2023; Tokuda et al., 2016), the need to establish the pragmatics surrounding delivery of the approach to a diverse range of patients is necessary.

#### **3.4.5.5 The fragmentation of distanced care delivery**

The synthesis identified the logistics involved in delivering VGCs, leading to a fragmentation of services, dependent on the socio-demographics of the population, the receptiveness of digital technologies, the existing and adapted technological infrastructures and the uncertainty surrounding the resources required.

### *Socio-demographic adaptation*

The uptake of VGCs and the way the approach has been delivered was identified as dependent on the socio-demographic contexts. The studies included within this synthesis (Mirsky et al., 2022; Mirsky et al., 2023; Papoutsi et al., 2022; Tokuda et al., 2016) lack generalisability to due to the individual determinants of the study sample population. Small sample sizes make it difficult to apply these results to other similar primary care general practice settings.

The importance of cultural sensitivity was therefore discussed in the study by Tokuda et al. (2016), quoting a patient stating:

*“she [the video-SMA provider] knows it is different over here. We have our [customary] barbecues and everyone tells you to eat, eat! It is hard to say no. . .’ and ‘. . .the food we have is different, we have our poi poi and we make our food different; she knows that” (Tokuda et al., 2016, p.38-39)*

The heterogeneity identified across primary care contexts within these studies also reflects varying populations and contextual health needs. For example, a UK primary care setting may differ to a primary care outpatient clinic affiliated with a hospital in which there is a distinct difference between health needs and clinical baselines.

Therefore, VGCs are viewed as having to align to these contexts and demographics for successful uptake and delivery in primary care general practice settings.

### *The challenge of digital inclusivity*

Not only did the studies included within this synthesis identify the need to account for socio-demographics, the importance of acknowledging the digital inclusivity of the population was paramount. Whilst Papoutsis et al. (2022) recognised that VGCs are able to help clinicians and patients feel connected, taking a more personal approach to healthcare delivery, the pragmatics of getting patients 'connected' was described as difficult. Not all patients had the IT skills to independently join a VGCs, and others had limited or no access to technology (Papoutsis et al., 2022). Often, HCPs had to spend time supporting patients to access video platforms (Papoutsis et al., 2022).

However, a significant finding by Mirsky et al. (2022) identified that it is not known how virtual interventions affect patients with hypertension, who have limited access to technology and/or high-speed internet needed for remote virtual access to care. This dissonance between socio-demographic populations and contexts and the challenge of digital inclusivity was thus highlighted to be an important factor in determining the uptake and delivery of VGCs for LTC management in primary care general practice.

### *The detachment of technology and infrastructure*

Studies (Papoutsis et al., 2022; Tokuda et al., 2016) identified the barriers to the uptake and delivery of VGCs based on the lack of infrastructure to support the approach and the adequacy of technology employed.

Papoutsi et al. (2022) found that VGCs initiated at the beginning of the pandemic, did not have the equipment in place to deliver the approach, such as webcams and appropriate internet connections. Video-platforms such as Microsoft Teams were considered in their infancy and caused problems with initial configuration and set up. Staff using video-platforms often felt technological problems looked 'unprofessional' to patients (Papoutsi et al., 2022).

Tokuda et al. (2016) highlighted that establishing a telecommunication system which allows the virtual exchange of information was difficult in remote settings, due to physical distance, a lack of staff to support the approach and establishing an internet connection. Remoteness of practices led to further difficulties such as a 'medication lag', a lag time between the central pharmacy and delivery of medication of patients, which created complications in initiating new medication therapies (Tokuda et al., 2016). Also, the physical distance, despite remote connection, made it difficult to obtain biometrics in a timely manner, such as vital signs and blood results.

Concerns regarding confidentiality were expressed in the study by Papoutsi et al. (2022), as governance associated with virtual care was relaxed during the pandemic. The need to address online confidentiality, consent and risk was seen to be of importance for future delivery of VGCs, yet there was no recommendations or examples of infrastructure to support this.

Thus, the fragmentation of distanced care delivery was demonstrated as having implications for the uptake and delivery of VGCs, based on

practice pragmatics, the socio-demographics of the patient population and the access to digital technologies.

### **3.5 Discussion**

#### **3.5.1 Summary of main findings**

Factors affecting the uptake and delivery of VGCs for the management of LTCs in primary care general practice range were identified from patient, clinician and practice level. The various conceptualisations of virtual group-based care across the different studies (Mirsky et al., 2022; Mirsky et al., 2023; Papoutsi et al., 2022; Tokuda et al., 2016) led to diversity in the ways VGCs were delivered in practice. Delivery at practice level was thus dependent on pragmatic and contextual applications of the approach, based on socio-demographic adaptation, the challenge of digital inclusivity, and concerns regarding technology.

Studies highlighted that delivery of VGCs is determined by uptake of the approach at staff and patient levels. For general practice staff, there was a need to create a 'culture shift' to enable newer ways of working, driven by HCPs motivation to take responsibility for the approach (Papoutsi et al., 2022). For both staff and patients, uptake was focused on the need to seek a 'human connection' online, with three of the four studies conducted during the course of the pandemic, when distanced care delivery was a necessity (Mirsky et al., 2022; Mirsky et al., 2023; Papoutsi et al., 2022). This drive for uptake of the approach further extended to patient's increased motivation for self-management and concern over health, in which studies highlighted value of increased attendance in

relation to lifestyle change (Mirsky et al., 2023) and a demonstrated value in improving clinical outcomes (Mirsky et al., 2022; Tokuda et al., 2016). Synthesis of these findings thus highlighted the clinical benefits of VGCs for both LTC management and patient motivation, based on individual practice contexts and demands.

Overall, studies included in the review had generally positive findings and outcomes related to managing LTCs using VGCs. Tokuda et al. (2016) demonstrated a statistically significant difference in HbA1c and emergency department visits between the intervention and control group, yet this did not extend to outcomes related to blood pressure, lipids and hospitalisations. Mirsky et al. (2022) found a statistically significant reduction in both systolic and diastolic blood pressure as a result of the VGV intervention. Mirsky et al. (2023) further highlighted that greater attendance of VGVs by patients led to positive improvements in behaviour change. Whilst Papoutsis et al. (2022) did not measure outcomes, key findings from the study suggest that the majority of patients valued the human connections established and increased access and engagement using VGCs. However, the quantity, nature and strength of evidence may undermine confidence in these positive impacts of VGCs due to small sample sizes and low response rates. Therefore, further mixed-method research is currently being conducted, using both co-design and participatory methods to aid learning on video and hybrid group consultations to demonstrate utility of the approach (Nuffield Department of Primary Care Health Sciences, 2024).

### **3.5.2 Comparison with existing literature**

This review identified four key discussion points, considering the existing literature associated with VGCs, into factors that affect uptake and/or delivery of the approach: i) the importance of individual practice context; ii) the discord between evidence-based practice and practice-based evidence; iii) managing LTCs using VGCs; and iv) the capacity of primary care settings. These insights contribute to an enhanced and holistic understanding of this approach beyond the primary studies related to the existing literature on the topic.

#### **3.5.2.1 The importance of individual practice context**

This review demonstrated the importance of an individual practice context in determining factors affecting VGCs to manage LTCs in primary care general practice. Lau et al. (2016) highlight the importance of the alignment between the intervention and context, impacting how interventions are implemented, and the outcomes measured. It is important to note that whilst the studies included primary care settings comparable to a UK general practice setting, papers by Mirsky et al. (2022) and Mirsky et al. (2023) were set in a primary care clinic affiliated with a secondary care hospital. The study by Tokuda et al. (2016) was also conducted in an outpatient setting yet was considered to be comparable to the UK general practice setting due to the services the clinic offered. This heterogeneity in contexts may impact the transferability and applicability of findings to a UK general practice setting.

Primary care settings are distinctive from other health systems, as they *‘straddle the public-private sector interface’* (Huddleston et al., 2020, p.204; Miller, 2017), creating variance across the general practice landscape with regards to clinical function, organisational arguments, workforce complexion, and funding (Huddleston et al., 2020; Miller, 2017). Jones et al. (2019) recommend the need for a systems approach in embedding group consultations across the NHS, recognising the importance of individual systems in a multi-faceted context.

In particular, studies by Mirsky et al. (2022) and Mirsky et al. (2023) highlight the contextual factors associated with the American health system, emphasising the importance of ensuring that virtual group visits can be billed on patients’ insurance, which in turn determines a clinical approach to VGCs. This is aligned with the findings from Patel et al. (2023) in which a virtual diabetes reversal programme directly benefits the health network financially, with the opportunity to bill insurances under the 12-week intervention.

In addition, the size and characteristics of PCNs in England demonstrate substantial variation, in which practices face different organisational challenges in delivery of services based on size and the socio-demographics of the population. During the study selection process, numerous authors were contacted to clarify practice context, due to ambiguity in the studies themselves and varying definitions of what constitutes as ‘general practice’. Considering this, Checkland et al. (2018) suggest effective commissioning of primary care services aligned with a detailed local knowledge of the practice and populations.



The findings identified in this review pose uncertainty regarding implementation, dependent on individual pragmatic factors and practice-based organisational challenges. Due to the intrinsic contextual differences between practices, a blanket approach to embedding research into practice cannot be upheld (Waltz et al., 2019). Swaithes et al. (2021) identify the need to consider implementation planning with an implementation strategy for group consultations, considering contextual circumstances. The Integrated Promoting Action on Research Implementation in Health Services [i-PARIHS] framework has been used comprehensively as a means to guide implementation in numerous contexts (Bauer et al., 2015; Bauer et al., 2018; Hunter et al., 2020; Mudge et al., 2017; Swaithes et al., 2020). Examining implementation processes through the i-PARIHS lens can highlight interactions between facilitation, innovation, recipient and contextual constructs, which is helpful in the planning of future interventions that reflect a systems approach to improving care (Harvey & Kitson, 2015; Laycock et al., 2018).

The i-PARIHS framework is an iterative and integrated approach, useful in conceptualising 'successful implementation' of an intervention (Harvey & Kitson, 2016; Kitson & Harvey, 2016), dependent on facilitation, innovation, recipients and context. Successful implementation, in this instance, can be defined as an achievement of agreed implementation or project goals, resulting from facilitation of an intervention by recipients in their own contexts (local, organisational and health systems) (Harvey & Kitson, 2015; Harvey & Kitson, 2016). The i-PARIHS framework demonstrates the need for each construct to be viewed in relation to each other, recognising that implementation is a non-linear and multi-factorial process. This extends to recognising the role of the recipient, both at an

individual and collective level, as well as highlighting the importance of both outer and inner contexts. The i-PARIHS framework can therefore guide 'how' the process of implementation is conducted and approached (Harvey & Kitson, 2016).

The inconsistency between the constructs, *innovation*, *recipients* and *context* (Harvey & Kitson, 2016) demonstrates the challenge of 'creating a 'culture shift', and 'the fragmentation of distanced care delivery'. With regards to 'creating a 'culture shift', the authors of i-PARIHS recognise the interplay between these constructs in determining successful implementation, and therefore the incongruence identified may cause fragmentation and barriers to uptake, delivery and implementation of the approach. Lau et al. (2016) argue the presence of a positive culture which is receptive to change is important for implementation, demonstrating leadership, organisational readiness and strategic planning. However, it is not clear from this review how implementation was approached dependent on the factors affecting uptake and delivery of VGCs. Also, there is limited application of the i-PARIHS framework in primary care health care settings, due to issues regarding measurement of implementation and adoption of findings, hindering the reliability and applicability of results (Laycock et al., 2018).

### **3.5.2.2 The discord between evidence-based practice and practice-based evidence**

This review highlights the discord between evidence-based practice and practice-based evidence (Lau et al., 2014; Lau et al., 2015; Lau et al., 2016). This finding is not surprising, as Lau et al. (2016) argue that primary care has its own distinctive research and implementation culture, which contributes to the 'evidence to practice gap' or 'second translational gap' (Braithwaite et al., 2018; Lau et al., 2015; Lau et al., 2016; Salmon et al., 2007; Woolf, 2008).

Whilst the aim of this review was to include published evidence on VGCs, it is important to note the on-going work surrounding VGCs, identified via database searching, that is yet to be published (Newcastle University, 2024; Nuffield Department of Primary Care Health Sciences, 2024). Although protocols and conference proceedings were excluded in the study selection process of the review, the recognition of VGCs as a future area of research interest is paramount.

Therefore, due to the lack of published research evidence, searching grey literature was used to identify the types of evidence published on VGCs. There is a notable amount of case studies related to the delivery and experiences of VGCs for both HCPs and patients, usually conducted by training providers and investors in the approach (ELC Works, 2024a; Group Consultations Ltd., n.d). In addition, studies by Tokuda et al. (2016) and Mirsky et al. (2022) were conducted as a pilot, demonstrating the infancy of published data surrounding VGCs.

The findings from this synthesis echo the inconsistencies between evidence-based practice and practice-based evidence, due to the small

number of published studies included (Lau et al., 2014; Lau et al., 2015; Lau et al., 2016). Also, the inclusion of one study as a quality improvement initiative (Mirsky et al., 2022), due to its identified valuable findings, led to consideration of the types of data being produced on VGCs. Case studies tend to selectively report results based on practice priorities; however, evidence-based research requires a level of transparency not necessarily found through case study evidence.

Considering the i-PARIHS framework, the 'evidence' construct articulated in a previous version of the approach was replaced with 'innovation', negating the need to focus on systematic reviews or trials as evidence, as findings are rarely utilised and applied in clinical practice (Bergström et al., 2020; Harvey & Kitson, 2016). The need to recognise the value of evidence generated from real-world practice is therefore important, considering the value of stakeholders in contributing to new and emergent types of evidence (Harvey & Kitson, 2016). The lack of a focus on 'evidence' highlights a shift from solely relying on traditional forms of evidence and instead considering a broader range of evidence types, reflecting the various dimensions associated with implementation of VGCs (Bergström et al., 2020).

### 3.5.2.3 The capacity of primary care settings

The capacity of primary care setting was considered to be an important consideration from the review. The ability to initiate and sustain VGCs was dependent on a multitude of barriers and facilitators, internal and external to the practice. The capacity of primary care settings may be viewed in relation to the Absorptive Capacity [ACAP] of an organisation (Cohen & Levinthal, 1989; Vasconcelos et al., 2019). ACAP is defined as *'[...] an ability to recognize the value of new information, assimilate it, and apply it to commercial ends'* (Cohen & Levinthal, 1989, p. 128), dependent on a pre-existing knowledge-base. ACAP is inclusive of four domains which describe the processes and capabilities of organisations in identifying, absorbing and using knowledge in clinical practice (Figure 12).

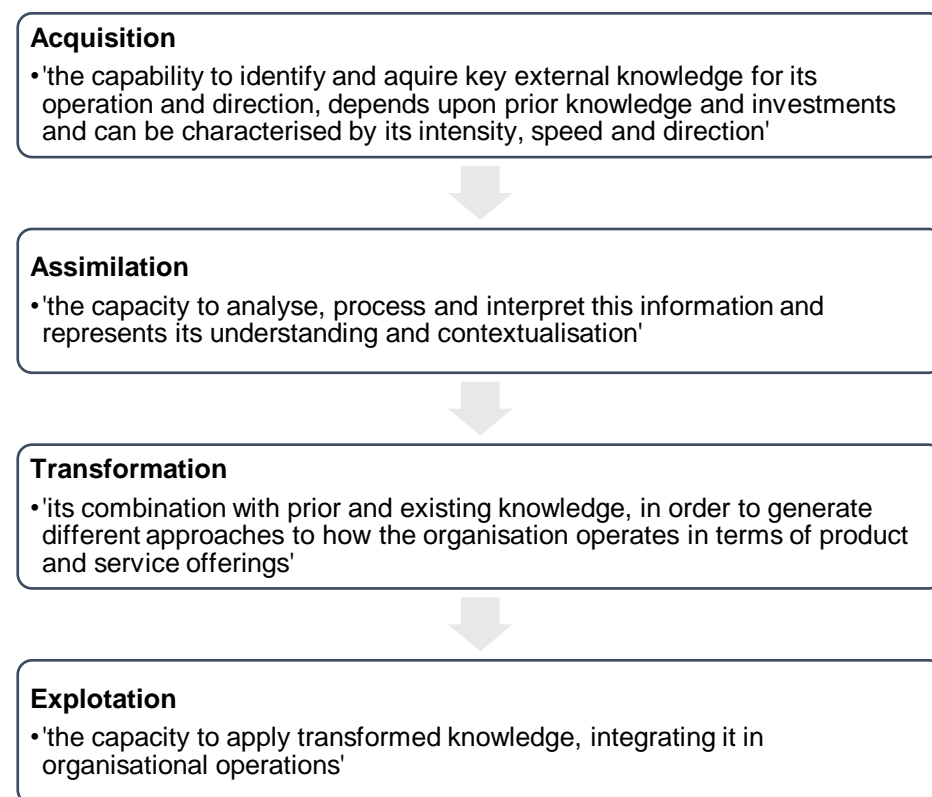


Figure 12: The four domains of ACAP (taken from Vasconcelos et al., 2019 description of Zahra & George's reconceptualised framework (2002))

The ability to adopt ACAP in general practice is difficult due to pragmatic barriers to the value, assimilation and use of knowledge (Vasconcelos et al., 2019). The varying contexts identified across the general capacity explain why uptake and delivery in some practices are more advanced than others, due to the varying ACAP demonstrated across these organisations.

However, ACAP is not only calculated at one point in time but is dependent on a range of dynamic barriers and facilitators. Lau et al. (2016) believe that barriers and facilitators change over time, interact with one another and cannot be considered in isolation (Checkland et al., 2007; Durlak & DuPre, 2008; Haynes & Loblay, 2024; Lau et al., 2016). This resonates with the systematic review by Greenhalgh et al. (2004) which describes that many studies fail to address the interactions between levels and account for contextual and pragmatic issues. For example, factors associated with context may be perceived as barriers at the start of implementation, yet may be facilitators during the implementation process.

Due to this, consideration of the capacity of primary care settings to deliver newer ways of working was paramount as, three of the four studies included in this review were conducted during the pandemic. Grut et al. (2023) highlighted the challenges within primary care at the time of the pandemic, as GPs believed they were *'thrown in at the deep end'* (p.6), demonstrating the initiation of overnight change, a lack of support and the need to fill the gaps (Grut et al., 2023). This review highlighted the need for strategic planning for delivery and consideration of the practice context and socio-demographic population.

#### **3.5.2.4 Managing LTCs using VGCs**

The review highlighted factors affecting the management of LTCs using VGCs. Similar to the definition proposed by Papoutsi et al. (2022), existing literature on in-person group consultations identified the need for an individual clinical consultation within a group setting, to replace routine general practice care (Booth et al., 2015; Gandi & Craig, 2019; Graham et al., 2021; Jones et al., 2019). Wadsworth et al. (2019) argue for refinement of the approach by standardisation of patient satisfaction and clinical outcomes due to the proposed benefits for LTC management and patient experience.

However, during study selection this distinction was not evident. The ambiguity between educational programmes and clinical VGCs led to the exploration of grey literature to identify features of this overlap and tighten exclusion criteria based on the lack of individualised clinical consultations within a group setting. Management of LTCs was not just identified as managed through a clinical consultation, but encompassed a range of educational and informational programmes that support the management of LTCs in general practice (Azar et al., 2015; Brown et al., 2020; Dhaver et al., 2023; Dinh et al., 2023; Drake et al., 2023; Mash et al., 2023; Nuñez et al., 2023; Ritchie et al., 2023; Shah et al., 2024). Much of the literature also related to managing mental health related with LTCs, yet this was not the focus of this review (Greco et al., 2021; Shapira et al., 2021). Rehabilitation groups were further identified in supporting LTC management (Calvo-Paniagua et al., 2022; Walter et al., 2023).

Therefore, this review highlighted that the management of LTCs in primary care settings using a virtual group approach is very diverse. The

need to refine definitions surrounding VGCs may aid the uptake and delivery of the approach into practice, due to the ability to demonstrate impact of the intervention based on a tangible definition and consensual understanding.

### **3.5.3 Strengths and limitations**

#### **3.5.3.1 Strengths**

This systematic review has a number of methodological strengths. This review followed a clear and well-articulated protocol (PROSPERO registration number: CRD42021220258), enhancing the credibility and transparency of the review process (Appendix 5). The search strategy was comprehensive in nature, working with systematic review experts [NC] and the supervisory team to ensure a systematic approach was taken. The use of the Cochrane online text-mining programme, *Covidence* (<https://www.covidence.org/>), allowed for a structured and systematic processes through the study selection process and also enabled transparency and clear documentation of decisions made and exclusion reasons.

Double reviewers were also used at title, abstract and full-text stage and piloted data extraction. This helped to enhance the internal validity of the systematic review, drawing on consensual and debated conclusions about the current evidence on VGCs in primary care. Reflexivity was maintained throughout this process, documenting key decisions and approach taken.



At full-text stage, an over-comprehensive approach was adopted due to ambiguity surrounding the intervention and primary care contexts, explaining the number of studies included in full-text review. This was also adopted to avoid excluding potentially relevant studies. Whilst the systematic review was protocolised at the beginning of the PhD, a decision to conduct the searches towards the end of the programme also helped to identify all possible studies relevant to VGCs in primary care, due to concerns regarding a lack of an evidence base at initial conceptualisation.

The review followed a synthesis process based on published guidance on the conduct of narrative synthesis (Popay et al., 2006) which aided the robustness of the synthesis process. Key findings were explicitly and transparently documented from where findings were sources and how findings were grouped together (Appendix 13; Appendix 14). The use of multiple quality appraisal tools also helped to enhance the robustness of the review by recognising the limitations of the CASP tools (CASP, 2024) in addressing various study designs and methodologies. The use of the PRISMA checklist (Page et al., 2021) ensured transparent documentation of the systematic review (Appendix 10).

Overall, the review makes a unique contribution to the evidence base on the uptake and delivery of VGCs in primary care general practice. Exploring the published research evidence on VGCs, rather than what individual HCPs and patients experience, has informed knowledge and provided an insight the landscape underpinning uptake and delivery of VGCs in primary care from the literature itself.

### **3.5.3.2 Limitations**

Due to the diversity of VGC approaches demonstrated, a limitation of this systematic review is the possibility that not all relevant studies will have been identified. In addition, the search strategy did not capture VGCs related to 'virtual group education', as this was not the primary focus of the systematic review. Therefore, the comprehensive searching of grey literature allowed possible identification of all potential studies, as well as aiding the distinction and highlighting the overlap between different models of virtual group-based interventions. Many studies identified through database searches were conference abstracts or not yet published full-text articles. Thus, additional searching of grey literature helped to ensure all possible results were encapsulated, beyond results identified within the databases.

As the majority of studies were single screened at title and abstract stage, this may have introduced risk of bias. However, the use of the Covidence platform enabled efficient and consistent screening through automation tools such as highlighting words relevant to the eligibility criteria, which enabled visual prompts to aid inclusion and exclusion of particular studies. Also, 5% of studies were independently double screened at title and abstract stage to aid consistency of selection across reviewers. Furthermore, Covidence enabled studies screened to be reviewed after inclusion at full-text stage, which facilitated double-checking of studies screened at title and abstract stage. Consensus meetings were held throughout the study screening process which further facilitated discussions surrounding the appropriateness of studies for inclusion. Reasons for screening decisions were also documented to aid transparency in helping to validate the process.

Whilst inclusive of a range of LTCs, this review only included primary studies related to diabetes and hypertension, whilst Papoutsis et al. (2022) identified the use of VGCs for other conditions managed in primary care. Also, international contexts cannot be completely transferable to a UK primary care general practice setting. This was evident during the study selection process where the context of study had to be clarified with the authors to ensure that the correct context was reflected. The small sample sizes of patients and/or HCPs included in the studies limit the generalisability of results to other contexts and settings.

Despite a small number of studies being included in the final review synthesis, the depth of critical analysis and findings identified is a valuable strength, contributing to building the knowledge base on VGCs. The purpose of a narrative synthesis is to find sufficient studies that are relevant and contribute to the review, not whether the review was completely exhaustive (Popay et al., 2006).

#### **3.5.4 Implications for clinical practice**

This review identified three important considerations for clinical practice. Firstly, the pragmatic nature of factors affecting uptake and delivery of VGCs for the management of LTCs in primary care general practice limits the transferability to individual practice settings. As three of the four papers included in the systematic review were based internationally, synthesised findings may not be generalisable to the UK primary care context and more specifically, relevant to individual practice constraints. The findings identified from this review should therefore be conceptualised pragmatically based on individual practice settings.

Secondly, this review highlights the distinction between VGCs and virtual group education. This distinction is paramount within primary care clinical practice, as the purpose of existing virtual group education programmes, established for LTCs, are often confused or mistaken with the use of VGCs. This review therefore sheds some light on the differences between the approaches, by excluding papers related to virtual group education in its entirety.

Finally, this review highlights key considerations in determining the viability of VGCs for the management of LTCs. Whilst primarily this review focused on diabetes and hypertension, factors affecting the intervention itself can be applied to a wide range of LTCs. However, the need to collaborate with the entire practice and relevant stakeholders in the uptake and delivery of VGCs to ensure successful or potential implementation of the approach to manage LTCs is required (Boaz et al., 2018; Boote et al., 2011).

### **3.5.5 Implications for research**

There is a clear need for more research to be conducted on VGCs in a UK primary care setting, as only one of the studies included in the review is based in the UK. In addition, more published research is needed that focuses on the viability of VGCs in everyday clinical settings, contrary to existing case studies on use of the approach in practice. Where possible, the use of both qualitative and quantitative research, as well as co-production, is needed to determine the pragmatic use of VGCs in primary care practice and potential future research priorities (Smith et al., 2022).

The pragmatic nature of the research issue itself perpetuates the need for a reflexive approach to understanding VGCs and the landscape of primary care across international settings. This review has highlighted the need for reflexivity in research to ensure correct transferability, applicability and generalisability of findings across contexts and settings.

### **3.5.6 Implications of the systematic review for this thesis**

The findings from this review have informed the next stage of the thesis by:

- i) Identifying a gap in the evidence base by the paucity of published evidence on VGCs in primary care general practice in the UK
- ii) Signpost the need for further empirical evidence on the approach
- iii) Considering the viability of VGCs for LTC management
- iv) The importance of individual practice contexts in the discussion of 'top tips' for practice.

These implications will help both clinicians and researchers to better understand the factors hindering or facilitating the uptake and delivery of VGCs, taking a more pragmatic and contextual approach to implementation and understanding.

### **3.6 Reflexivity**

A reflexive journal was kept throughout this research study to document key decisions and thoughts (Appendix 15). A decision was made to conduct a systematic review, rather than a literature review, to highlight the gap in evidence through a systematic search of the published research evidence base. The purpose of a literature review, which provides the context to this thesis, is to summarise the available literature on the topic and highlight gaps for further consideration (Winchester & Salji, 2016). However, a systematic review takes this process one step further in systematically including all relevant studies related to a pre-defined eligibility criteria.

Also, whilst the protocol for this systematic review was registered at the start of the PhD, a decision was taken to conduct the review at a later stage to ensure all possible studies were included throughout the duration of the PhD. The limited evidence base on VGCs at the time of registration meant that there was an increased chance of further studies published during this time.

With regards to the databases used within the review, a number of databases were considered for inclusion. Whilst the majority of databases included varying scope, I decided to include both PubMed and MEDLINE, despite overlapping results. This was supported by the supervisory team in which PubMed had value for the research question, incorporating a larger scope of academic and clinical studies and therefore would be considered in the review as an addition to MEDLINE.

A decision was made to include two quality appraisal tools after an iterative application of the CASP tool (CASP, 2024), in which there was

limited applicability to study types and the questions each checklist asked. Therefore, the MMAT (Hong et al., 2018) aided a more appropriate and comprehensive appraisal of the included paper based on data type rather than study design.

To ensure that the aims and objectives of the review were met, LTCs were considered as part of eligibility and data extraction. Due to the varied nature of VGCs, the decision to focus the review on LTCs more specifically was made, as it is evident that from the review of the literature, this is where the gap lies. A definitive criterion of LTCs included in the review is provided in this chapter in more detail.

### **3.7 Chapter summary**

This chapter presented a systematic review and narrative synthesis of the factors affecting uptake and delivery of VGCs for the management of LTCs in primary care general practice. The review incorporated both the experiences of HCPs and patients to address an important research gap in this context and a rich and detailed synthesis of included studies has been provided. Five key findings were presented along with the implications of these for clinical practice and research, and the development of this thesis.

This review has uniquely contributed to the evidence on VGCs, as the first known systematic review to synthesise published research studies on the approach. The review has also highlighted the paucity of evidence on VGCs, and the need for future evidence to guide delivery and implementation into practice.

In consideration of implementation theories and frameworks, such as i-PARIHS (Harvey & Kitson, 2016) and ACAP (Cohen & Levinthal, 1989), in addition to the constructs defining the application of VGCs by Papoutsis et al. (2022), the importance of individual context has been well-considered. The paucity of evidence on VGCs identified may be explained through the application of i-PARIHS, which highlights the importance of the interplay between the innovation, recipients and context including individuals and organisations.

The following chapter describes the philosophical, theoretical and methodological considerations for this thesis.



# **Chapter 4: Philosophical, theoretical and methodological overview**

---

## **Chapter 4: Philosophical, theoretical and methodological overview**

---

### **4.1 Introduction**

The former chapter has presented a systematic review of the best evidence on VGCs for the management of LTCs in a primary care general practice setting, highlighting the gaps in the literature and need for further investigation. To best address the gaps in the literature, this chapter presents an overview of the study design used. The chapter continues to provide philosophical, methodological and virtual considerations for the choice of study methods within this thesis. The chapter concludes with an account of reflexivity and a chapter summary.

### **4.2 Overview**

This thesis takes a multimethods research design, comprising three distinct but complementary research methods to explore the role, delivery and implementation of VGCs in primary care general practice. A detailed overview of the studies is presented in Figure 1 and an overview of the study design in Figure 13.

A brief rationale for the choice of these distinct research methods and the relevant objectives addressed by each method is outlined below:

1. A systematic review was conducted to identify, quality appraise and synthesise the best evidence on the factors affecting uptake and delivery of VGCs for the management of LTCs in primary care general practice (objective 1).

2. A cross-sectional survey was undertaken to demonstrate the uptake and use of VGCs within general practices across the UK, to develop a greater understanding of the role VGCs have currently in primary care (objective 2).
3. Individual semi-structured interviews were conducted with a range of HCPs who had been involved in/delivered/implemented VGCs into general practice to gather further in-depth insight of the experiences and perceptions of the implementation and impact of the approach (objective 3).
4. 'Top tips' regarding the implementation of VGCs in primary care general practice was considered as a final aspect of the thesis (objective 5).

Stakeholder engagement was facilitated throughout the research, in which two stakeholder advisory group [SAG] meetings were conducted to inform both the cross-sectional survey and individual semi-structured interviews (objective 4).

A PPIE meeting was also conducted to inform the recruitment methods, interview topic guide and supporting documentation for phase three of the research (objective 4). In addition, findings from the interview study were also presented to Keele University's Lay Involvement in Knowledge Mobilisation [LINK] group to gather patient perspectives on the findings and identify further opportunities for research (objective 4).

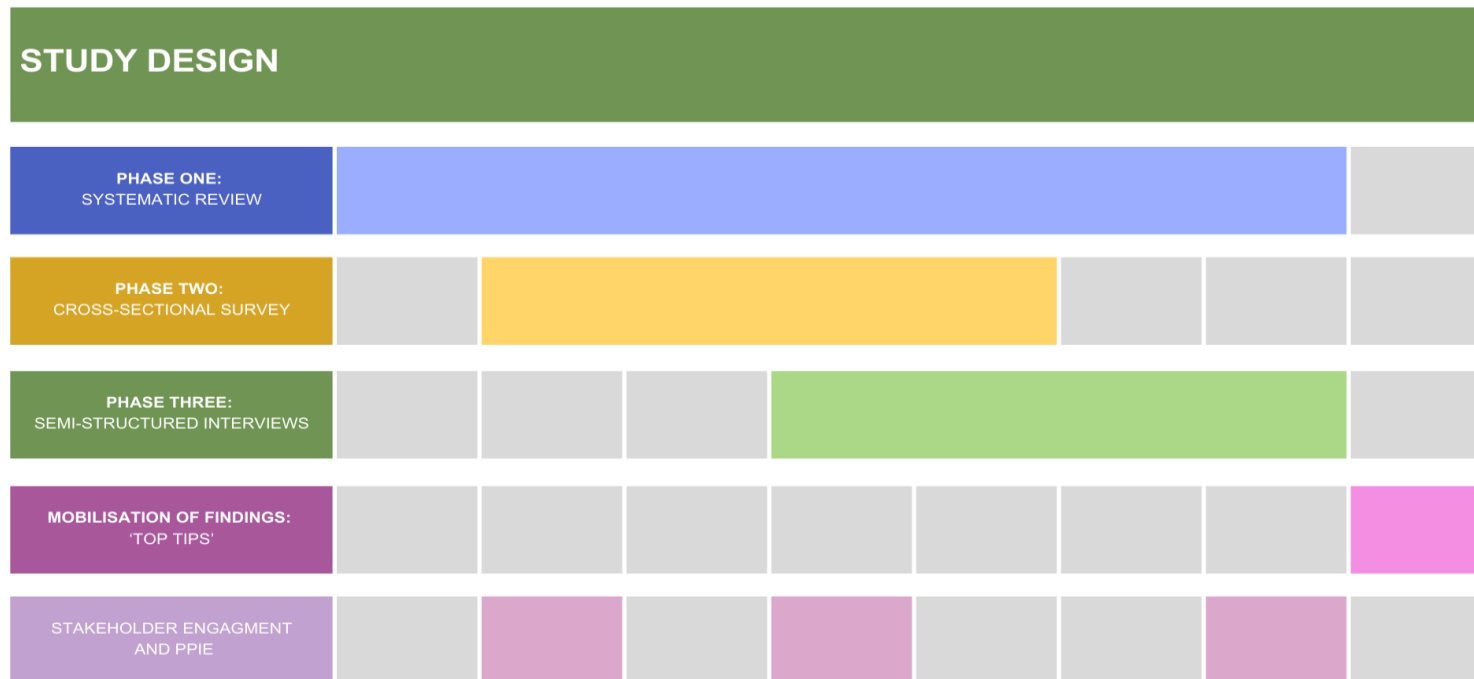


Figure 13: Study design

### **4.3 Philosophical, theoretical and methodological considerations**

#### **4.3.1 Philosophical underpinnings**

The philosophical assumptions underpinning this study are dependent on the context and stance of the researcher themselves. Philosophical assumptions are general orientations about the world the researcher holds, described as a cluster of beliefs which dictate what should be studied, how the research should be conducted and how the results should be interpreted (Bryman, 2008; Creswell, 2009).

Lincoln & Guba (1985) define a paradigm, which contains the researcher's assumptions about the means by which research should be performed, i.e. methodology, in addition to the researcher's definition regarding reality and truth, i.e. ontology, and how the researcher comes to know this reality and truth, i.e. epistemology.

Philosophy thus drives the interrogative processes that generate research questions, methods and methodologies (Mills & Birks, 2014). Mills & Birks (2014) define a philosophy as '*a view of the world encompassing the questions and mechanisms for finding answers that inform that view*' (p.18). Philosophy is concerned with both ontology and epistemology and researchers select the research methodology which relate to these philosophical issues (Al-Ababneh, 2020).

The differences amongst research methodologies are dependent on a philosophical and theoretical view of research (Al-Ababneh, 2020; Bradshaw et al., 2017). Therefore, philosophy allows researchers to identify knowledge gaps upon which to base research and methods, creating the opportunity to interpret research through a lens (Mills & Birks,

2014). My reflexive journal has been kept throughout the duration of this research study to identify personal biases and philosophical standpoints in relation to the research methods used (Appendix 16).

#### **4.3.2 Philosophical paradigms**

Several paradigms exist as a result of a researcher's philosophical underpinning beliefs (Creswell, 2009; Morgan, 2007), positioned on a continuum between positivist and interpretivist theories. Positivism is quantitative by nature, taking realist and objectivist stance. Positivists claim there is one reality which can be validly and reliably measured and confirm knowledge and validate facts of a subject (Bryman, 2006; Johnson & Onwuegbuzie, 2004; Onwuegbuzie, 2002).

Whereas interpretivism, most commonly used in qualitative research takes an irrealist and subjectivist stance. Interpretivists focus on participants actions, experiences and perceptions (Bradshaw et al., 2017; Bryman, 2006) and reject the positivist ontological position that the world is deemed as an external, single, objective reality regardless of the researcher's perspective or outlook (Grey, 2014). Interpretivists argue that human beings are therefore able to attach meaning to events and shape their world based on their perceptions and experiences (Bradshaw et al., 2017; Gill et al., 2010).

Key differences between positivism and interpretivism are outlined in Table 10.

Table 10: Key differences between positivism and interpretivism (taken from Ramanathan, 2008)

	<b>Positivism</b>	<b>Interpretivism</b>
<i>The observer</i>	Must be independent	Is part of what is observed
<i>Human interests</i>	Should be irrelevant	Are the main drivers of science
<i>Explanations</i>	Must demonstrate causality	Aim to increase general understandings of the situation
<i>Research progresses through</i>	Hypotheses and deductions	Gather rich data from which ideas are induced
<i>Concepts</i>	Need to be operationalised so that they can be measured	Should incorporate stakeholder perspectives
<i>Unit of analysis</i>	Should be reduced to simplest terms	May include the complexity of 'whole' situations
<i>Generalisation through</i>	Statistical probability	Theoretical abstraction
<i>Sampling requires</i>	Large numbers selected randomly	Small number of cases chosen for specific reasons

However, the purist philosophies, which separate the social and scientific realms, do not always provide a complete holistic approach to answering real-life, complex research questions (Guba & Lincoln, 1994). Whilst

interpretivism facilitates the use of qualitative research to gather primary data with a high level of validity, an interpretivist approach has many drawbacks, such as bias of the researcher, lack of generalisability, impact of personal viewpoints and values, and a lack of reliability and representativeness (Bryman, 2006; Gill et al., 2010; Ramanathan, 2008). In addition, despite a positivist approach being systematic, quantifiable and replicable, this can be considered unrealistic in real-world clinical settings and posits a lack of empathy and consideration of subjective and individual experiences (Bryman, 2006; Gill et al., 2010; Ramanathan, 2008). Therefore, a pragmatic approach to answering this thesis question was employed.

#### **4.3.3 Pragmatism**

A pragmatic philosophical position was adopted for this study. Pragmatism is an epistemic foundation for the methodological pluralism found in complexity research and is not committed to a single system of philosophy or reality (Long et al., 2018; Weaver, 2018). Pragmatism can be defined as,

*'...not committed to any single system of philosophy and reality. Reality is actively created as individuals act in the world, and it is thus ever changing, based on human experience, and oriented toward solving practical problems' (Weaver, 2018, p. 1287)*

It is therefore concerned with a 'what works' approach, aiding flexibility to respond to the rapidly changing contexts of health services (Long et al., 2018; Maarouf, 2019; Weaver & Olsen, 2006) providing a theoretical lens



to solve practical problems, whilst recognising the influence of actions and situations in the 'real world' (Nowell, 2015).

Pragmatism offers an epistemological justification (via pragmatic values), and logic (via the use of combination of methods), for using multiple methods due to the need to best frame, address and provide answers to a multitude of research questions (Johnson et al., 2007). Unlike critical realism which assumes reality to have multiple layers, systems and processes which influence the observable and what can be experienced (Gorski, 2013), pragmatism often positions itself outside of the ontological continuum but does acknowledge epistemology, accepting that there are multiple methods through which knowledge can be gained, and focuses on connecting these to the methodology and the methods selected (Gillespie et al., 2024).

Pragmatism is concerned with the appropriateness of the research method in answering a research question, for example, the research question may employ an ethnographic study or a randomised controlled trial. A strength of this approach echoes flexibility in research designs and methods, best suited to address the research question, rather than specifically aligning a research method based on one's philosophical underpinning. However, a limitation is that pragmatism focuses heavily on outcomes and pragmatic values, using human experience as the primary motivator for understanding the world and building knowledge as opposed to conforming to absolute truths (Allemang et al., 2022; Hildebrand, 2011).

A pragmatic researcher is able to maintain both subjectivity in their own reflections and objectivity in data collection and analysis (Shannon-

Baker, 2016). This reflects the candidate's worldview, as I took an active role in the construction and development of the research questions and methods. With regards to the candidate's search for knowledge, it is necessary to not assume that the unique biases and assumptions underpinning this research and the priorities of oneself are applicable to others who do not have the same world view and understanding of reality. Therefore, my reflexive journal has been developed throughout the duration of the PhD to identify this (Appendix 16).

As a nurse myself, an appreciation of the value of both quantitative and qualitative approaches to answer complex questions is recognised within a pragmatic paradigm (Ritchie & Lewis, 2003). The need for 'methodological diversity' is a concept which aligns with the heterogeneous and complex arena which is healthcare research (Gillespie et al., 2024).

#### **4.3.4 Pragmatism and multimethods**

Pragmatism lends itself to methodological pluralism, in which a combination of different research methods are used to best answer a particular research question (Long et al., 2018). Often viewed as compatible with pragmatism, a mixed-method approach was initially conceptualised. A mixed-methods methodology is viewed as distinct with regards to the methods used and contribution to the overall research question (Creswell, 2015). Mixed-method approaches tend to integrate and triangulate data sets at different points during the research process, and not just at the concluding point (Johnson et al., 2007).

Thus, a multimethod approach was selected over a mixed-methods approach, because the aim was to create a conversation between data sets, to deepen knowledge, rather than triangulate knowledge (Bazeley, 2006; Bryman, 2006). This negates several issues associated with mixed-methods research, with regards to the stages of the research process where the 'mixing' occurs, the effectiveness of strategies for integration, equal status design and the need for a philosophical and methodological position (Johnson et al., 2007; Johnson & Onwuegbuzie, 2004).

Multimethod research refers to *'two or more studies using different methods, which address the same research question or different parts of the same research question or programmatic goal'* (Morse, 2015, p.210). It is suited to situations where one independent data source is insufficient to fulfil the aims of the research but rather uses a series of complementary methodologies, driven by a common overall research goal (Anguera et al., 2018; Creswell, 2009; Johnson & Onwuegbuzie, 2004). To gain the most from having a multimethod approach, research design tends to be complex and require the depth of both quantitative and qualitative exploration (Tariq & Woodman, 2013).

A multimethod approach is not restricted to use of particular methods but is open to a variety of possible methodological combinations (Hunter & Brewer, 2015). Variation is an important commitment within multimethods research, with regards to philosophical commitments, methodological designs and choice of methods (Greene, 2015; Johnson et al., 2007). Such an approach can use combinations of qualitative methods or quantitative methods, or a combination of both qualitative and quantitative methods, and therefore facilitates a 'what works', pragmatic approach to research, aiding flexibility and responsiveness to emerging

findings and real-world conditions (Bazeley, 2006; Gabbay & le May, 2010; Long et al., 2018).

Additional benefits and limitations to a multimethod approach are presented in Table 11.

Table 11: Benefits and limitations to a multimethods approach

Benefits	Limitations
Instils context to research	Synthesis of results is complex
Adds insights and understanding that may be missed using a single method	Time-consuming and resourceful
Creates a flexible approach to research questions	Need for researcher competence across a range of research methods
Able to use the strengths of one research method to overcome weaknesses of another to deepen knowledge	Potential for inequality between research methods
Corroboration of findings allows for a deeper and stronger evidence for conclusions	A lack of understanding exists as to how the way paradigms co-exists and integrate
Allows for a broader range of research questions and outcomes to be addressed	Underlying contradictions between paradigms exist
Research is practical in which the research is able to employ a variety of methods	
Can facilitate scholarly interaction and enrich the experiences of researchers	

(Taken from Angeura et al., 2018; Creswell, 2009; Creswell & Plano Clark, 2017; Maxwell, 2011; Shorten & Smith, 2015)

Morse et al. (2002) highlighted the need for the researcher to be responsive to the data and taking a proactive responsibility for rigor throughout the study to ensure methodological coherence is maintained. The need to be a *methodological connoisseur* was identified; an individual who is able to select the best techniques available to address the research question (Teddle & Tashakkori, 2010). This was identified at the early stages of the PhD, and therefore the required methodological training was undertaken (see Formal Research Training section).

The pragmatic approach taken meant that the boundaries were not static in the early stages, aiding flexibility and an emergent design deemed most appropriate to answer the research question and aims. Therefore, this allows one to focus on the methods best suited to answering the research aims and objectives, rather than conforming to ontological and epistemological ideals. The purpose of using multimethod research design was not to disregard traditional and purist paradigms, but to encompass one's worldviews, real-life complexity and the strengths and weaknesses of different research methods to address a particular area of research, which is considered methodologically and philosophically justifiable for this PhD study (Gabbay & le May, 2010; Johnson & Onwuegbuzie, 2004).

#### **4.3.5 The multimethod approach used in this thesis**

The multimethod approach to this thesis encompasses three distinct studies, each with a separate research question, use of separate sample, designed not to be reliant on one another but complement each other within a discussion of findings.

The multimethod approach to this thesis uses four distinct phases to structure the research project, known as 'multiphase combination timing' (Busetto et al., 2017; Johnson & Onwuegbuzie, 2004), 'Multiphase combination timing' can be described as multiple phases of individual studies over the duration of the research project (Johnson & Onwuegbuzie, 2004), combining both concurrent and sequential timings (Busetto et al., 2017). This has been employed to aid a multimethod approach, in which each research question is answered separately, prior to overall interpretation and discussion (Figure 14). A GANTT chart was also used to ensure the phases were appropriately timed (Appendix 17).

## MULTIPHASE MULTIMETHOD APPROACH

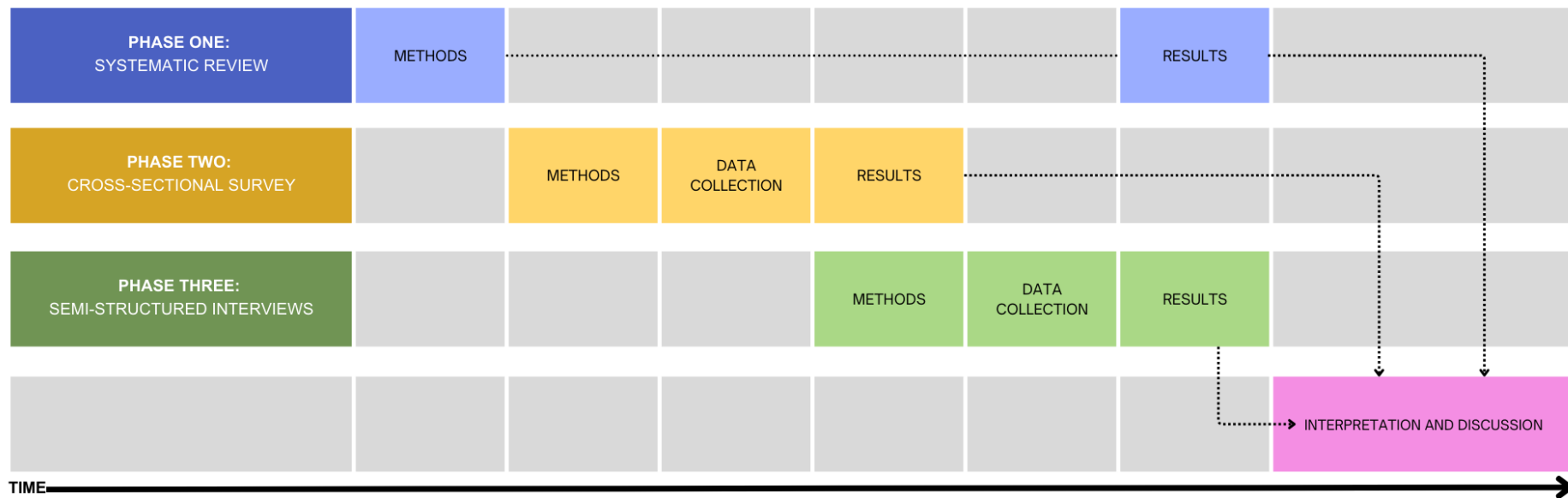


Figure 14: Multiphase multimethod approach



#### 4.3.6 Justification of research design

This multimethod approach encompassed a choice of research design. A research design is an overall plan or procedure, demonstrating the connections between the conceptual research problems with empirical research and the means to which the research question will be answered (Creswell & Plano Clarke, 2007; Grey, 2014). Robson (2002) highlighted the three possible forms of research design: exploratory, descriptive and explanatory. These classifications rely on the purpose of the research area (Robson, 2002).

Exploratory research methods aim to shed light on a topic which is poorly understood or not yet investigated, often answered by the collection of qualitative data through description and categorisation rather than quantification (Saunders et al., 2007; Sim and Wright, 2000). This employs a flexible and emergent research design, aiming to generate hypotheses rather than seeking to test them (Busetto et al., 2017; Busetto et al., 2020). Exploratory designs tend to use qualitative methods, seeking to better understand the nature and subjective experiences of participants, in order to develop a deeper understanding (*verstehen*) and a 'thick' description of real-life situations (Geertz, 1973), through a process of data collection which is iterative and cyclical in manner (Busetto et al., 2017; Busetto et al., 2020; Fossey et al., 2002; Pope et al., 2002).

Descriptive studies aim to provide a picture of a situation, person or event demonstrating the relationships between them as it naturally occurs (Blumburg et al., 2005). Although, descriptive studies are not able to explain why an event has occurred and is suitability of an unexplored

research area (Punch, 2005). On the other hand, explanatory research design seeks to explain and account for descriptive data, asking the 'why' and 'how' research questions (Grey, 2014). It builds on exploratory and descriptive research, aiming to identify the actual reasons for an occurring phenomenon.

As previously defined, the main objective of this research project is to explore the role, delivery and implementation of VGCs in UK primary care general practice. To achieve this, a number of research methods are drawn together using both quantitative and qualitative research methodologies. Thus, an exploratory research approach will enable the role, delivery and implementation of VGCs in general practice settings to be fully understood and may generate hypotheses for future descriptive and/or explanatory research in this area.

#### **4.3.7 Justification of quantitative methods**

Quantitative methods are best used to understand relationships between variables, through reliable and valid measures (Creswell, 2009). Quantitative methods were used to describe and quantify the uptake and use of VGCs, providing a set of descriptive statistics, in combination with qualitative open-ended questions.

The aim of the quantitative methods was not to establish inferences or statistical patterns from the dataset but categorise the data for further interpretation in a final descriptive analysis using the key themes identified from the qualitative analysis (Sandelowski et al., 2009; Sandelowski, 2014). A combination of both qualitative and quantitative

research can help strengthen each data set to gather a holistic picture surrounding the uptake and use of VGCs in primary care general practice.

#### **4.3.8 Justification of qualitative methods**

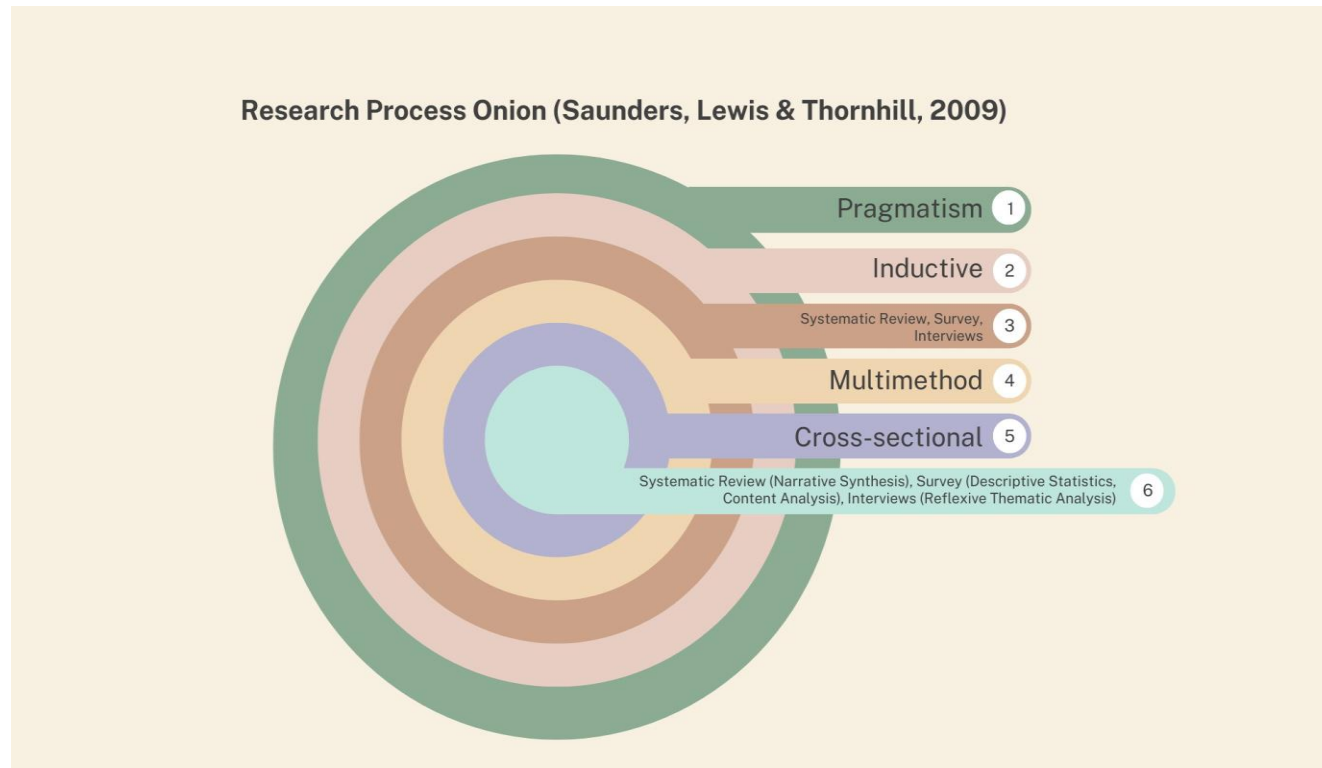
Qualitative methods are used to better understand the nature and subjective experiences of participants (Busetto et al., 2020; Fossey et al., 2002; Pope et al., 2002). These methods were used to better understand the experiences of HCPs using, delivering and implementing VGCs, through an iterative process of data collection and analysis to enable a rich and deeper understanding of the role of VGCs in UK general practice settings.

Qualitative methods were used to understand the experiences of HCPs through open-ended survey responses and semi-structured interviews (Busetto et al., 2020). A combination of qualitative methods helps to deepen an understanding of VGCs from the experiences and opinions of HCPs across general practice settings (Fossey et al., 2002).

#### **4.4 Research process onion**

The philosophical and methodological considerations described in this chapter can be illustrated through a 'research process onion' (Saunders et al., 2009). Saunders et al. (2009) explain the research process as an onion, which consists of multiple layers, with each layer leading to another. The first layer of the onion relates to the philosophy with regards to the nature and development of knowledge. The second layer determines the research approach which is either inductive or deductive. In the third layer, different researcher strategies are outlined to answer the research question. Research methods are demonstrated in layer four, including mono-method, mixed-method and multimethod. The fifth layer refers to the time, including cross-sectional and/or longitudinal. The centre of the onion is the core of the research which includes the data collection techniques and means of data analysis.

Figure 15 demonstrates the research process onion in relation to this thesis.

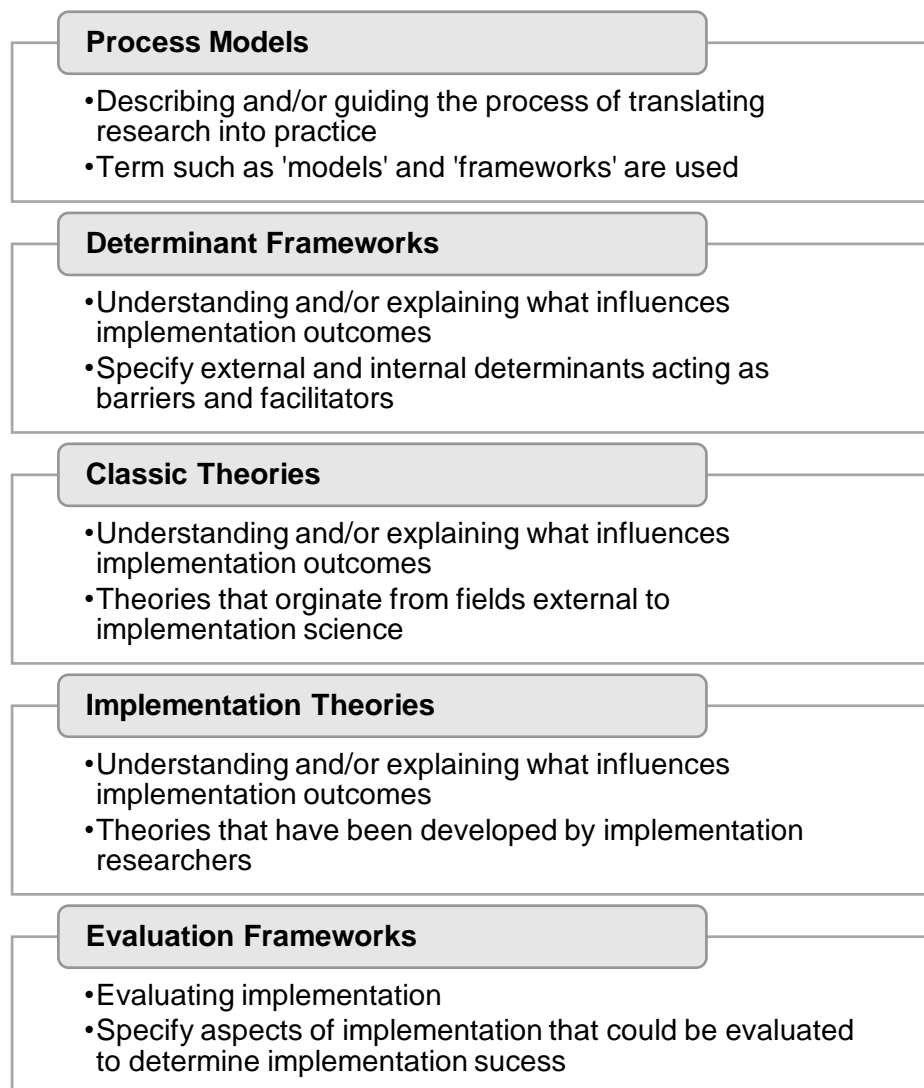


*Figure 15: Research process onion (Saunders et al., 2009)*

#### **4.5 Justification of theoretical lens**

This thesis has presented an overview of the philosophical position and methodology adopted. The focus on the role, delivery and implementation of VGCs in UK general practice settings has led to an importance placed on the implementation of complex interventions, in which a number of implementation theories, models and frameworks have been considered as a lens of interpretation within this thesis. Therefore, theories will be pragmatically employed to best discuss research findings, contextualising results in the context of implementation theory and knowledge mobilisation (Bauer et al., 2015; Birken et al., 2017; Braithwaite et al., 2018; Davies et al., 2015; Haynes & Loblay, 2024). Lynch et al. (2018) advocate for pragmatic application of theoretical approaches, to increase not only the confidence of clinicians and HCPs to present theory-informed implementation projects but to contribute to addressing the evidence-to-practice gap.

Nilsen (2015) attempts to deconstruct this complexity by providing a taxonomy of the vast number of implementation theories, models, and frameworks, due to the difficulty in applying these approaches in practice (Figure 16).



*Figure 16: Nilsen's (2015) taxonomy of implementation theories, models and frameworks*

Nilsen (2015) outlined that the choice of theoretical framework, model, or theory is dependent on the aims of the research in either i) describing and/or guiding the process of translating research into practice; ii) understanding and/or explaining what influences implementation outcomes; or iii) evaluating implementation. In relation to this thesis, implementation theories and determinant frameworks will be considered as both approaches seek to understand and/or explain what influences implementation outcomes (Nilsen, 2015). In addition, determinant

frameworks help to identify the barriers and facilitators associated with the implementation of complex interventions (Nilsen, 2015). Kennedy (2014) argues the value in combining multiple theoretical approaches to gain a holistic understanding of the role, delivery and implementation of VGCs in UK general practice settings. Therefore, it may be appropriate to draw upon multiple approaches in interpretation of study results to help explore research findings and aid applicability to real-life contexts (Schroeder et al., 2022).

Three approaches have been identified in understanding and/or explaining the role, delivery and implementation of VGCs in UK general practice settings, including i) Normalisation Process Theory [NPT] (May & Finch, 2009; May et al., 2018); ii) i-PARIHS (Harvey & Kitson, 2016); and iii) ACAP (Cohen & Levinthal, 1989). These approaches will be pragmatically drawn upon as a theoretical lens to interpret research findings, in light of implementation theory and discussed where relevant.

#### **4.6 Virtual considerations**

Due to the uncertain nature of the length and intensity of the pandemic when commencing this PhD in November 2020, a decision to use virtual methods of data collection was made. It is therefore important to consider the limitations and support for multimethods research and their transferability to the online space.

According to the ONS (ONS, 2020), at the start of the COVID-19 pandemic, 96% of households in Great Britain had access to the internet, demonstrating a 57% increase from data collected in 2006 (ONS, 2020).



The UK population is thus increasingly digitally literate, defined as *'being able to make use of technologies to participate in and contribute to modern, social, cultural, political and economic life'* (British Computer Society, 2014), as a way to connect with others and to access and share information (ONS, 2019).

Prior to the impact of the COVID-19 pandemic, whilst not new, virtual methods for research had not been widely used (Archibald et al., 2019). Traditional methods of research, such as face-to-face interviewing, in-person focus group discussions and paper-copy surveys were easily conducted (Torrentira, 2020). However, the impact of the pandemic meant that these traditional methods of research became unfeasible due to isolation measures (Dodds & Hess, 2021; Khodyakov et al., 2017; Sy et al., 2020).

Research conducted by Vindrola-Padros et al. (2020), during the COVID-19 pandemic, demonstrated the feasibility of remote data collection models, using social media and telephone interviews, echoing a similar quality of data in comparison to traditional models of research. With regards to online surveys, whilst the process of distributing a survey, in-person, is desirable to enhance response rate and to target particular respondents, Sy et al. (2020) argue that online surveys are a very feasible adaption to achieved remote forms of data collection. Developments in technology have enhanced the workability of online surveys with the use of the QR code, which creates a link to the survey for anyone with a smartphone (Torrentina, 2020). This was used as a means to enhance accessibility and improve repsonse rate in online cross-sectional survey methods. In addition, even though traditionlly qualitative research take longer to conduct and analyse, there is a growing need for quicker

methods which can still generate meaningful results to implement into practice (Vindrola-Padros et al., 2020). Furthermore, the online nature of remote data collection methods enhances the flexibility of research, in terms of time of space, capturing a wider demographic of individuals from various economic, social and professional backgrounds (Horrell et al., 2015; Rubinger et al., 2020; Tončinić et al., 2020).

However, key challenges associated with remote data collection methods include gaining diverse experiences (qualitative research), producing reliable, valid and representative data (quantitative research) and contacting groups that were once considered 'harder to reach' populations (Hensen et al., 2021; Tran et al., 2015). Sy et al. (2020) argue the importance of the need to maintain reflexivity, translating the same level of rigor and quality to virtual methods of research. Maintaining reflexivity is demonstrated by ensuring the data is robust, as well as being authentic and transparent in describing the online research methods used and ethical considerations surrounding data protection and storage (Sy et al., 2020). Another challenge is the risk of excluding those with poor digital literacy and therefore the need to make online research methods as inclusive as possible is of great importance (Gillman, 2020; Hensen et al., 2021; Rubinger et al., 2020). Studies suggest that virtual interviews were preferable, in comparison to face-to-face interviews, to access groups that were once considered 'hard to research', in terms of reduced cost and perceived anonymity (Drabble et al., 2016; Hanks et al., 2019; Hensen et al., 2021). However, with the regards to the researcher, it is considered more difficult to build a rapport with participants due to the inability to perceive informal, non-verbal communication (Kuek & Hakkennes, 2020; Thunberg & Arnell, 2022). Human factors also play a

significant element in the efficiency of videoconferencing technology, such as the inability to concentrate, multiple means of distraction, and interruption due to noise in a work-from-home environment (Oeppen et al., 2020).

Despite this, whilst remote research methods have their challenges, including digital exclusion and a lack of interpersonal connection, Torrentira (2020) highlighted the viability of both online surveys and virtual interviews as an alternative to traditional methods of data collection, in order to sustain honesty, reliability and academic integrity during and after the COVID-19 pandemic, to protect both the research and researchers themselves.

#### **4.7 Reflexivity**

An individual account of reflexivity is provided in each study (Chapter 3; Chapter 5; Chapter 6; Chapter 7; Chapter 8). In particular, my interview reflexive diary and positionality statement were iteratively updated throughout the interview study (Appendix 18; Appendix 19). The purpose of my reflexive diary is to reflect on previous interviews and interviewing experiences, identifying areas of interest to inform the thesis and future work (Ide & Beddoe, 2023; Peddle, 2022). My reflexive diary also helped to reflect on personal experiences of research whilst undertaking this research training. Undertaking an undergraduate degree in Religious Studies, with an importance placed on philosophy, raises the importance of explicitly stating my position at the beginning of the research (Baldwin, 2014; Holden & Lynch, 2004).

In addition, this thesis has been structured such that the methods chapters (Chapter 5; Chapter 7) report the process taken and the results chapters (Chapter 6; Chapter 8) reflect study findings. This helped to present a clear distinction between the approach taken and the results obtained.

A GANTT chart was also closely followed to ensure the PhD was appropriately managed and timed (Appendix 17). This also ensured that a multimethod design was appropriately conducted (Figure 14). Furthermore, the ways in which the COVID-19 pandemic impacted the thesis meant that virtual considerations were of great significance. Having conducted these studies without social distancing restrictions and the need for online data collection may have produced a different set of results and/or larger sample sizes.

#### **4.8 Chapter summary**

This chapter has provided an overview of the philosophical, theoretical and methodological considerations for this thesis, influencing the choice of research methods used to best address the role, delivery and implementation of VGCs across UK general practice settings. The subsequent chapter provides the cross-sectional survey methods used to address the uptake and use of VGCs by HCPs in across general practice.

# **Chapter 5: Cross-sectional survey methods**

---

## **Chapter 5: Cross-sectional survey methods**

---

### **5.1 Introduction**

The previous chapter has identified the need for further exploration of the role, delivery and implementation of VGCs across UK general practice settings, outlining the philosophical, theoretical and methodological approach taken. To answer objective 2, this chapter uses a cross-sectional survey to best address the uptake and use of VGCs by HCPs in general practice.

The chapter begins with an outline of the types of research methods considered for this study, followed by an overview of the chosen method used. Next, the chapter presents the chosen methods, including the study placement, sampling and recruitment, data collection, analysis techniques and data reporting. Stakeholder involvement is addressed within the study methods. The last parts of the chapter present reflexivity and ethical considerations in relation to the research method used. The chapter concludes with a chapter summary.

### **5.2 Methods**

#### **5.2.1 Cross-sectional studies**

Cross-sectional studies follow a transverse design, where a specific sample of participants are analysed over a specific point in time without any follow up, and therefore provide a 'snap-shot' of what is happening at a single point or period of time (Peat, 2002). Unlike case-control studies, where participants are selected based on their outcome status,

and cohort studies, where participants are selected based on their exposure status, participants in a cross-sectional study are chosen from an available population of potential relevance to the study question (Wang & Cheng, 2020). Cross-sectional studies are able to collect information about a disease or intervention in a sample population in terms of prevalence. Primarily, cross-sectional studies are used to understand how many people have experienced an intervention at a particular point in time, and are used to describe a population in terms of its characteristics or experience of an event or health state (Wang & Cheng, 2020). Cross-sectional studies do not aim to identify incidence or make casual inferences between participants or data sets, but rather determine the prevalence of an intervention (Maier et al., 2023).

A cross-sectional survey was favoured over a longitudinal study, as it was agreed that due to the ad-hoc nature and novelty of VGCs in UK general practices, little is known about how many VGCs are running or what they look like. Therefore, a cross-sectional study will allow for the collection of descriptive data about the VGC landscape, providing a baseline to develop further work in this area (Wang & Cheng, 2020).

Cross-sectional studies can either be classified as descriptive or analytical, dependent on whether the outcome variable is assessed for associations with exposures. Descriptive cross-sectional studies aim to characterise the prevalence of a disease(s)/intervention(s) in a specific population, whereas, in analytical cross-sectional studies, researchers collect data for both outcomes and exposures with the aim to compare the outcomes between participants who have been exposed or unexposed (Setia, 2016; Wang & Cheng, 2020).

A cross-sectional study was therefore chosen to best address the research question, providing a 'snapshot' of participants experiences of VGCs to demonstrate uptake and use of the approach. The nature of cross-sectional studies means this method is relatively quick and inexpensive to conduct (Check & Schutt, 2012; Peat, 2002). There are seldom ethical difficulties as participants are not deliberately exposed or treated.

## **5.2.2 Considerations with cross-sectional studies**

### **5.2.2.1 Data collection methods**

There are multiple ways in which data can be collected from a chosen population. Cross-sectional studies tend to use either survey questionnaires or structured interviews, which can be considered to be equally valuable, despite demonstrating a range of strengths and limitations (Polit et al., 2001; Ponto, 2015). Both cross-sectional surveys and interviews pose initial research questions and aim to describe a population of interest or compare sub-groups of that population (Cummings, 2017).

Most predominantly, cross-sectional studies using surveys can be conducted in a wide range of settings and involve different questionnaire methods, such as paper and pencil, electronic, telephone or face-to-face (Ponto et al., 2010). This also incorporates a number of different approaches which include self-administration modes, interviews, computer assisted methods and questionnaire programmes (Bowling, 2005; Ponto et al., 2010). Using multiple methods of survey administration can help to ensure greater sample coverage and reduce



coverage error (Dillman et al., 2014). Whilst structured interviews can be conducted via telephone, videocall or face-to-face, this cannot extend to a larger sample size, which a questionnaire would encompass (Polit et al., 2001; Silman & Macfarlane, 2002). Cross-sectional interviews use a structured interview technique to gather information about a particular population or intervention at a specific point in time, using an interviewer to ask questions pertinent to the research question (Cummings, 2017).

However, since the pandemic, surveys often have a lower response rate. A meta-analysis by Wu et al. (2022) found that sending an online survey to a larger population did not generate a higher response rate, yet sending questionnaires to a refined and clearly defined population aided the online survey response rate positively. However, the online nature of the survey often represents the higher-income, urban populations with higher digital literacy and access to smartphone and/or the internet (Hensen et al, 2021; Roy et al., 2020).

#### **5.2.2.2 Study subject considerations**

Sampling is an important consideration and an essential component in cross-sectional study designs, with strategies aiming to obtain a sufficient sample size which is representative of the overall population (Fujimori et al., 2014; Ponto, 2015). Using a diverse range of recruitment strategies can increase the representativeness of the sample obtained (Taherdoost, 2016). Both probability (random) and non-probability (purposive and snowball) sampling techniques were used for this study to ensure accuracy and rigor, as well as capturing an appropriate sample size for the study (Roy et al., 2020).

Another consideration was bias, which can be defined as *'any systematic error in a study that results in an incorrect estimate of the true effect of an exposure on the outcome of interest'* (Wang & Cheng, 2020, p.568). Cross-sectional studies are prone to two main types of bias: selection bias and information bias. Selection bias can be defined as when the chosen sample is no longer representative of the overall population (Kesmodel, 2018). This can be introduced into a study if the eligibility criteria restricts or selects certain groups of participants and can lead to prevalence-incidence bias (Kesmodel, 2018). A common form of selection bias is also non-response bias, which occurs when the characteristics from non-responders differ from those who have responded (Sedgwick, 2014; Wang & Cheng, 2020).

Information bias can also occur within cross-sectional studies in which key study variables are measured, collected or interpreted inaccurately (Sedgwick, 2015; Wang & Cheng, 2020). Detection bias is a form of information bias in which there is systematic differences between groups in how outcomes are determined. Recall bias is also a type of information bias, referring to the knowledge of participants recalling information on exposure differentially depending on their outcome status or recall of information regarding their outcomes dependent on their exposure (Althubaiti, 2016; Sedgwick, 2012; Wang & Kattan, 2020). Yet this is more common in case-control studies or retrospective cohort study designs (Althubaiti, 2016).

### 5.2.2.3 Statistical considerations

Confounding can occur within cross-sectional studies when a variable is associated with the exposure and influences the outcome. A confounder can be identified on the basis of three conditions. The variable must (i) be associated with the exposure being investigated; (ii) be associated with the outcome being studied; and (iii) not be in the causal pathway between exposure and outcome. Based on these conditions, a confounding variable can result in a distortion of results between the exposure and outcome (Skelly et al., 2012).

Restriction is one statistical technique used to prevent or control for confounding and occurs when researchers limit participation in the study to individuals who are similar with respect to the confounders (Kahlert et al., 2017; Pourhoseingholi et al., 2012). However, restricting the sample to participants with similar confounders risks introducing bias. Therefore, stratification is a potential way to manage the effects of confounding variables, by dividing the population into smaller, homogenous group where the confounding factor is consistent (Kahlert et al., 2017; Pourhoseingholi et al., 2012). Confounders are then accounted for in the analysis by analysing the exposure and the outcome according to each grouping (Kahlert et al., 2017; Pourhoseingholi et al., 2012).

### 5.2.3 Survey questionnaires

Cross-sectional studies can be conducted using survey questionnaires. A survey questionnaire can be defined as *'the collection of information from a sample of individuals through their responses to questions'* (Check

& Schutt, 2012, p.160). This methodological approach to research enables variation in the recruitment of participants, collection of data and methods of instrumentation.

Surveys can generate quantitative research (e.g. numerically rated items, interval/ratio data level sets), qualitative data (e.g. through the use of open-ended questions) or can take a mixed-methods approach (Ponto, 2015). Due to this variety of approaches, survey questionnaires are now more commonly used within health research epidemiology (Safdar et al., 2016). However, survey research has historically included large population-based data collection, with the primary purpose of obtaining information describing a large sample of individuals of interest (Ponto, 2015).

In more recent times, survey questionnaires have developed as a rigorous method used to conduct research, with strategies detailing the inclusion of participants (representative sample), what and how to distribute (survey method), when to commence the study and account for non-responders, reducing non-response error, in order to ensure a high-quality research process and outcomes (Ponto, 2015). Therefore, the term 'survey' can incorporate a range of research aims, sampling, recruitment strategies, data collection methods and means of survey administration (Ponto, 2015).

#### **5.2.4 Justification of choice of study methods**

A cross-sectional survey was chosen to best address this research question. In consideration of other types of study design, it was felt that a

cross-sectional approach was most appropriate in the time-scale of this research study. Using a survey to conduct this cross-sectional study enabled the collection of both quantitative and qualitative data sets, across a wide geographical landscape. Cross-sectional surveys also have the advantage of being descriptive in nature, which is best suited to explore the research aims and objectives.

### **5.3 Overview of method**

To address objective 2, a cross-sectional survey was conducted in order to identify current uptake and uses of VGCs in primary care general practice. More specifically, due to the novelty of VGCs amongst UK primary care general practices, there is a need to demonstrate the conditions VGCs are being used for, the demographics surrounding uptake and use, for example, location of practices, practice size, patient population etc, and design of VGC models. This demonstration will help to develop a greater understanding of the uptake and use of VGCs, aiding a more coherent delivery and implementation of the approach.

The outcomes from this study are:

- A greater understanding of the use of VGCs in primary care
- Clarity on demographics affecting uptake of this approach
- Identification of the barriers and enablers to implementation and delivery within general practice teams
- Development of a more-robust evidence base for the delivery of VGCs in primary care general practice.

The following sections include the study placement, sampling and recruitment, data collection, data analysis and data reporting for the cross-sectional survey.

## **5.4 Study placement**

The cross-sectional survey is situated in phase two of the research. As the nature of the PhD takes a multimethods methodological design, the cross-sectional survey has intrinsic aims and objectives to address and has a unique contribution to the overall thesis question, complimentary to both study one and study three.

## **5.5 Sampling and recruitment**

### **5.5.1 Sampling technique**

Three sampling methods were used to identify a broad range of individuals and practices using VGCs e.g. varying geographical locations and professions.

Purposive sampling was conducted by identifying individuals who have been involved in routine VGCs and meet the eligibility requirements for the study. Purposive sampling was used to ensure that the collection of data was relevant and pertinent to those using VGCs in general practice. In addition, purposive sampling aims to ensure diversity related to the key factors considered to influence experience (Hensen et al., 2021). Random sampling was also used as technique to identify potential participants, facilitated through the use of social media platforms, with the

ability to reach a large audience using virtual networking (Wang & Cheng, 2020). Further to this, a snowball sampling technique was used to identify further potential participants from this initial professional network, in which existing study participants identify other participants amongst their colleagues (Wang & Cheng, 2020). Snowball sampling can also be effective in achieving a diverse range of participants (Kirchherr & Charles, 2018; Shaghahi et al., 2011) and is advocated for recruitment of online surveys (Roy et al., 2020).

### **5.5.2 Sample size**

Sampling continued simultaneously with data collection until a sufficient sample size and 'data saturation' was achieved, in which the degree in which new data repeats what was expressed previously in the data (Hennink & Kaiser, 2022; Saunders et al., 2018; Vasileiou et al., 2017).

A numerator/denominator was not calculated in this instance, due to the method of recruitment, as there is value in analysing a limited number of responses due to the paucity of research evidence on VGCs. To increase survey completion, the questionnaire was designed to be short, lasting no longer than 30 minutes (Dabalen et al., 2016).

### **5.5.3 Study population**

The inclusion criteria for this study included HCPs and general practice staff (inclusive of GPs, advanced nurse practitioners [ANPs], GPNs, HCAs, AHPs, first contact practitioners [FCPs], clinical pharmacists, receptionists and practice managers) situated within general practice

using or have previously used VGCs. Any of the above disciplines who are not working in primary care general practice were deemed ineligible.

A decision was made to include only participants who have been involved or have delivered VGCs in primary care, due to the small prevalence of usage across the UK. It was anticipated that there would have been a larger number of participants who had not used VGCs, which would not reflect the aims of the research. This ensured there was a distinction between those who are currently using or have previously used to capture a larger variety of participants within the remit of the eligibility criteria.

#### **5.5.4 Recruitment**

Participants were recruited from professional networks and social media. Potential participants were purposively sampled from a list of practices within the UK who have been trained in VGCs by the leading VGC provider, *ELC Works* (2024a), and can be accessed in the public domain through the *FutureNHS* platform (FutureNHS, n.d).

Eligible participants who were contacted via email were sent a study information pack from the research team, containing a letter of invitation, a recruitment advert and a study information sheet outlining participant involvement. The link or QR code to access the survey was provided in the invitation letter (Appendix 20), as well as a participant information sheet (Appendix 20) and a recruitment advert (Appendix 21). Participants were able to deem themselves eligible for the study considering the information provided and had the opportunity to ask the research team further questions before completion of the survey. Consent was inbuilt



into the beginning of the survey and without participant consent, the survey was unable to be completed. If there was no response after two weeks since the initial invite, a reminder was sent out. No further attempts to contact participants were made after this second reminder was sent.

Participants were also recruited through professional groups on Twitter and Facebook, including Keele University Impact Accelerator Unit [IAU] and Keele University School of Nursing and Midwifery. Posts included a recruitment advert and the use of hashtags and text to appeal to a diverse range of participants (Appendix 21). Hashtags were used to connect with people with similar interests (Pizzuti et al., 2020) and relevant stakeholder groups were tagged such as Redmoor Health (@RedmoorHealth), ELC Works (@ELCworks), Keele University School of Medicine (@SoM\_Research), Keele University School of Nursing and Midwifery (@NandM\_Keele) and Keele University IAU (@KeeleIAU). These participants were able to include themselves in the study if they met the requirements of the eligibility criteria (Johnson, 2014).

Potential participants recruited through social media platforms were provided a live link and QR code to access the survey, in the form of a 'tweet' or 'post' (Appendix 21). A recruitment advert (Appendix 21) and a participant information sheet (Appendix 20) were also attached alongside this. Participants were able to deem themselves eligible for the study, based on the eligibility criteria described in the participant information sheet.

Participants must have been delivering or have been involved in VGCs to be eligible for the study.

The recruitment process for participation in the cross-sectional survey is shown in Figure 17.

Examples of recruitment advertisements can be found in Appendix 21.

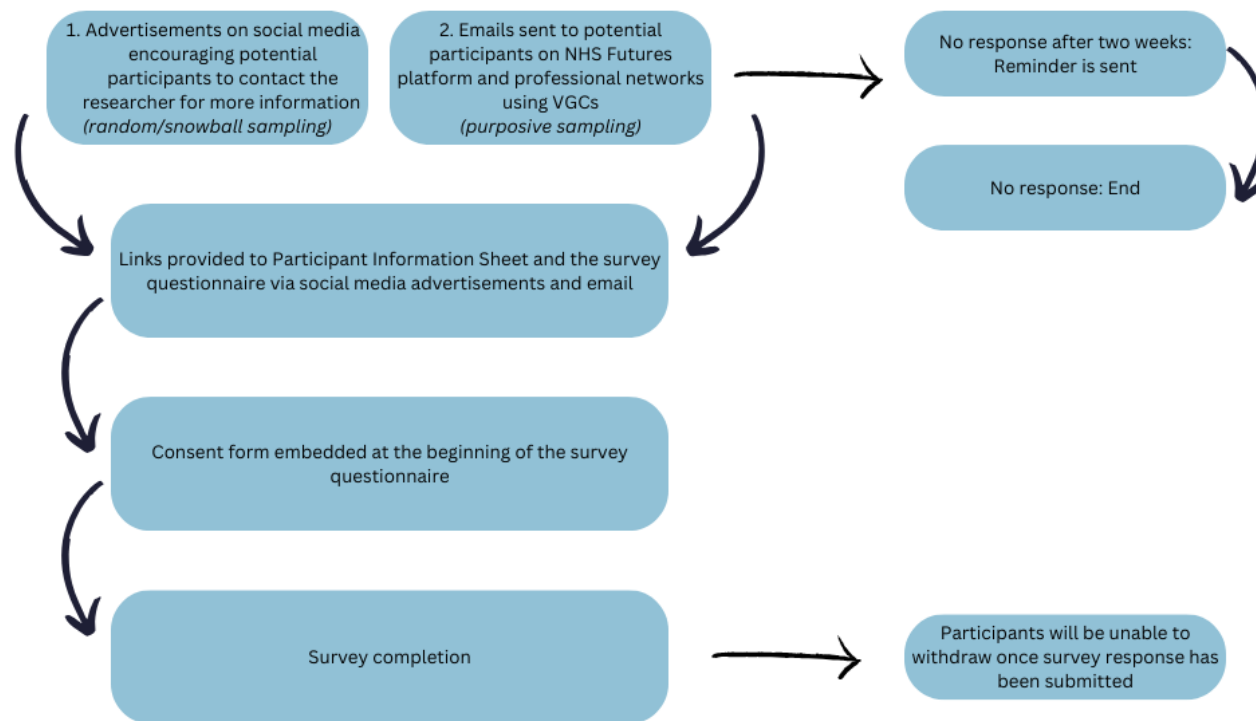


Figure 17: Recruitment process for cross-sectional survey study

### **5.5.5 Consent**

Informed consent was obtained from all participants prior to data collection. A participant information sheet and invitation letter were sent out prior to the survey. Consent from participants was obtained through a question within Microsoft Forms, embedded at the beginning of the survey questionnaire (Appendix 22). This confirmed that the participant had read the participant information sheet, including the rights around withdrawal, confidentiality, storage of information, anonymity and use of participant quotations, as well as providing the opportunity to ask the researcher any questions. Participants would not be able to complete the survey if consent was not obtained.

## **5.6 Data collection**

### **5.6.1 Survey questionnaire development**

A virtual stakeholder advisory group [SAG] was held to inform the components of the survey questionnaire. In general, the aims of this SAG were to, i) obtain opinions and insights from key stakeholders pertinent to general practice regarding VGCs; and ii) inform this stage of the research by including stakeholders in the development of research methods used (Appendix 23; Appendix 24).

Using a SAG to inform the development of the survey questionnaire helped to identify insightful information on how stakeholders prioritise interventions in relation to their own practice (Boaz et al., 2018; Esmail et al., 2015; Morton et al., 2017). The group dynamic of the meeting helped to obtain consensus

and debate surrounding ideas which required further consideration throughout the course of the thesis.

PPIE involvement in the SAG is reported in the GRIPP2 checklist (Staniszewska et al., 2017) in Appendix 25.

Further details of the SAG meeting methods are included in Appendix 26.

Four key discussion points were identified for consideration in the cross-sectional survey from this SAG meeting, including: Operationalisation of VGCs; Facilitation of the approach; Practicalities regarding implementation, and Sustainability of use (Table 12).

Table 12: Stakeholder discussion points for cross-sectional survey study

Key discussion points	
Operationalisation of VGCs	<u>Definition of VGCs</u> <i>Use of terms such as ‘video group clinics’, ‘shared medical appointments’, ‘group meetings’, but used inconsistently</i>
	<u>Scope of the approach e.g. health condition</u> <i>Use of VGCs for educational purposes, to perform LTC reviews or to provide information</i> <i>Conditions managed using VGCs e.g. diabetes, asthma etc.</i> <i>Learning disabilities and cancer care were viewed as not suitable for VGCs</i>
	<u>Platforms</u> <i>Microsoft Teams and Zoom were reported as the most common virtual platforms for VGCs</i> <i>Closed Facebook groups and live webinars were also reported</i>
	<u>Holistic or fragmented care?</u> <i>Importance of not generalising patients to ‘fit’ into a particular VGC model</i>

Key discussion points	
Facilitation of the approach	<u>Roles associated with VGCs</u> <i>Roles involves in VGCs are an extension of a previously established role e.g. receptionists</i> <i>Use of Public Health Collaboration volunteers which raises the question of the necessary skills needed to deliver VGCs</i>
	<u>Workload</u> <i>Work required in the initial stages is paramount</i> <i>Need for adequate funding, staffing, time and training resources</i> <i>Forced to used virtual consultations</i>
	<u>Training requirements</u> <i>Inconsistencies with training with some stakeholders involved in formal training and others needing to learn on the job</i>
Practicalities regarding implementation	<u>Digital literacy</u> <i>Lack of digital literacy in older patient populations</i> <i>Training aimed at those unfamiliar with digital technology</i>

Key discussion points	
	<u>Demographics of patients</u> <i>Patients described as being younger and more familiar with technology</i> <i>Patient populations needing LTC management tend to be older</i> <i>Recruitment of patients is slow</i>
	<u>Alternative or replacement consultation model?</u> <i>VGCs should only be provided as an alternative consultation model rather than a replacement of pre-existing care</i> <i>Concerns that care will become fragmented if they were to replace LTC reviews</i>
	<u>Information governance/confidentiality/safeguarding</u> <i>Viewed as a barrier to delivery due to a lack of control over information</i> <i>Anonymity vs. virtual presence</i>
<b>Sustainability of use</b>	<u>Process vs. outcome measures</u> <i>Success of VGCs is measured by patient and clinician experience rather than published research data</i>



Key discussion points	
	<p><u>QOF</u></p> <p><i>VGCs are not subject to QOF at the time of the pandemic, but after the pandemic this was reinstated</i></p> <p><i>Questions regarding VGCs that not used to manage LTC conditions</i></p>
	<p><u>Sustainability of the approach</u></p> <p><i>Forced to adopt a virtual consultation model</i></p> <p><i>'...this may be the best time for the NHS to look at video group consultations, but is it the right time for the patient now?'</i></p>

The survey questionnaire was further reviewed by the supervisory team and refined to ensure the questions reflected the aims and objectives of the study. To ensure the questions were relevant not only to the research topic, but to the participants themselves, a bespoke research design was produced, tailoring questions dependent on the answers previously provided in the survey i.e. consideration of the professional roles the participants held.

The questionnaire, informed by the SAG discussion points, consisted of six broad areas (Figure 18).



*Figure 18: Components of the survey questionnaire*

The survey questionnaire can be found in Appendix 27.

### **5.6.2 Components of the survey questionnaire**

The cross-sectional survey was available to access for two months (November 2021 – January 2022). A mixture of open-ended and closed-ended questions were used to gather both demographic, quantitative and

qualitative data on the uptake and use of VGCs in primary care general practice.

The use of closed-ended questions, by use of multiple-choice questions, helps to generate a demographic data set. Demographic data encompasses a statistical view of a population such as age, gender, ethnicity, and is considered to be a form of quantitative data (Lovas, 2020). Yet, nominal data was collected with no numerical meaning, only to characterise the population. Multiple choice style questions were also chosen to categorise responses of individuals to provide a set of descriptive statistics for the uptake and use VGCs (Sandelowski et al., 2009). Questions with a free text response were used to allow for further elaboration of multiple-choice questions, if required.

Further, the use of open-ended, free text questions provided a qualitative data set. Questions were posed to gather views/opinions and real-life experiences of VGCs. This qualitative approach helped to gather ideas surrounding the enablers and barriers of the approach, as one of the aims of the survey, which may influence the uptake and use of VGCs in primary care general practice.

A consideration of emergent themes was taken throughout data collection to adapt to the diversity of participants accessed via snowball, random and purposive sampling. The variety of open-ended and closed-ended questions allowed participants to elaborate and explain responses, to enhance clarity and understanding. Caution was taken when devising questions to ensure they were value-free, neutral and were not leading, taking into consideration my 'pre-understanding', both in the planning and analysis process, to minimise any bias or influence (Elo et al., 2014).

## **5.7 Data analysis**

Data analysis was primarily conducted by myself [ES] and a proportion was checked by members of the supervisory team [AF, LS, GW-J] to confirm interpretations. All data was subject to the same level of analysis.

### **5.7.1 Descriptive statistics**

Demographic data and closed-ended questions were analysed by statistical description, aiming to generate a range of descriptive statistics in combination with themes generated through inductive content analysis. Descriptive statistics are *'the numerical procedures or graphical techniques used to organise and describe the characteristics or factors of a given sample'* (Fisher & Marshall, 2008). The form of descriptive statistics which is used to describe a variable is dependent on the level of measurement used (Fisher & Marshall, 2008). Data is nominal in nature, meaning there is no hierarchy between the categories, but categories are mutually exclusive (Fisher & Marshall, 2008).

From this data set, a set of descriptive statistics were produced (measure of central tendency mode, percentages, simple frequency distributions, percentage frequency distributions) and were combined in a final descriptive analysis using the key themes identified through content analysis. The generation of nominal data meant no inferences or statistical analyses between data sets were made, as the descriptive data serves to provide a context for the qualitative data regarding uptake and use of the approach.

A set of descriptive statistics were formed by importing the closed-ended questions from Microsoft Forms to Microsoft Excel. This allows for generation of graphs and charts to demonstrate the data sets graphically. A range of questions which were categorical in nature were presented in the form of bar charts or pie charts. Tables were used to illustrate percentage frequency distributions and simple frequency distributions to demonstrate the proportionality of responses in reference to a particular question.

### **5.7.2 Qualitative survey data**

Content analysis can be defined as *'a research method for making replicable and valid inferences from data to their context, with the purpose of providing knowledge, new insights, a representation of facts and a practical guide to action'* (Krippendorff, 2018, p.24). Content analysis is a systematic method to analyse qualitative data, by analysing manifest and descriptive content to create categories, as well as identifying latent and interpretative content, resulting in themes (Elo & Kyngäs, 2008; Graneheim et al., 2017; Lindgren et al., 2020) (Table 14). This approach to data analysis is versatile in analysing textual, visible, and audio data, and can be useful in interpreting substantial amounts of data (Stemler, 2016). The purpose of using content analysis was to reduce the volume of text collected, identify and group categories together, to count and quantify data, as a means to seek understanding of the data and draw realistic conclusions (Bengtsson, 2016; Polit & Beck, 2006; Polit & Beck, 2010).

### **5.7.3 Approaches to qualitative content analysis**

Hsieh & Shannon (2005) identify three approaches to qualitative content analysis: conventional, directed and summative (Table 13). All three approaches are used to interpret meaning from the data, yet differ in coding schemes, origins of codes and threats to trustworthiness (Hsieh & Shannon, 2005).

Table 13 describes three types of content analysis, with a brief description outlining each approach. A justification of the chosen approach is provided below.

Table 13: Major coding differences among three approaches to content analysis (taken from Hsieh & Shannon, 2005)

Type of content analysis	Study starts with	Timing of defining codes or keywords	Source of codes or keywords	Advantages	Disadvantages
<b>Conventional content analysis</b>	Observation <i>(the aim is to describe a phenomenon and usually appropriate when existing theory or literature on the topic is limited (Hsieh &amp; Shannon, 2005))</i>	Codes are defined during data analysis (inductive)	Codes are derived from the data (inductive)	<ul style="list-style-type: none"> <li>• Gaining direct information from participants without relying on pre-conceived categories or theory</li> </ul>	<ul style="list-style-type: none"> <li>• Inductive categorisation fails to acknowledge context</li> <li>• Can be easily confused with other qualitative methods i.e. grounded theory or thematic analysis</li> </ul>

Type of content analysis	Study starts with	Timing of defining codes or keywords	Source of codes or keywords	Advantages	Disadvantages
<b>Directed content analysis</b>	Theory <i>(used when an existing theory or prior research exists about a topic is incomplete and would benefit from further description (Hsieh &amp; Shannon, 2005))</i>	Codes are defined before and during data analysis	Codes are derived from theory or relevant research findings	<ul style="list-style-type: none"> <li>Existing theories or concepts can be supported</li> </ul>	<ul style="list-style-type: none"> <li>Researcher bias to support a particular theory or viewpoint</li> </ul>



Type of content analysis	Study starts with	Timing of defining codes or keywords	Source of codes or keywords	Advantages	Disadvantages
<b>Summative content analysis</b>	Keywords <i>(used when identifying and quantifying certain words or content in the text, with the goal of understanding the contextual use of the words or content (Hsieh &amp; Shannon, 2005))</i>	Keywords are identified before or during data analysis	Keywords are derived from interest of researchers or review of the literature	<ul style="list-style-type: none"> <li>Provides an insight to how words are used</li> </ul>	<ul style="list-style-type: none"> <li>Limited in identifying broader meanings in the data</li> </ul>

#### **5.7.4 Approach to analysis taken**

A coding sheet was devised primarily to conduct data analysis on the cross-sectional survey (Appendix 28). The questions were split between the open and closed-ended questions, whereby the closed-ended questions were subject to determining a set of descriptive statistics and the open-ended questions were analysed using content analysis (Elo & Kyngäs, 2008).

A conventional content analysis of the open-ended answers was conducted. The analysis took an inductive (data driven) approach rather than using pre-conceived categories (Kondracki & Wellman, 2002). Due to the exploratory nature of the research question, an inductive analysis can allow themes to be identified from the content, without conforming to an analytic lens or theoretical position. This follows an inductive approach to reasoning, whereby empirical observation is used to develop general laws and theories about the world, and so the conclusion goes beyond what is contained in the premises (Bendassolli, 2013; Sim & Wright, 2000). An inductive approach allows for a flexible and emergent design, with mutual engagement and shaping of factors which can identify new ideas and concepts, as well as uncovering missing features (Cahan et al., 2019). Therefore, an inductive and conventional approach to data analysis was chosen due to the ability to deal with and explore new and unanswered questions, from which the knowledge from experience can be transferrable into real-life clinical practice.

A conventional approach is highly flexible and not aligned to any epistemological position (Krippendorff, 2018), aiding pragmatic application.

One approach to conventional content analysis was developed by Elo & Kyngäs (2008) and has been used largely in nursing research. This process broadly follows three main phases: preparation, organisation, and reporting (Elo & Kyngäs, 2008; Vaismoradi et al., 2013) and was used for data analysis of open-ended questions in the cross-sectional survey. This is demonstrated in Table 14.

Table 14: Phases of Content Analysis (Elo & Kyngäs, 2008; Vaismoradi et al., 2013)

Stages	Description	<i>Cross-sectional survey study</i>
<b>Stage one:</b>  <b>Preparation</b>	<ul style="list-style-type: none"> <li>• Selecting a unit of analysis</li> <li>• Identifying manifest and latent content</li> <li>• Making overall sense of the data</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Categories/Themes</i></li> <li>• <i>Manifest/Latent content</i></li> </ul>
<b>Stage two:</b>  <b>Organisation</b>	<ul style="list-style-type: none"> <li>• Determining where an inductive or deductive analysis will be conducted</li> <li>• Open coding</li> <li>• Grouping of codes</li> <li>• Categorisation</li> <li>• Abstraction</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Inductive content analysis</i></li> <li>• <i>Open coding by hand, supported with NVivo</i></li> <li>• <i>Frequency of codes to aid categorisation</i></li> <li>• <i>Sub-category/Generic Category/Main category</i></li> </ul>

Stages	Description	<i>Cross-sectional survey study</i>
Stage three: Reporting	<ul style="list-style-type: none"> <li>Reporting of results</li> </ul>	<ul style="list-style-type: none"> <li><i>Conceptual mapping and models to demonstrate analysis results</i></li> <li><i>Reflexivity to enhance the trustworthiness and validity of results</i></li> </ul>

The preparation phase involved selecting a unit of analysis (codes), identifying manifest and latent content, and making overall sense of the data (Elo & Kyngäs, 2008; Vaismoradi et al., 2013). This was followed by the organisation phase which determined whether an inductive or deductive analysis was conducted. For this analysis, an inductive approach was taken, demonstrated by open coding, grouping of codes, categorising and abstraction of manifest and latent content (Elo & Kyngäs, 2008; Vaismoradi et al., 2013). The last stage was concerned with the reporting of results. Conceptual mapping or models were used to demonstrate the results. A descriptive analysis was generated through the process of content analysis.

Data was imported from Microsoft Forms into Microsoft Excel. Coding was undertaken by hand, using Microsoft Excel to demonstrate the formation of content and themes. Open coding also was conducted virtually by hand, using Microsoft Word and the 'comment' function to enhance reliability and rigor. Following open coding virtually by hand and via the NVIVO platform, transcripts and coding analysis was compared and initial interpretations were discussed with the supervisory team.

The process of conducting content analysis consisted of listing all the possible codes included in the data set and was analysed per question. Each set of codes were then grouped according to frequency and were placed under headings which were worded the same or were similar in nature. Frequency of codes was used as a means of grouping to understand how different codes are linked and to help to organise codes into meaningful clusters (Patton, 2002). Frequency of codes were considered in relation to the context to ensure that frequent occurrence did not always indicate greater importance, due to an individual using the

same terminology in their response (Joffe & Yardley, 2004). Therefore, the frequency of codes was understood within a given context (Morgan, 1993).

Following this, the codes were involved in the formation of larger groupings, encompassing larger amount of codes. The next stage involved categorisation in which larger groupings were broken down into smaller, tangible categories. Categories were named using content-characteristic words and were used as key findings within the data. The final stage of abstraction was to provide a general definition of the research topic through generation of categories and was used to describe the content of the cross-sectional survey as part of the results chapter. This process results in the generation of sub-categories, generic categories and main categories (Elo & Kyngäs, 2008).

Themes and categories were revised throughout the analysis process and coding was checked by all members of the supervisory team [AF, LS, GW-J] to ensure correct application of the analysis process. A data coding sheet was used to ensure all stages of the analysis process were documented and relevant data was captured appropriately (Table 15).

*Table 15: Example of coding sheet*

<b>Initial codes</b>	<b>Grouping</b>	<b>Frequency</b>	<b>Categorisation</b>	<b>Abstraction</b>

Analysis was discussed periodically in supervisory meetings, initiating discussions surrounding the initial interpretations of the data set and arriving at a consensus on the main categories (Miles & Huberman, 1984; Miles & Huberman, 1994). The data was analysed iteratively with several stages of repeat coding and note-taking, to generate categories which were reflective of the data set. Miles & Huberman (1994) advocate for a process of data collection, data reduction, data presentation and data verification within qualitative research. Data was therefore verified amongst discussion in supervisory meetings.

#### **5.7.5 Qualitative content analysis vs. thematic analysis**

A qualitative content analysis (Elo & Kyngäs, 2008) was chosen as the most appropriate method of analysis, compared to thematic analysis (Braun & Clarke, 2006; Braun & Clarke, 2022b). Both content analysis and thematic analysis are both popular choices for data analysis, however, boundaries between both can be easily blurred. With regards to the aim and focus of data analysis, content analysis uses a descriptive approach in both coding of data and the interpretation of quantitative counts of codes, in which it is possible to analyse data qualitatively but at the same time, quantify the data (Gbrich, 2007; Vaismoradi et al., 2013). Thematic analysis is able to provide a detailed, purely qualitative and nuanced account of the data (Braun & Clarke, 2006; Braun & Clarke, 2022b). Therefore, qualitative content analysis aligns with the demographic data collected as a component of the cross-sectional survey, to not only quantify data but to produce content-related categories to enhance the meaning and interpretation of the data.



## **5.8 Data reporting**

The reporting of the cross-sectional survey data followed the guidelines set by 'The Strengthening and Reporting of Observational Studies in Epidemiology' [STROBE] Statement: guidelines for reporting observational studies (von Elm et al., 2007). The STROBE guidelines were designed for cohort studies, case-control studies and cross-sectional studies and provide a 22-item checklist for accurate and comprehensive data reporting (Appendix 29).

### **5.8.1 Trustworthiness of content analysis**

The trustworthiness of the content analysis process is enhanced by the ways in which the data is reported. Lincoln and Guba (1985) pose that trustworthiness of reported data is dependent on the credibility, dependability, transferability and confirmability of data (Lincoln & Guba, 1985).

#### **5.8.1.1 Credibility**

Credibility refers to the entire study process, establishing how the data and analysis are conducted and to ensure correct interpretation of the data set (Graneheim & Lundman, 2004). This was enhanced by ensuring discussion with the supervisory team and an expert research panel throughout the research process to challenge ideas and agree on commonalities (Graneheim & Lundman, 2004). The analysis process was clearly documented in sufficient detail to ensure a clear understanding of the process involved and its strengths and limitations. As the content

analysis process means the results are described contents of the categories, categories must reflect the content of the results (Dey, 1993). Credibility of these findings thus relates to how well the categories represent the data set (Graneheim & Lundman, 2004). Authentic citations were also used to increase the trustworthiness of the data set, to ensure readers are aware of the foundation of category formation (Sandelowski, 1993). However, it is ethically important that participants remain anonymous.

#### **5.8.1.2 Dependability**

Dependability refers to the stability of data over time (Leung, 2015). All key decisions and codes were documented throughout the research process and any alterations were accounted for. In order to increase the reliability of the data, the data coding sheet is provided in Appendix 28. This aids the need to describe the data in as much detail as possible (Polit & Beck, 2006; Polit & Beck, 2010). A clear description of the context, selection and characteristics of participants, data collection and process of analysis was also included (Graneheim & Lundman, 2004).

#### **5.8.1.3 Transferability**

Transferability refers to the generalisability of research findings to other settings or groups (Bengtsson, 2016). The representativeness of the sample will depend on how generalisable the results are. Whilst the sample size of this study was small, the data suggests a concurrence of categories across all responses. The transferability of these findings may

be synonymous with a larger sample size. The transferability of findings was also enhanced by providing a rich description of the data collection process and the use of multiple sampling strategies (Elo et al., 2014; Stalmeijer et al., 2024).

#### **5.8.1.4 Confirmability**

Confirmability is an issue of presentation, referring to the objectivity or neutrality of the data, ensuring the data is reflecting what it intended to measure (Bengtsson, 2016). Content analysis requires contextual knowledge, but this knowledge should not affect the research process or outcome. My reflexive journal has been kept throughout the PhD to identify this (Appendix 30). Discussion of the content analysis process and coding aided the confirmability of results, ensuring that the data set is reflective of what the researcher intended to measure (Tashakkori & Teddlie, 1998).

#### **5.9 Reflexivity**

My reflexive journal was kept throughout the duration of the study to account for any major changes or amendments made (Appendix 30). This transparent documentation allowed for reflection of key decisions, and my own standpoint when interpreting the data set. As part of the analysis process, a clear audit trail of concepts was maintained, and how each concept was categorised and developed. This was exemplified as a Microsoft Excel spreadsheet which had a number of tabs related to each question of the survey, as well as clear identification of quotes from all

participants (Appendix 28). Participants were clearly identified by providing a unique study number, throughout the whole of the study.

The completion of a MSc model in Research Methods in Health allowed me to gain a greater understanding of the research methods used and therefore provided an opportunity to consider key reflections on the study. I also presented the data to a number of professional and academic circles for consideration of the development of concepts and the ways in which these had been categorised and interpreted.

As this study was undertaken during the pandemic, the decision to use an online survey platform and online recruitment methods was essential. However, consideration of 'imposter participants' was important. A analysis by Ridge et al. (2023) affirmed the significant concerns around online recruitment and the authenticity of some potential participants. Ridge et al. (2023) clarify a number of indicators which may be suggestive of 'imposter participants', which were considered throughout the duration of the research project. Indicators included quick responses to social media recruitment advertisements and emails from multiple participants with the same configurations (Ridge et al., 2023).

## **5.10 Ethical considerations**

### **5.10.1 Approvals**

The cross-sectional survey was given a favourable approval by the Faculty of Medicine and Health Sciences Research Ethics Committee at Keele University (reference MH-210196) on 26<sup>th</sup> October 2021 (Appendix 31). No further ethical approval i.e. Health Research Authority [HRA]/NHS

ethics was needed for the cross-sectional survey, due to the nature of recruitment. Where the research involves NHS employees as participants as solely by virtue of their qualifications, experience or professional capacity, rather than in relation to their employment by a specific NHS organisation, HRA is not necessary (Appendix 32).

### **5.10.2 Consent and withdrawal**

The participant information sheet and consent form affirmed to participants that participation was completely voluntary. Whilst participation was voluntary, participants could not withdraw from the study once a response was submitted as all responses to the survey were anonymous and thus could not be identified. Participants were made aware of the inability to withdraw after a survey response has been submitted in the participant information sheet and in the in-built consent form. However, this was not deemed necessary.

## **5.11 Chapter summary**

This chapter has outlined the research methods considered to best address this research question, with the choice of research method described. The methods used to conduct the study are described in detail, alongside the process and conduct of analysis. Methods were reflected upon, and ethical considerations were addressed. The next chapter builds on the methods from this chapter, presenting the results of the cross-sectional survey study.

# **Chapter 6: Cross-sectional survey results**

---

## **Chapter 6: The uptake and use of video group consultations by healthcare professionals across primary care general practice: a cross-sectional survey.**

---

### **6.1 Introduction**

The former chapter has presented the methods from the cross-sectional survey study. This chapter presents the results of the cross-sectional survey, gathering data from a range of HCPs across UK general practices. This chapter aims to provide a context to the uptake and use of VGCs, which complements the development of the qualitative component of this research project. Specifically, this study aimed to highlight demographics, practicalities of running a VGC, barriers and enablers of the approach and training requirements.

Firstly, a brief overview of the methods used, as provided in Chapter 5 in detail, and the context for this chapter are described. This is followed by a detailed account of study findings, a discussion section to position the research in the wider context of the literature, the strengths and limitations of the study, concluding with a chapter summary.

### **6.2 Overview of methods used**

A detailed account of the study method is outlined in Chapter 5. A cross-sectional survey was conducted to identify the context and key areas of focus for the next stage of the research. The aims of the survey was to i) gather a greater understanding of the use of VGCs in primary care, ii) clarify demographics affecting the uptake of the approach, iii) identify the barriers and enablers to implementation and delivery within general

practice teams, and iv) develop a more robust evidence base for the delivery of VGCs in primary care general practice. The development of the survey was strongly informed by stakeholder engagement, consisting of those pertinent to and working within general practice teams. An analysis of the cross-sectional survey data, presented in this chapter, was conducted.

## **6.3 Results**

### **6.3.1 Baseline characteristics of participants**

Following exclusions and those who did not fully complete the survey, thirty-six participants responded, across nine regions of the UK (Table 19).

A sample size of 50 participants was initially anticipated. However, due to the limited and varied nature of usage across primary care settings, it was decided that a smaller sample size (36 respondents, 2 declined) would be acceptable due to the richness of data provided and further consideration of the external context and pressures facing general practice at the time of data collection.

Table 16 shows the majority of participants who completed the survey were female (77.7%). There was a higher number of participants, both male and female, in the age categories of 35-44 years (33.3%) and 45-54 years (27.7%), compared to 18-24 years (2.7%) and 25-34 years (13.8%). Table 16 shows that the highest percentage of participants were aged 35-44 years (33.3%). In this age category, there were a higher number of females (27.7%) than males (5.5%) who participated. None of



the participants were over 65 years. The survey did not collect any characteristics from those respondents who did not consent to completing the survey.

*Table 16: Age and gender comparison of participants*

	Participants			
	All n = % 36 (100%)	Female n = % 28 (77.7%)	Male n = % 7 (19.4%)	Prefer Not to Say n = % 1 (2.7%)
Age group (years)				
<b>18-24</b>	1 (2.7)	1 (2.7)	0 (0)	0 (0)
<b>25-34</b>	5 (13.8)	3 (8.3)	1 (2.7)	1 (2.7)
<b>35-44</b>	12 (33.3)	10 (27.7)	2 (5.5)	0 (0)
<b>45-54</b>	10 (27.7)	8 (22.2)	2 (5.5)	0 (0)
<b>55-64</b>	8 (22.2)	6 (16.6)	2 (5.5)	0 (0)
<b>&gt;65</b>	0 (0)	0 (0)	0 (0)	0 (0)

*Table displays frequency and column percentages*

The majority of participants had obtained a Bachelor's degree or higher qualification (86.1%), with differences between male (19.4%) and female (63.8%) categories. No participant had less than high school qualifications. An additional qualification was noted by a participant who had completed a post-graduate certificate (2.7%).

The sample population identified a range of HCPs and general practice staff roles, including GPs (n=16), GPNs (n=5), ANP/Advanced Clinical Practitioners [ACP] (n=7), AHPs (n=2), a practice manager (n=1), social

prescribers (n=3), a health coach (n=1) and a digital co-ordinator (n=1). Some roles were not captured in the sample, including HCAs, FCPs, administrative support/receptionists, pharmacists and physician's associates.

The highest proportion of participants were female GPs (30.5%), compared with male GPs who only accounted for 13.8% of the sample population. Nursing staff also comprised a large proportion of the sample population (33.3%), split into GPNs (13.8%) and ANPs/ACPs (19.4%). Administrative roles, inclusive of receptionists and practice managers were minimal, with only one participant from this staff group identified (2.7%). Additional roles were identified by participants, including a health coach (2.7%) and a digital co-ordinator (2.7%) as their main job role. Extensions of previously established roles were noted, including a Deputy PCN Clinical Director, a health coach, a nurse manager, a digital locality leads and a team leader for a health and wellbeing service.

Table 17: Baseline characteristics of participants

	Participants			
	All n = % 36 (100%)	Female n = % 28 (77.7%)	Male n = % 7 (19.4%)	Prefer Not to Say n = % 1 (2.7%)
<b>Academic qualifications (highest)</b>				
Less than high school qualifications	0 (0)	0 (0)	0 (0)	0 (0)
High school degree or equivalent	4 (11.1)	4 (11.1)	0 (0)	0 (0)
Bachelor's degree	18 (50.0)	14 (38.8)	4 (11.1)	0 (0)
Master's degree	11 (30.5)	8 (22.2)	2 (5.5)	1 (2.7)
Doctorate	2 (5.5)	1 (2.7)	1 (2.7)	0 (0)
<b>Other:</b>				
Post-graduate certificate	1 (2.7)	1 (2.7)	0 (0)	0 (0)
<b>Current job role</b>				
General Practitioner	16 (44.4)	11 (30.5)	5 (13.8)	0 (0)
General Practice Nurse	5 (13.8)	4 (11.1)	1 (2.7)	0 (0)
Advanced Clinical/Nurse Practitioner	7 (19.4)	6 (16.6)	0 (0)	1 (2.7)
Health Care Assistant	0 (0)	0 (0)	0 (0)	0 (0)
Allied Health Professional	2 (5.5)	1 (2.7)	1 (2.7)	0 (0)
First Contact Practitioner	0 (0)	0 (0)	0 (0)	0 (0)
Administrative Support/Receptionist	0 (0)	0 (0)	0 (0)	0 (0)
Practice Manager	1 (2.7)	1 (2.7)	0 (0)	0 (0)
Clinical Pharmacist	0 (0)	0 (0)	0 (0)	0 (0)
Social Prescriber	3 (8.3)	3 (8.3)	0 (0)	0 (0)
Physicians Associate	0 (0)	0 (0)	0 (0)	0 (0)
<b>Other:</b>				
Health Coach	1 (2.7)	1 (2.7)	0 (0)	0 (0)
Digital Coordinator	1 (2.7)	1 (2.7)	0 (0)	0 (0)
<b>Number of years in role</b>				

	Participants			
	All n = % 36 (100%)	Female n = % 28 (77.7%)	Male n = % 7 (19.4%)	Prefer Not to Say n = % 1 (2.7%)
<b>(years)</b>				
<b>0-3</b>	7 (19.4)	5 (13.8)	2 (5.5)	0 (0)
<b>3-5</b>	2 (5.5)	2 (5.5)	0 (0)	0 (0)
<b>5-10</b>	6 (16.6)	5 (13.8)	0 (0)	1 (2.7)
<b>10-20</b>	7 (19.4)	5 (13.8)	2 (5.5)	0 (0)
<b>20-30</b>	9 (25.0)	8 (22.2)	1 (2.7)	0 (0)
<b>&gt;30</b>	5 (13.8)	3 (8.3)	2 (5.5)	0 (0)
<b>Number of years in general practice (years)</b>				
<b>0-3</b>	7 (19.4)	5 (13.8)	1 (2.7)	1 (2.7)
<b>3-5</b>	2 (5.5)	1 (2.7)	1 (2.7)	0 (0)
<b>5-10</b>	6 (16.6)	6 (16.6)	0 (0)	0 (0)
<b>10-20</b>	8 (22.2)	5 (13.8)	3 (8.3)	0 (0)
<b>20-30</b>	12 (33.3)	10 (27.7)	2 (5.5)	0 (0)
<b>&gt;30</b>	1 (2.7)	1 (2.7)	0 (0)	0 (0)

*Table displays frequency and column percentages*

The years worked by participants in their roles was varied across the sample, with participants from each category spanning from 0-3 years to >30 years (Table 17). Twenty-five percent (25.0%) of the sample had worked in their current role for 20-30 years and just under twenty percent (19.4%) around 10-20 years. Participants working in their current role for 3-5 years (5.5%) were few.

The years worked by participants in their current role was not necessarily reflected in the years participants worked in general practice (Figure 19). A larger number of participants were identified to have worked in general practice for 20-30 years (33.3%) and for 10-20 years (22.2%). The same number of participants had worked in their current role for 0-3 years compared to the time worked in general practice (19.4%). Participants working in general practice for >30 years (2.7%), had worked in their current role for a longer period of time (13.8%).

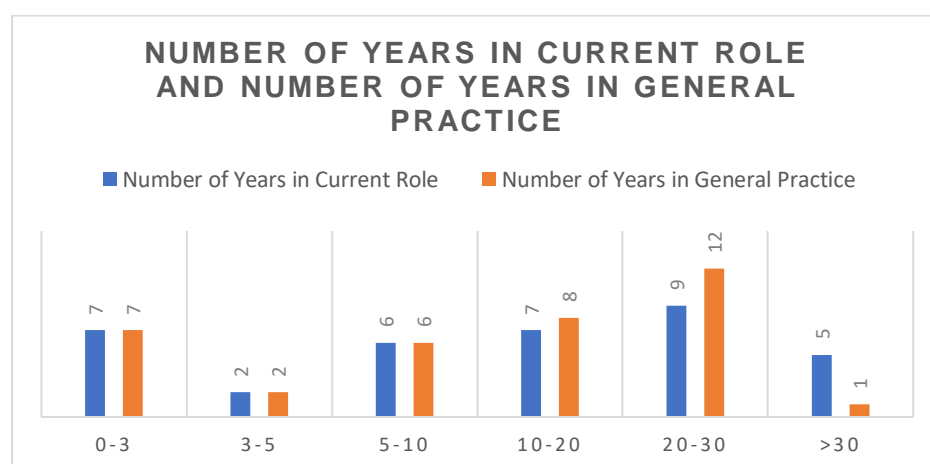


Figure 19: Number of years in current role and number of years in general practice

A large proportion of participants reported to have specialist qualifications related to their role (55.5%), compared with those who did not (44.4%). Table 18 below shows the specialist qualifications listed.

Table 18: Specialist qualifications related to the role

Do you have any specialist qualifications relating to your role?	
	<b>Participants</b> <b>n = %</b> 36 (100%)
<b>Yes</b>	20 (55.5)
Specialist qualifications: <ul style="list-style-type: none"> <li>• Non-Medical Prescribing</li> <li>• Advanced Clinical Practice</li> <li>• LTC Courses (Diabetes, Respiratory, CVD, CHD, Women's Health, Paediatrics)</li> <li>• Cytology</li> <li>• MRCS</li> <li>• MRCGP</li> <li>• Diploma in Child Health</li> <li>• DRCOG</li> <li>• DNA Insight Social Prescriber Plus Course</li> <li>• DNA Health Coach Course</li> <li>• Psychological Wellbeing</li> <li>• World Obesity SCOPE National Fellow</li> <li>• Practice Development</li> <li>• Mentorship</li> </ul>	
<b>No</b>	16 (44.4)

Table displays frequency and column percentages

### 6.3.2 Baseline characteristics of general practices

A wide variety of practice locations were captured, with the largest proportion of participants reported to be from London (19.4%) and the South East of England (19.4%) (Table 19). The North-West of England (16.6%) and the West Midlands (13.8%) were reported to have the next largest representation of participants. No responses were received from Wales (0%) and Northern Ireland (0%), yet one response was received from Scotland (2.7%). More or the same number of female participants took part in the survey from each location of the UK (Table 19).

Table 19: Practice demographics

	Participants			
	All n = % 36 (100%)	Female n = % 28 (77.7%)	Male n = % 7 (19.4%)	Prefer Not to Say n = % 1 (2.7%)
<b>Practice location (area)</b>				
<b>North East England</b>	2 (5.5)	0 (0)	2 (5.5)	0 (0)
<b>North West England</b>	6 (16.6)	5 (13.8)	1 (2.7)	0 (0)
<b>Yorkshire &amp; The Humber</b>	3 (8.3)	3 (8.3)	0 (0)	0 (0)
<b>East Midlands</b>	0 (0)	0 (0)	0 (0)	0 (0)
<b>West Midlands</b>	5 (13.8)	2 (5.5)	2 (5.5)	1 (2.7)
<b>East of England</b>	3 (8.3)	3 (8.3)	0 (0)	0 (0)
<b>London</b>	7 (19.4)	7 (19.4)	0 (0)	0 (0)
<b>South East</b>	7 (19.4)	6 (16.6)	1 (2.7)	0 (0)
<b>South West</b>	2 (5.5)	1 (2.7)	1 (2.7)	0 (0)
<b>Wales</b>	0 (0)	0 (0)	0 (0)	0 (0)
<b>Scotland</b>	1 (2.7)	1 (2.7)	0 (0)	0 (0)
<b>Northern Ireland</b>	0 (0)	0 (0)	0 (0)	0 (0)
<b>Practice size (thousands)</b>				
<b>0-2,000</b>	1 (2.7)	1 (2.7)	0 (0)	0 (0)
<b>2,000-5,000</b>	4 (11.1)	2 (5.5)	2 (5.5)	0 (0)
<b>5,000-10,000</b>	4 (11.1)	4 (11.1)	0 (0)	0 (0)
<b>10,000-15,000</b>	12 (33.3)	9 (25.0)	3 (8.3)	0 (0)
<b>15,000-20,000</b>	7 (19.4)	6 (16.6)	1 (2.7)	0 (0)
<b>20,000-25,000</b>	3 (8.3)	1 (2.7)	1 (2.7)	1 (2.7)
<b>&gt;25,000</b>	5 (13.8)	5 (13.8)	0 (0)	0 (0)

Table displays frequency and column percentages

A range of practice sizes were reported by participants (Figure 20). The majority of participants worked in practices with 10,000-15,000 patients (33.3%) and 15,000-20,000 patients (19.4%). Practices with around 0-2,000 patients were minimally represented (2.7%), as well as practices with 20,000-25,000 patients (8.3%).

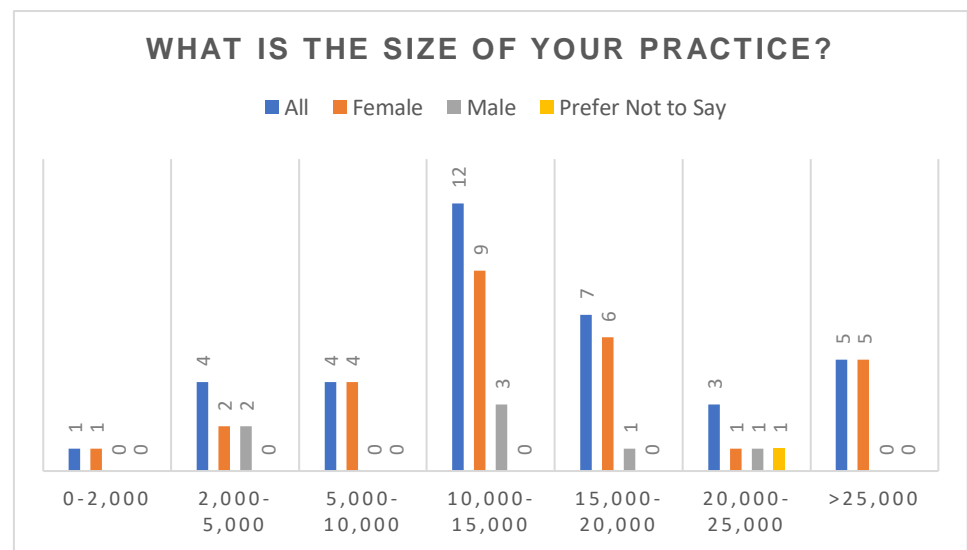


Figure 20: Practice size



### 6.3.3 Use of VGCs

Of all participants who completed the survey, twenty-seven participants (75%) currently use VGCs in practice, whereas only nine participants (25%) had previously used the approach. Data regarding participants not using VGCs was not collected, as this was not in the remit of the research question.

If participants had previously used VGCs, they were asked '*If you have previously used video group consultations and stopped, why have you stopped?*' (Table 20). A content analysis of the data found the majority of participants deemed facilitation and support of VGCs as key to why practices had stopped using VGCs.

Facilitation and support of VGCs (n=11), as a code category, was reported as a key barrier to the uptake and use of the approach due to a range of reasons, including change in job role or end of VGC programme (n=3), alternative choice of consultation style (n=1), clinical support (n=1), technological support (n=1), administrative support, including preparation of resources (n=2), time intensity (n=1), additional workload (n=1) and lack of capacity (n=1). One participant highlighted '*they are time intensive for small turnout in terms of prep of resources, tech support, 2 clinicians presenting and someone on the chat box*'(P30\_SP). Two participants reported that VGC programmes were not continued if a '*specific programme ended*'(P23\_SP) or the '*the health coach who was providing the facilitator role moved away*'(P33\_GP). There were also difficulties in delivering the approach virtually as one participant described '*we are currently looking at keeping the same format of a VGC but offering it in*

*person as our patients appear keen to attend in person over online'(P30\_SP).*

In addition, many participants had stopped using VGCs due to the lack of buy-in of the approach. This was categorised as either patient buy-in (n=6) or practice buy-in (n=3). Patient buy-in included low attendance (n=3), difficulty with recruitment (n=1), push back (n=1), and a lack of motivation and uptake from patients (n=1). This is also extended to practice buy-in, in which the practice manager was identified to be a key individual in the uptake of VGCs (n=1). A participant stated '*PM [practice manager] not overly keen as numbers for the session were low'(P03\_ACP/ANP).* Lack of practice investment (n=1) and lack of investment for the sustainability of VGCs (n=1) were also factors which were identified through categorisation of data.

Table 20: Frequency and percentage of individual survey responses to each content analysis code category for question 'If you have previously used video group consultations and stopped, why have you stopped?'

Code category	Code description	Example of coded units	N	%
<b>Facilitation and support</b>	The provision of resources, encouragement and support to achieve a set of objectives	<p><b>'change in job role'</b>(P03_ACP/ANP) (change in job role)</p> <p><b>'health coach who was providing the facilitator role moved away'</b>(P33_GP) (change in job role)</p> <p><b>'specific programme ended'</b>(P23_SP) (VGC programme ended)</p> <p><b>'pts appear keen to attend in person over online'</b>(P30_SP) (face-to-face vs. virtual)</p> <p><b>'tech support'</b>(P30_SP) (technology support)</p> <p><b>'PM not overly keen as numbers for sessions were low'</b>(P03_ACP/ANP) (clinical support, administrative support)</p> <p><b>'not enough capacity'</b>(P29_GP) (lack of capacity)</p> <p><b>'they are time intensive for a small turnout'</b>(P30_SP) (time intensive)</p> <p><b>'small turnout in terms of prep of resources'</b>(P30_SP) (preparation of resources)</p> <p><b>'difficult to recruit on top of day job'</b>(P03_ACP/ANP) (additional workload)</p>	11	55
<b>Patient buy-in</b>	Patient acceptance of and willingness to actively support and participate	<p><b>'both were low in terms of attendees'</b>(P30_SP) (low attendance)</p> <p><b>'difficult to recruit on top of day job'</b>(P03_ACP/ANP) (difficulty with recruitment)</p> <p><b>'push back from patients'</b>(P05_GPN) (pushback from patients)</p> <p><b>'we found it better to have a webinar, then invite motivated individuals to the smaller VGC, rather than try to find a group of motivated individuals'</b>(P30_SP) (lack of motivation and uptake from patients)</p>	6	30
<b>Practice buy-in</b>	Practice acceptance of and willingness to	<p><b>'PM not overly keen as numbers for sessions were low'</b>(P03_ACP/ANP) (practice manager buy-in)</p> <p><b>'not enough capacity'</b>(P29_GP) (lack of practice investment)</p>	3	15

Code category	Code description	Example of coded units	N	%
	actively support and participate	<i>'lack of investment from the practice to support the continuation'</i> (P14_GPN) (lack of investment for the sustainability of VGCs)		
			20	

### 6.3.4 Defining VGCs

Participants were asked ‘*how does your practice define a video group consultation?*’, in which a select number of categories were given (Figure 21). A large proportion of participants (45.8%) used the term ‘*video group consultation*’ to define the approach. However, ‘*video group clinic*’ was also reported as a defining term by twenty-five percent of participants. ‘*Educational therapy*’ (10.4%) and ‘*support group*’ (12.5%) were included as features of the approach yet became a defining characteristic for participants. ‘*Shared medical appointment*’ (2%) and ‘*group therapy*’ (4.2%) were not widely used as definitions of a VGC.

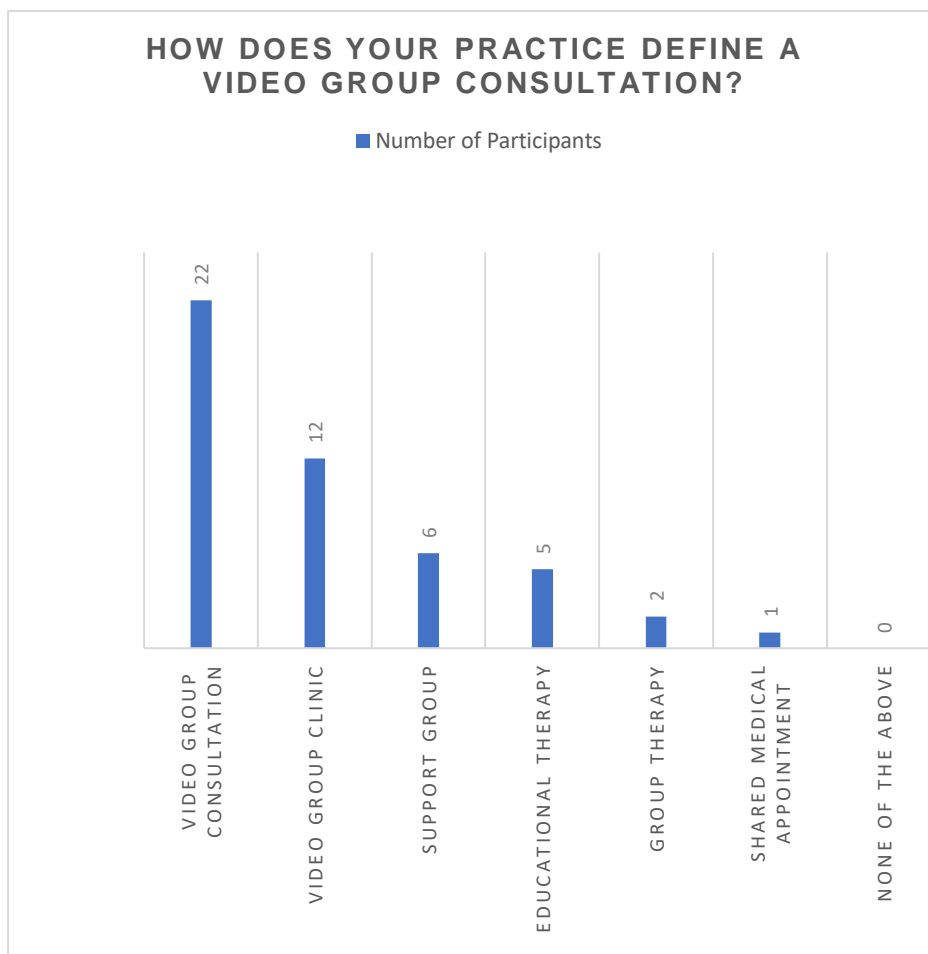


Figure 21: Definitions of VGCs

Additional descriptions not provided in the initial categorical definitions of VGCs included *'webinar'* (P13\_GP, P19\_GP), *'virtual group consultations'* (P15\_GP), *'group video call'* (P16\_GP) and an *'online chronic pain course'* (P34\_GP). One participant stated, when asked regarding additional descriptors of VGCs, *'No we try to stick to the same terminology to avoid confusing patients'* (P01\_GP). Another participant described a VGC as *'an opportunity to hear from others in similar situations and all speak with an expert in front of each other for [a] shared learning experience'* (P30\_SP).

Participants were also asked to answer, *'how would you define how you use video group consultations in your practice?'* (Table 21). The most commonly reported definition was associated with LTCs (n=25). LTC reviews encompassed a number of conditions, including diabetes (n=4) and cancer care reviews (n=1), yet many participants did not elaborate on the scope of LTC reviews. Many participants also used words such as *'management'* (n=2) and *'chronic disease'* (n=1) in relation to LTC reviews. Often those participants who defined the approach as a *'video group consultation'*, highlighted the use of VGCs for LTC management, yet this was also apparent in descriptions of a *'video group clinic'*.

Group support and health promotion were aspects of VGCs used to define the use of the approach. Group support (n=14) included *'providing discussion'*(P19\_GP), *'interactive questioning'*(P19\_GP), *'another method of connecting'*(P15\_GP) and *'experience sharing'*(P34\_GP). One participant defined a VGC as *'an online group that enables discussion amongst a group of patients with similar health issues'*(P14\_GPN). Health promotion (n=13) was also mentioned frequently across the data set, including *'goal setting'*(P09\_HC), *'coaching'*(P04\_GP) and *'information*

*providing'*(P19\_GP). Participants tended to characterise definitions based on aspects of the approach rather than through the use of particular medical conditions.

Lifestyle Medicine (n=8) was also viewed as an aspect of health promotion, as a means of lifestyle advice (n=4), for example, for patients with Rheumatoid Arthritis, for weight management (n=1), CBT for menopause groups (n=1), post-natal care (n=1) and mental health (n=1). One participant defined the approach as *'providing information on a dietary approach to diabetes plus supporting patients if they chose to follow that plan in de-medicating'*(P31\_GP). Another participant stated a VGC is a way to *'tackle any anxieties and loneliness'*(P32\_PM). Others used definitions such as *'empowering coaching group with a lifestyle medicine approach'*(P04\_GP) and *'to help people with self-care'*(P01\_GP).

The type of approach delivered was also used as a defining characteristic relating to the consultation style (n=6) and classification (n=4). Consultation styles included a *'Q & A'*(P32\_PM) technique, *'fostering [of] patient experts'*(P20\_AHP) and presentation of *'different speakers on each month'*(P32\_PM). Participants stated *'engaging peer groups aimed at fostering patient experts in managing long-term conditions'*(P20\_AHP) and *'peer support answering questions more time to go through long-term conditions'*(P07\_GPN). Classification included *'an online group'*(P14\_GPN) or as *'a consultation with patient and medical student in remote locations'*(P16\_GP).

Table 21: Frequency and percentage of individual survey responses to each content analysis code category for question 'How would you define how you use video group consultations in your practice?'

Code category	Code description	Example of coded units	N	%
<b>Long-term condition review</b>	A review of a long-term condition	<b>'long-term condition management e.g. lipids, diet advice'</b> (P08_GPN) (long-term condition review) <b>'only for diabetes annual review at present'</b> (P10_ACP/ANP), <b>'currently using for diabetic patients'</b> (P35_GP) (diabetes) <b>'CCR'</b> (P12_GPN) (cancer care) <b>'chronic disease management'</b> (P11_ACP/ANP) (disease management)	25	35.7
<b>Lifestyle medicine</b>	Focused on preventative healthcare and self-care	<b>'to help people selfcare'</b> (P01_GP) (lifestyle medicine) <b>'supporting patients if they chose to follow that plan in de-medicating'</b> (P31_GP) (lifestyle medicine) <b>'for weight management groups'</b> (P18_GP) (weight management groups) <b>'CBT for menopause groups'</b> (P18_GP) (CBT for menopause groups) <b>'post natal'</b> (P12_GPN) (post-natal care) <b>'tackle any anxieties &amp; loneliness'</b> (P32_PM) (mental health)	8	11.4
<b>Group support</b>	A group of people with common experiences and concerns who provide emotional support for one another	<b>'peer to peer support facilitated by coach and clinician'</b> (P02_AHP) (group support) <b>'group support for patients'</b> (P05_GPN) (group support) <b>'an online group that enables discussion amongst a group of patients with similar health issues'</b> (P14_GPN) (enabling discussion)	14	20



Code category	Code description	Example of coded units	N	%
		<i>'information providing discussion and interactive questions'</i> (P19_GP) (interactivity) <i>'another method of connecting'</i> (P15_GP) (method of connecting) <i>'to connect people with community resources'</i> (P01_GP) (method of connecting) <i>'experience sharing'</i> (P34_GP) (experience of sharing)		
<b>Health promotion</b>	The process of enabling people to increase control over, and to improve, their health	<i>'health promotion'</i> (P13_GP) (health promotion) <i>'goal-setting'</i> (P09_HC) (goal setting) <i>'empowering coaching group with a lifestyle medicine approach'</i> (P04_GP) (coaching) <i>'information providing'</i> (P13_GP) (information providing)	13	18.5
<b>Consultation style</b>	The ways in which a consultation is organised and conducted	<i>'peer support answering questions'</i> (P07_GPN) (question and answers) <i>'fostering patient experts in managing long-term conditions'</i> (P07_GPN) (fostering patient experts) <i>'different speakers on each month'</i> (P32_PM) (presentation of different speakers)	6	8.5
<b>Classification</b>	A typology	<i>'an online group'</i> (P14_GPN) (online group) <i>'consultation with patient and medical student in remote locations'</i> (P16_GP) (remote consultation with patients and medical students) <i>'a group of patients with similar health issues'</i> (P14_GPN) (group with similar health issues)	4	5.7

Code category	Code description	Example of coded units	N	%
		<i>'a remote/digital version of what would happen face to face'</i> (P15_GP) (a remote/digital version of what would happen face to face)		
			<b>70</b>	

### 6.3.5 Roles in VGCs

Table 22: Roles involved in VGCs

	Participants			
	All n = % 36 (100%)	Female n = % 28 (77.7%)	Male n = % 7 (19.4%)	Prefer Not to Say n = % 1 (2.7%)
<b>How do you define your role in the delivery of video group consultations?</b>				
<b>Clinician</b>	26 (72.2)	19 (52.7)	6 (16.6)	1 (2.7)
<b>Facilitator</b>	15 (41.6)	10 (27.7)	4 (11.1)	1 (2.7)
<b>Co-ordinator</b>	7 (19.4)	6 (16.6)	1 (2.7)	0 (0)
<b>Not Sure</b>	2 (5.5)	2 (5.5)	0 (0)	0 (0)

Table displays frequency and column percentages

Participants were asked to define their role in a VGC, as either a clinician, facilitator, or co-ordinator of the session which resulted in a varied distribution across all roles (Table 22). The role of the clinician was represented largely (72.2%), with a greater number of female responses (52.7%) than male (16.6%). This was followed by the facilitator role with fifteen responses (41.6%), with a larger number of responses from females (27.7%) than males (11.1%). The co-ordinator role identified seven responses (19.4%), and two participants were not sure how to define their role (5.5%).

Table 23: Clinical roles in VGCs

	Participants
	All n = % 35* (100%)
<b>What is your role in the delivery of video group consultations in your practice?</b>	
<b>General Practitioner</b>	16 (45.7)
<b>General Practice Nurse</b>	5 (14.2)
<b>Advanced Clinical/Nursing Practitioner</b>	7 (20.0)
<b>Health Care Assistant</b>	0 (0)
<b>Allied Health Professional</b>	3 (8.5)
<b>First Contact Practitioner</b>	0 (0)
<b>Administrative Support/Receptionist</b>	0 (0)
<b>Practice Manager</b>	0 (0)
<b>Clinical Pharmacist</b>	0 (0)
<b>Social Prescriber</b>	2 (5.7)
<b>Physicians Associate</b>	0 (0)
<b>Health Coach</b>	2 (5.7)
<b>Paramedic</b>	0 (0)

Table displays frequency and column percentages

\*One response was removed from the data as a participant stated all roles in a video group consultation (Practice Manager, GPN, Administrative Support/Receptionist, Clinical Pharmacist, and Health Coach) and not just their own role

The largest proportion of responses defined their clinical role in a VGC as a GP (45.7%), totalling nearly half of all responses (Table 23). Following this, the next largest reported clinical role was an ANP/ACP (20.0%). Other roles highlighted were a GPN (14.2), an allied health professional

(8.5%), a social prescriber (5.7%) and a health coach (5.7%). No participants identified their role as a HCA, practice manager, administrative support/receptionist, clinical pharmacist, physicians associate or paramedic. Distinctions between males and females was not conducted, as this does not echo any bearing on their clinical role in a VGC.

Additional roles to previously established job roles were highlighted to be involved in VGCs, including the role of the health coach, which was described as an extension of a previously established role (n=2), administration support (n=2), facilitators including administration and IT (n=3), a HCA (n=1), a digital coordinator (n=1), a clinical governance role (n=1), a link worker (n=1), and a sports and exercise registrar (n=1).

### 6.3.6 Conditions managed using VGCs



Figure 22: Conditions managed using VGCs

Medical conditions managed using VGCs were identified, with participants able to make a selection regarding the conditions managed using this approach (Figure 22). Participants were able to select multiple responses.

The most common medical conditions managed using VGCs were diabetes (Type 1 or Type 2) (27.0%) and weight management, including obesity (17%). This was followed by both cardiovascular conditions, including hypertension and high cholesterol (12%) and respiratory

conditions, including asthma, COPD and COVID-19 (12%). Mental health including depression, anxiety and loneliness, and musculoskeletal conditions including arthritis and osteoporosis made up a total of nine percent each of the number of responses. Pain management (8%), long-COVID (5%) and cancer care (1%) were minimally represented. No responses included Paediatrics, as a condition managed by VGCs.

Participants were able to expand on the management of other conditions managed by VGCs when asked the question, '*Do you manage any other conditions through video group consultations?*' (Table 24). Responses related to conditions associated with health prevention (n=10) or health promotion (n=2). Health prevention included conditions such as diabetes including pre-diabetes and newly diagnosed diabetics (n=3), men and women's health including menopause (n=4), cancer (n=1), dementia (n=1) and post-natal care (n=1). Diabetes was the most reported condition managed by the approach, although this was not successful for all general practice staff, as one participant stated '*we did try diabetes group consultations for over a year but they did not work well for us*' (P34\_GP). Conditions/activities related to health promotion included exercise classes (n=1), with the aim of disease prevention (n=1). One participant stated, '*our pilot is structured so that we allow patients to leave a message requesting on which topic they want the group clinics so we will offer group clinics in any area requested by the patient*' (P01\_GP). Other participants mentioned the use of VGCs as a form of medical student teaching (n=1), and many participants stated that they had '*not yet*' (n=4) delivered VGCs for any other conditions.

Table 24: Frequency and percentage of individual survey responses to each content analysis code category for question 'Do you manage any other conditions through video group consultations?'

Code category	Code description	Example of coded units	N	%
<b>Diabetes</b>	A long-term condition which causes a person's blood sugar level to become too high	<b>'we did try diabetes group consultations for over a year but they did not work well for us'</b> (P34_GP) (diabetes) <b>'pre-diabetes'</b> (P05_GPN) (pre diabetes) <b>'pre-diabetes in urdu language for women'</b> (P14_GPN) (pre-diabetes in urdu language for women) <b>'we are looking to roll this out for newly diagnosed diabetics'</b> (P15_GP) (newly diagnosed diabetes)	3	21.4
<b>Health promotion</b>	The process of enabling people to increase control over, and to improve, their health	<b>'exercise class'</b> (P32_PM) (exercise class) <b>'looking at starting prevention'</b> (P04_GP) (disease prevention)	2	14.2
<b>Men and women's health</b>	Health conditions affecting either men or women	<b>'menopause'</b> (P18_GP) (menopause) <b>'menopause conditions'</b> (P36_SP) (menopause) <b>'post natal'</b> (P12_GPN) (post-natal care) <b>'men's health'</b> (P12_GPN) (men's health)	5	35.7
<b>Cancer</b>	A disease resulting from uncontrolled growth and division of abnormal cells	<b>'cancer'</b> (P04_GP) (cancer)	1	7.1
<b>Dementia</b>	A group of symptoms that affects memory, thinking and interferes with everyday life	<b>'dementia'</b> (P04_GP) (dementia)	1	7.1
<b>Miscellaneous</b>	Other response	<b>'medical student teaching'</b> (P16_GP) (medical student teaching)	7	36.8



Code category	Code description	Example of coded units	N	%
		<i>'our pilot is structured so that we allow patients to leave a message requesting on which topic they want the group clinics so we will offer group clinics in any area requested by the patient'</i> (P01_GP) (condition chosen by patients for group consultation) <i>'no'</i> (P08_GPN) (no) <i>'not yet'</i> (P24_GP, P35_GP) (no) <i>'not but shortly'</i> (P19_GP) (no) <i>'not at the moment'</i> (P34_GP) (no)		
			19	

### 6.3.7 Patients and VGCs

Table 25: Number of patients in VGCs

	Participants
	All n = % 36 (100%)
How many patients are usually included in a video group consultation?	
2-4	3 (8.3)
4-6	14 (38.8)
6-8	13 (36.1)
8-10	4 (11.1)
10+	2 (5.5)

Table displays frequency and column percentages

The number of patients involved in a VGC was identified by participants (Table 25). Four to six patients (38.8%) and six to eight patients (36.1%) per consultation, were most commonly reported. There were minimal responses for two to four patients (8.3%), eight to ten patients (11.1%) and 10+ patients (5.5%).

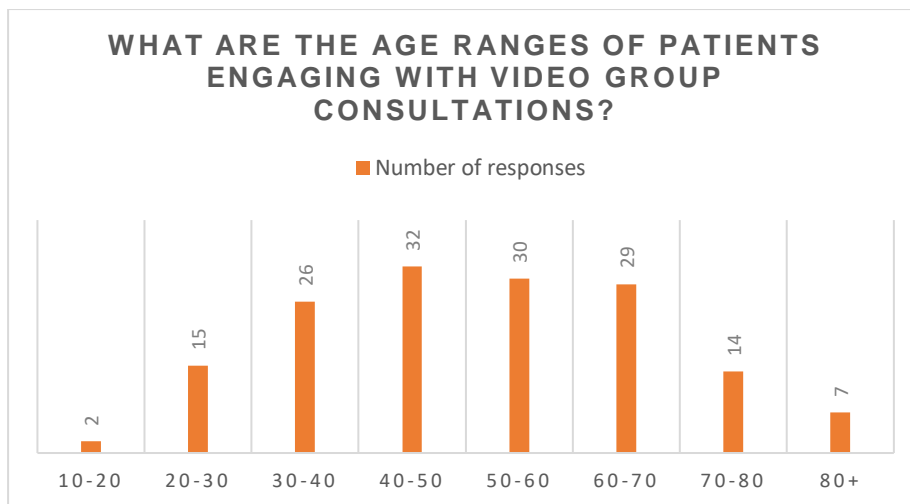


Figure 23: Age ranges of patients in VGCs

A range of ages of patients engaging with VGCs were presented, in which participants could select multiple answers (Figure 23). Patients aged forty to fifty ( $n=32$ ) were identified most commonly, followed by aged fifty to sixty ( $n=30$ ), aged sixty to seventy ( $n=29$ ) and aged thirty to forty ( $n=26$ ). Fourteen participants identified patients aged seventy to eighty, have engaged with VGCs, yet only seven participants stated patients greater than eighty have been involved. Ages ten to twenty were only identified twice ( $n=2$ ).

### 6.3.8 Practicalities of running VGCs

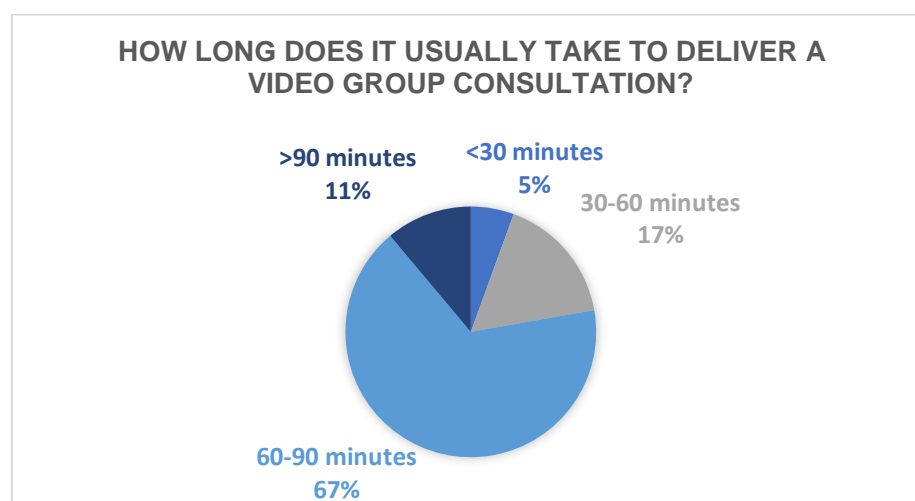


Figure 24: How long does it usually take to deliver a VGC?

Participants were asked as part of the questionnaire to state how long it usually takes to deliver a VGC (on average) (Figure 24). Participants were only required to select one answer from the list given. A significant proportion of responses stated the time taken to deliver a VGC was sixty to ninety minutes (67%). Only six participants (17%) stated thirty to sixty minutes, four participants (11%) stated greater than ninety minutes and two participants stated less than 30 minutes (5%) to deliver a VGC.

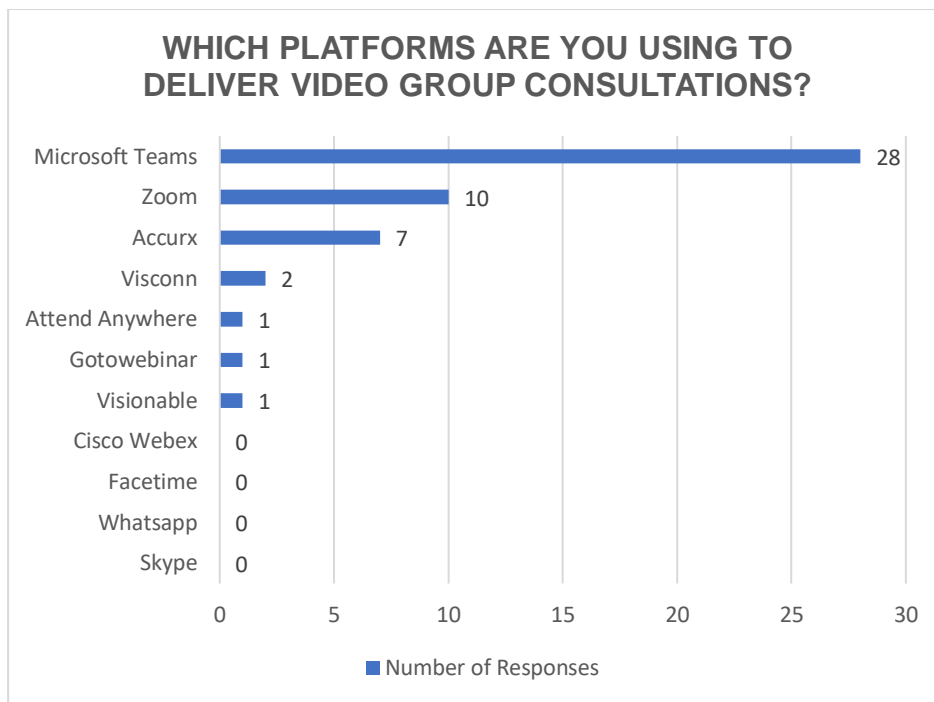


Figure 25: Which platforms are you using to deliver VGCs?

Microsoft Teams was the most favoured platform for participants to deliver VGCs with twenty-eight responses (77.8%) (Figure 25). Zoom (n=10), AccuRx (n=7), Attend Anywhere (n=1), Gotowebinar (n=1), Visconn (n=2) and Visionable (n=1) were highlighted as platforms used to deliver VGCs. No responses were collected for Cisco Webex, Facetime, WhatsApp and Skype.

### 6.3.9 Choice of consultation

The majority of participants responded 'Yes' (83%, n=30) to '*Are patients offered the choice of video group consultation, group consultation or a one-to-one consultation, if a video group consultation is available for a particular condition?*', compared to 17 percent (n=6) of participants answering 'No'

The questionnaire asked participants '*Did your practice already deliver group consultations before offering video group consultations?*'. Sixty-one percent (n=22) of participants responded with 'No' compared to thirty-six percent (n=13) answering 'Yes'. Three percent (n=1) of participants were 'Not sure' on the response to the question.

### 6.3.10 Set-up of VGCs

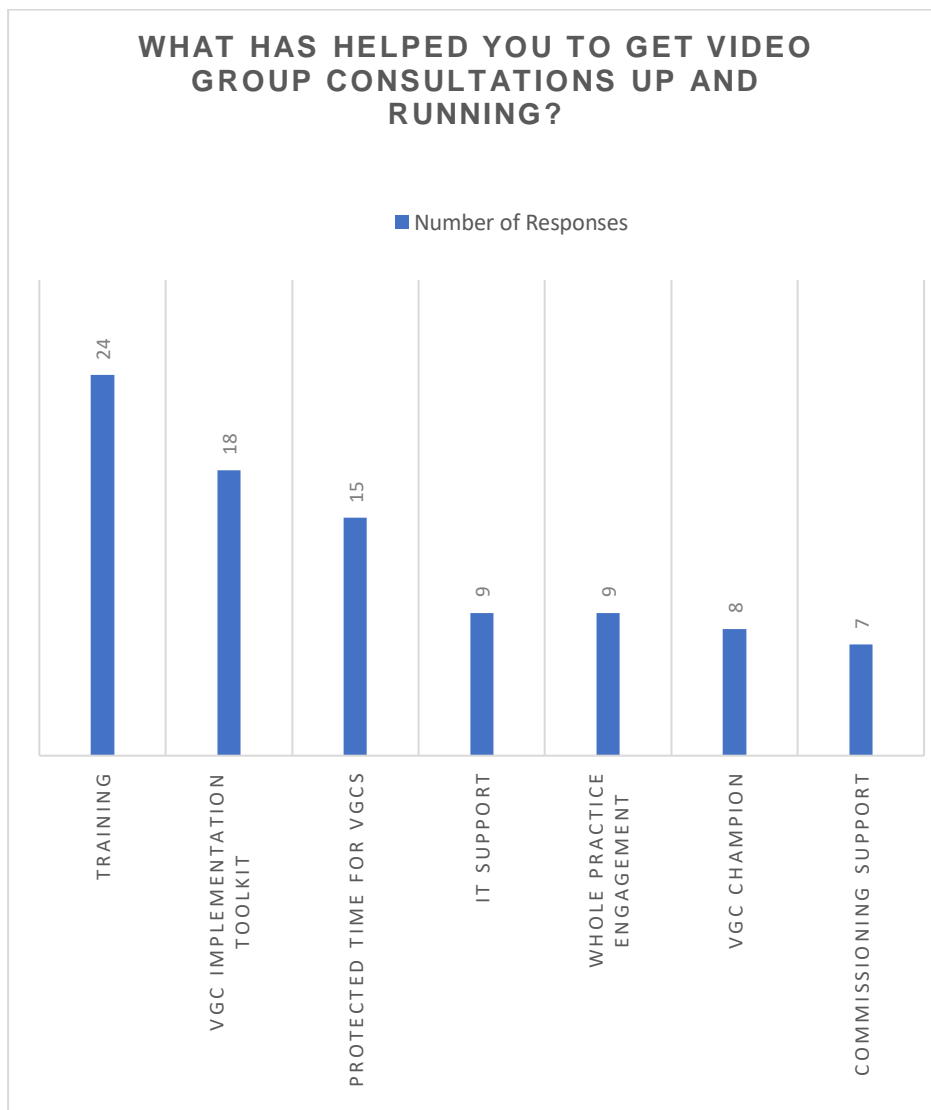


Figure 26: What has helped you to get VGCs up and running?

With regards to the set-up of VGCs in practice, participants were asked to highlight factors contributing to successful delivery (Figure 26). Twenty four participants stated training was one of the factors helping to get VGCs up and running in practice. This was followed by the VGC Implementation Toolkit (n=18), Protected Time (n=15), a VGC Champion

(n=8), I.T Support (n=9), Whole Practice Engagement (n=9) and Commissioning Support (n=7).

Participants were asked *'what other factors have played a role in the set-up of video group consultations'* (Table 26). Over half of responses (53.8%) related to organisational and practice support as a key factor in the set-up of VGCs. Organisational and practice support included administrative support during and in the initial work-up (n=3), support from GP's (n=1), commissioning investment (n=4) and practice/group support (n=3). In particular, several participants mentioned commissioning, in which *'we were commissioned to provide the service for a PCN'*(P31\_GP) and *'CCG locally commissioned service incentivising group consultation delivery'*(P33\_GP). Co-operation with other practices (n=1) and utilising *'experts who have done this many times before'*(P19\_GP) (n=1) was central to the set-up of the approach in practice. In addition, interest in various patient groups usually was dependent on organisational and practice support in that *'practice is keen to support particular cohort such as pre-diabetics, mental health so we have explored using VGCs as a way to offer targeted support to these individuals'*(P30\_SP).

The next reported category was the influence of individual attributes in contributing to the set-up of VGCs. Beneficial attributes in aiding the uptake and use of VGCs were identified as *'determination'*(P12\_GPN), *'enthusiasm'*(P14\_GPN), *'personal interest'*(P18\_GP), *'desire to be more digital'*(P15\_GP) and *'confidence in getting the change project up and running'*(P04\_GP). These attributes of participants ultimately helped in *'believing in the model'*(P03\_ACP/ANP).



The need for newer ways of working and the influence of the pandemic has ultimately stimulated increased digital engagement within practices, in which VGCs align with this digitalised model. Many participants expressed the need for increased digital engagement, due to the ways COVID-19 impacted healthcare delivery, *'utilising video as a consultation method for patients to access health care provision'*(P08\_GPN).

Blockers identified in the set-up of VGCs referred to reluctance to change with individuals *'being stubborn'*(P03\_ACP/ANP), and time allocated to the approach. A participant identified that *'having the time to build these sessions'*(P27\_NC) is paramount as *'once foundations are in place some sessions can run on self-referrals, reducing admin processes'*(P12\_NC). Although, participants stated that this relies on *'having more people to help than just one person doing it'*(P07\_GPN).

Table 26: Frequency and percentage of individual survey responses to each content analysis code category for question 'What other factors have played a role in the set-up of video group consultations?'

Code category	Code description	Example of coded units	N	%
<b>Organisational and practice support</b>	Support offered by practices and at an organisational level	<p><b>'practice enthusiasm'</b>(P32_PM) (practice support)</p> <p><b>'admin support'</b>(P36_SP) (administrative support)</p> <p><b>'support from GPs'</b>(P09_HC) (support from GPs)</p> <p><b>'CCG locally commissioned service incentivising group consultation delivery'</b>(P33_GP) (commissioning support and buy-in)</p> <p><b>'we were commissioned to provide the service for a PCN'</b>(P32_GP) (commissioning support and buy-in)</p> <p><b>'we have had excellent support from back office staff which has helped us implement the service'</b>(P31_GP) (commissioning support and buy-in)</p> <p><b>'practice is keen to support particular cohort such as pre-diabetics, mental health so we have explored using VGCs as a ways to offer targeted support to these individuals'</b>(P30_SP) (interest in various patient groups)</p> <p><b>'once foundations are in place some sessions can run off self-referrals, reducing admin processes'</b>(P27_NC) (initial work-up reduces admin)</p>	14	53.8
<b>Beneficial attributes</b>	A quality or feature regarded as a benefit to the characteristics or inherent part of someone or something	<p><b>'determination'</b>(P12_GPN) (determination)</p> <p><b>'enthusiasm from staff'</b>(P14_GPN) (enthusiasm from staff)</p> <p><b>'confidence in getting the change project up and running'</b>(P04_GP) (professional confidence)</p> <p><b>'personal interest'</b>(P18_GP) (personal interest)</p> <p><b>'believing in the model'</b>(P03_ACP/ANP) (believing in the model)</p>	7	26.9

Code category	Code description	Example of coded units	N	%
		<i>'desire to be more digital'</i> (P15_GP) (desire to be more digital)		
<b>Blockers</b>	A circumstance or obstacle which keeps an intervention from being implemented into practice	<i>'being stubborn'</i> (P03_ACP/ANP) (reluctancy to change) <i>'having the time to build these sessions'</i> (P27_NC) (time)	2	7.7
<b>Newer ways of working</b>	A shift in practice which promotes a different way of working	<i>'covid – utilising video as a consultation method for patients to access healthcare provision'</i> (P08_GPN) (covid) <i>'desire to be digital'</i> (P15_GP) (increased digital engagement)	3	11.5
			<b>26</b>	

### 6.3.11 Barriers and challenges with VGCs

Barriers or challenges to the uptake and use of VGCs were described by all participants who are involved or had previously been involved with the approach (Table 27). The most commonly reported barrier was associated with the uptake of the approach by both staff, the practice and patients (36%). With regards to staff, *'challenging doubters'*(P21\_ACP/ANP) was an issue, with difficulties in *'changing perceptions of group consultations'*(P21\_ACP/ANP) and *'reluctance for certain clinicians to engage'*(P28\_GP). Further to this, one participant highlighted that despite positive perceptions of the approach *'staff training and availability is a huge challenge, as is getting allocated time for VGCs within the clinical day'*(P33\_GP). Other barriers were associated with the wider practice, in which there was *'no time for planning recall of patients'*(P03\_ACP/ANP), *'a lack of investment in staff who are able to do the VGC'*(P14\_GPN) and *'getting certain members of the practice on board'*(P04\_GP). A lack of training thus impacted on HCPs confidence, making buy-in a challenge.

Uptake of VGCs was reported as a significant challenge by participants. A number of responses related to the recruitment of participants, with several participants stating *'our local population was 'zoomed' out and haven't taken up the opportunity for video GCs as enthusiastically as they took up the invitation for F2F GCs'*(P31\_GP). Another participant noted *'some patients are pro VGCs, as they see it is a time saver'*(P36\_SP) whilst *'others prefer in-person, as they like the companionship of others'*(P34\_GP). Face-to-face vs. a virtual approach was one reason for the poor uptake from patients as, *'we are planning to run a pre-diabetic VGC but are debating this in-person rather than tech as our patients*

*appear to prefer in-person options'(P30\_SP). Also, uptake was dependent on a preference of a group vs. individual approach, as one participant noted that it was 'slow starting to get the numbers for our group consultations as still offering 1:1'(P10\_ACP/ANP) but 'some love and some prefer individual input'(P08\_GPN). Buy-in and uptake is therefore dependent on patient engagement and acceptance of a new consultation model. One participant stated 'attendance has been a huge issue – we will often recruit 8 or so patients but none will attend after multiple reminders'(P09\_HC). Some related the low uptake of patients to access issues, with participants highlighting that 'patients frequently declined on the basis of availability'(P20\_AHP) and 'only one VGC date was confirmed at a time with no indication of the next'(P20\_AHP).*

A large proportion of participants (n=18) further highlighted the need for successful workforce planning around VGCs, dependent on planning (n=3), time (n=4), availability and scheduling (n=7), training (n=2) and administrative support (n=2). This was often coupled with the lack of investment as one participant expressed, '*[I] wish I had more protected time'(P32\_PM)*, and therefore requiring greater practice investment, support and resources.

Technology was reported to be the second largest barrier to the use of VGCs (22%), with regards to patient and staff digital literacy (n=4), the technology itself (n=9), digital exclusion including patient access to technology (n=2), I.T access (n=4), the impact of COVID-19 (n=1), being '*zoomed out* (n=1) and confidence with technology (n=1). In particular, it was noted that the '*older population rejecting the idea of "new found" tech'(P05\_GPN)* and related to a high 'Did Not Attend' rate. One participant stated, '*while most pts have access to a compatible device,*

*many lack confidence in technological ability and declined or come into difficulties joining or during the VGC'(P20\_AHP). Staff believed that 'the technology [is] still not mature enough'(P15\_GP) to deal with newer ways of working, ultimately leading to a lack of confidence in systems which contribute to this new consultation model.*

Lack of sustainability was a reported challenge of VGCs with regards to newer ways of working and a reliance on alternative consultation styles. One participant described *'primary care being "stuck in a rut"'(P01\_GP), as practices are 'too busy to innovate', 'GDPR stifling innovation'(P01\_GP), and there is a 'lack of funding to do things differently'(P01\_GP). Another participant described sustainability is dependent on a 'culture shift'(P28\_GP).*

Underpinning each of the barriers presented is the operationalisation and understanding of what a VGC is. Many participants expressed uncertainties about the role of the approach and how it can be used in everyday practice. One participant argued that both patients and staff *'need time to explain why this could be beneficial'(P28\_GP) in grasping a more-informed perception of the approach.*

Table 27: Frequency and percentage of individual survey responses to each content analysis code category for question 'Have you found any barriers or challenges in the uptake and use of video group consultation?'

Code category	Code description	Example of coded units	N	%
Technology	Technological platforms such as video-conferencing platforms	<p><b>'technology'</b>(P20_AHP) (technology)</p> <p><b>'technological difficulties'</b>(P05_GPN) (technology)</p> <p><b>'the technology (bandwidth hardware) still not mature enough'</b>(P15_GP) (technology)</p> <p><b>'some struggle with accessing IT required'</b>(P34_GP) (patient and staff digital literacy)</p> <p><b>'digital exclusion'</b>(P27_NC) (digital exclusion)</p> <p><b>'IT at times'</b>(P11_ACP/ANP) (it access)</p> <p><b>'our population was 'zoomed' out and haven't taken up the opportunity for video GCs as enthusiastically as they took up the invitation for F2F GCs'</b>(P31_GP) ('zoomed out')</p> <p><b>'my own personal barriers in terms of tech'</b>(P12_GPN) (confidence with technology)</p> <p><b>'older population rejecting the idea of "new found" tech'</b>(P05_GPN) (patient access to technology)</p> <p><b>'patient uncertainty regarding IT'</b>(P02_AHP) (patient access to technology)</p> <p><b>'covid work'</b>(P18_GP) (covid)</p>	22	22
Uptake	The action of taking or making use of an intervention	<p><b>'not leaving sufficient time between VGCs to recruit sufficient numbers'</b>(P20_AHP) (recruitment)</p> <p><b>'people not turning up'</b>(P07_GPN) (high did not attend rates)</p> <p><b>'attendance has been a huge issue'</b>(P09_HC) (high did not attend rates)</p>	36	36

Code category	Code description	Example of coded units	N	%
		<p><b>'we will often recruit 8 or so patients but not will attend after multiple reminders'</b>(P09_HC) (high did not attend rates)</p> <p><b>'DNA rate approx. 50% for each VGC'</b>(P20_AHP) (high did not attend rates)</p> <p><b>'slow starting to get the numbers for our group consultations as still offering 1:1'</b>(P10_ACP/ANP) (low patient uptake)</p> <p><b>'poor uptake with patients in spite of reminders'</b>(P35_GP) (low patient uptake)</p> <p><b>'getting patients to engage with this method'</b>(P08_GPN) (patient buy-in)</p> <p><b>'acceptance of patients was low to begin with'</b>(P16_GP) (patient buy-in)</p> <p><b>'from patients and staff who cling to more traditional ways of working'</b>(P24_GP) (patient buy-in)</p> <p><b>'changing perceptions of group consultations and challenging doubters'</b>(P21_ACP/ANP) (challenging doubters)</p> <p><b>'patients frequently declined on the basis of availability'</b>(P20_AHP) (availability of patients)</p> <p><b>'reluctance for certain clinicians to engage'</b>(P28_GP) (reluctance of clinicians)</p> <p><b>'lack of interest from both clinicians and patients'</b>(P15_GP) (lack of interest)</p> <p><b>'patient resistance to new consultation method'</b>(P04_GP) (patient resistance)</p> <p><b>'team buy in'</b>(P02_AHP) (staff and practice buy-in)</p> <p><b>'not everyone being on board'</b>(P03_ACP/ANP) (staff and practice buy-in)</p> <p><b>'from patients and staff who cling to more traditional ways of working'</b>(P24_GP) (staff and practice buy-in)</p> <p><b>'inviting patients due to demographics'</b>(P30_SP) (patients demographics)</p> <p><b>'lack of confidence'</b>(P26_ACP/ANP) (lack of confidence)</p> <p><b>'they see it as a time saver'</b>(P36_SP) (time-saving)</p>		



Code category	Code description	Example of coded units	N	%
		<b>'no time for planning recall of pts'</b> (P03_ACP/ANP) (no time to plan recall of patients)		
<b>Workforce planning</b>	The process of ensuring the workforce has the necessary capacity to perform effectively	<b>'patients frequently declined on the basis of availability'</b> (P20_AHP) (availability) <b>'times and availability of times'</b> (P19_GP) (scheduling of VGCs) <b>'making time to plan'</b> (P25_GP) (making time to plan) <b>'time'</b> (P13_GP, P29_GP, P14_GPN, P18_GP) (time) <b>'no admin support to call plans'</b> (P03_ACP/ANP) (administration) <b>'no time for planning recall of pts'</b> (P03_ACP/ANP) (planning) <b>'making time to plan'</b> (P25_GP) (planning) <b>'training for facilitators'</b> (P01_GP) (training) <b>'staff training and availability is a huge challenge'</b> (P33_GP) (training)	18	18
<b>Sustainability</b>	The ability to maintain or support a process continuously over time	<b>'lack of funding to do things differently'</b> (P01_GP) (lack of sustainability) <b>'new ways of working'</b> (P01_GP) (alternative consultation styles) <b>'from patients and staff who cling to more traditional ways of working'</b> (P24_GP) (alternative consultation styles) <b>'primary care being 'stuck in a rut''</b> (P01_GP) ('stuck in a rut') <b>'too busy to innovate'</b> (P01_GP) (too busy to innovate) <b>'GDPR stifling innovation'</b> (P01_GP) (gdpr stifling innovation) <b>'lack of funding to do things differently'</b> (P01_GP) (lack of funding) <b>'need culture shift'</b> (P28_GP) (need for culture shift)	9	9
<b>Investment</b>	The act of devoting time, effort, and funding to an intervention or process	<b>'time – wish I had more protected time'</b> (P32_PM) (protected time) <b>'lack of investment for staff who are able to do the VGC'</b> (P14_GPN) (practice support for a facilitator) <b>'buy in from practice for facilitator'</b> (P12_GPN) (practice support for a facilitator)	3	3

Code category	Code description	Example of coded units	N	%
		<b>'resources to run the VGCs (e.g. admin processes)'</b> (P27_NC) (resources required for VGCs)		
Operationalisation	Defining how a concept is measured	<b>'ability to communicated effectively with patients around the concept'</b> (P01_GP) (sensemaking of VGCs) <b>'patient and staff understanding'</b> (P06_GP) (sensemaking of VGCs) <b>'some love and some prefer individual input'</b> (P08_GPN) (individual vs. group) <b>'slow starting to get the numbers for our group consultations as still offering 1:1'</b> (P10_ACP/ANP) (individual vs. group) <b>'some people would prefer face to face'</b> (P34_GP) (face-to-face vs. virtual) <b>'others prefer in-person, as they like the companionship of others'</b> (P36_SP) (face-to-face vs. virtual) <b>'our patients prefer in person options'</b> (P30_SP) (patient preference of in-person or virtual)	12	12
			<b>100</b>	

### 6.3.12 Training and skills for VGCs

Participants were asked *'what skills/training do you think are needed to deliver a video group consultation, if any?'* in which a number of training needs were identified by several participants, including the need for formal training to get VGCs up and running (Table 28). Largely, facilitation skills, including the ability to facilitate a group session (n=9), manage group dynamics (n=1) and challenging circumstances (n=1) were an important skill set to learn. One participant stated *'someone who understands the tech and can act as a master of ceremonies'*(P19\_GP) is needed to deliver a VGC. However, facilitation skills (n=32) were considered more broadly, in terms of presentation skills (n=3), IT skills (n=6), digital literacy (n=2), coaching skills (n=3), group management skills (n=11), communication skills (n=5), administration skills (n=1), and a variety of content to ensure adaptability (n=1). Five participants listed the need for facilitator training and increased *'IT literacy for when things go wrong'*(P08\_GPN). Although, another participant argued *'time needs to be given so clinicians can understand the benefits'*(P28\_GP) and thus make sense of the skills and training needed to deliver a VGC.

The second most reported category was related to the characteristics required by HCPs to deliver a VGC. These included *'confidence to discuss with a group of people'*(P03\_ACP/ANP), *'empathy'*(P09\_HC), *'patience'*(P09\_HC), *'approachability'*(P32\_PM), *'enthusiasm'*(P32\_PM), *'adaptability'*(P12\_GPN), being *'personable'*(P20\_AHP), being *'engaging'*(P20\_AHP), having *'emotional intelligence'*(P20\_AHP), *'thinking outside the box'*(P27\_NC), *'the ability to motivate and inspire'*(P20\_AHP), *'time management'*(P20\_AHP), *'problem*

*solving'*(P27\_NC), *'good consultation skills'*(P03\_ACP/ANP) and *'a sense of humour'*(P21\_ACP/ANP). In addition, another participant stated that *'most people working in primary care already have the necessary skills'*(P06\_GP). Yet, the importance of this category in relation to the data establishes the need for HCPs to demonstrate these set of characteristics in the uptake and use of VGCs in primary care.

Formal training (n=22) was highlighted by a large number of participants as a necessary requirement for the delivery of VGCs. This included formal training on consent (n=1), general VGC training (n=4), facilitation (n=5), confidentiality (n=1), IT training (n=4), patient access (n=1), trainer skills (n=1) and stakeholder engagement (n=1). The need for on-going support and accreditation (n=1), as well as online assistance (n=1) and technology support (n=2) was also highlighted. One participant stated VGCs *'can be easily done without the training too'*(P35\_GP), in which another participant stated that *'I think the best training is to 'just do it''*(P31\_GP).

Sense-making of VGCs was also highlighted by a number of participants, in which understanding and belief in the model was achieved by *'having lots of run throughs and an awareness of all aspects'*(P30\_SP), as well as *'showing how others are run'*(P07\_GPN) to develop a greater understanding of the approach. Staff buy-in and their understanding of the approach aided sense-making which helped some participants adapt training *'to our very diverse patient group'*(P14\_GPN). This understanding provides greater knowledge necessary for future training on VGCs.

Consultation skills (n=7) was developed as a code category for the necessary skills/training for VGCs. Consultation skills as a concept in itself (n=2) was highlighted by a number of participants, with the ability to have adaptable consultation techniques (n=1), strong peer support (n=1), a knowledge base of conditions (n=2), and a knowledge of mental health and well-being (n=1). However, one participant echoed that *'otherwise normal clinical skills to do a long-term condition review'*(P22\_ACP/ANP) and did not require further consultation skills to deliver a VGC.

Table 28: Frequency and percentage of individual survey responses to each content analysis code category for question 'What skills/training do you think are needed to deliver a video group consultation, if any?'

Code category	Code description	Example of coded units	N	%
<b>Facilitation skills</b>	Skills which demonstrate facilitation	<i>'facilitation and small group skills' (P04_GP)</i> (group facilitation skills) <i>'facilitation skills' (P08_GPN)</i> (group facilitation skills) <i>'managing group dynamics' (P08_GPN)</i> (managing group dynamics) <i>'managing challenging clients' (P26_ACP/ANP)</i> (managing challenging dynamics) <i>'presenting skills' (P20_AHP)</i> (presentation skills) <i>'IT skills' (P16_GP)</i> (it skills) <i>'variety in content' (P19_GP)</i> (variety in content) <i>'coaching' (P36_SP)</i> (coaching skills) <i>'coaching skills' (P04_GP)</i> (coaching skills) <i>'coaching skills are useful' (P34_GP)</i> (coaching skills) <i>'communication' (P12_GPN, P02_AHP, P20_AHP)</i> (communication skills) <i>'communication skills' (P03_ACP/ANP, P02_AHP)</i> (communication skills) <i>'good communicator' (P27_NC)</i> (communication skills) <i>'IT literacy for when things go wrong' (P08_GPN)</i> (it literacy) <i>'someone who can understand the tech and can act as master of ceremonies' (P19_GP)</i> (it literacy) <i>'admin' (P27_NC)</i> (administration)	32	33
<b>Consultation skills</b>	Skills demonstrated in running a consultation	<i>'Good consultation skills' (P03_ACP/ANP)</i> (consultation skills) <i>'otherwise normal clinic skills to do a long-term condition review' (P22_ACP/ANP)</i> (consultation skills)	7	7.2

Code category	Code description	Example of coded units	N	%
		<p><b>'adaptable consultation techniques'</b>(P21_ACP/ANP) (adaptable consultation techniques)</p> <p><b>'a knowledge of mental health &amp; wellbeing'</b>(P09_HC) (a knowledge of mental health and well-being)</p> <p><b>'some specialism in the area doing VGC in e.g. diabetes'</b>(P10_ACP/ANP) (knowledge base of conditions)</p> <p><b>'good knowledge base in the subject'</b>(P34_GP) (knowledge base of conditions)</p> <p><b>'passionate clinical participants'</b>(P19_GP) (peer support)</p>		
Characteristics	A quality or feature regarded as an inherent part of someone or something	<p><b>'empathy'</b>(P09_HC) (empathy)</p> <p><b>'patience'</b>(P09_HC) (patience)</p> <p><b>'patience with IT difficulties'</b>(P03_ACP/ANP) (patience)</p> <p><b>'people skills to move session along by polite interruption'</b>(P30_SP) (approachability)</p> <p><b>'enthusiastic'</b>(P20_AHP) (enthusiasm)</p> <p><b>'enthusiasm'</b> (P32_PM) (enthusiasm)</p> <p><b>'confidence'</b>(P12_GPN, P06_GP, P22_ACP/ANP, P21_ACP/ANP) (confidence)</p> <p><b>'confidence to discuss with a group of patients'</b>(P03_ACP/ANP) (confidence)</p> <p><b>'adaptability'</b>(P12_GPN) (adaptability)</p> <p><b>'we adapted to out very diverse patient group'</b>(P14_GPN) (adaptability)</p> <p><b>'being able to adapt'</b>(P27_NC) (adaptability)</p> <p><b>'personable'</b>(P20_AHP) (personability)</p> <p><b>'belief in the consultation style'</b>(P03_ACP/ANP) (engagement)</p> <p><b>'engaging'</b>(P20_AHP) (engagement)</p> <p><b>'emotionally intelligent'</b>(P20_AHP) (emotional intelligence)</p> <p><b>'ability to motivate and inspire'</b>(P20_AHP) (ability to motivate and inspire)</p>	27	27.8

Code category	Code description	Example of coded units	N	%
		<i>'being able to think outside the box'</i> (P27_NC) (creativity) <i>'problem solving'</i> (P27_NC) (problem solving) <i>'sense of humour'</i> (P21_ACP/ANP) (sense of humour) <i>'project management'</i> (P27_NC) (project management) <i>'time management'</i> (P30_SP) (time management) <i>'most people working in primary care have the necessary skills'</i> (P06_GP) (most people working in primary care have the necessary skills)		
<b>Sense-making of VGCs</b>	The action or process of making sense or giving meaning to something	<i>'having lots of run throughs'</i> (P30_SP) (practice attempts at running a VGC) <i>'I think the best training is to 'just do it'</i> (P31_GP) (the best training is to 'just do it') <i>'showing how others are run'</i> (P07_GPN) (examples of running a VGC) <i>'overview of principles'</i> (P29_GP) (overview of principles) <i>'awareness of all aspects'</i> (P30_SP) (sense-making) <i>'time needs to be given so clinicians can understand the benefits'</i> (P28_GP) (staff buy-in)	8	8.2
<b>Formal training</b>	Process in which an individual is taught through scheduled learning sessions	<i>'it can be easily done without training to'</i> (P35_GP) (formal training) <i>'formal training [on] consent'</i> (P18_GP) (formal training on consent) <i>'facilitator training'</i> (P01_GP, P10_ACP/ANP) (facilitator training) <i>'how to facilitate a session'</i> (P23_SP) (facilitator training) <i>'it was useful to have the training of flow'</i> (P35_GP) (facilitator training) <i>'there is a very lengthy confidentiality bit and checking privacy options at the beginning which is necessary but not a nice welcome to the session'</i> (P30_SP) (confidentiality training) <i>'training around IT'</i> (P24_GP) (it training) <i>'training on the technical side was very helpful'</i> (P30_SP) (it training) <i>'stakeholder engagement training'</i> (P27_NC) (stakeholder engagement training)	22	22.6



Code category	Code description	Example of coded units	N	%
		<i>'on-going support/accreditation'</i> (P01_GP) (on-going support and accreditation) <i>'online support'</i> (P11_ACP/ANP) (online support) <i>'how to access a session'</i> (P23_SP) (patient access) <i>'trainer skills'</i> (P27_NC) (trainer skills) <i>'training in delivery'</i> (P11_ACP/ANP) (technology support)		
Miscellaneous	Other response	<i>'none'</i> (P05_GPN) (none)	1	1
			<b>97</b>	

Table 29: Training in VGCs

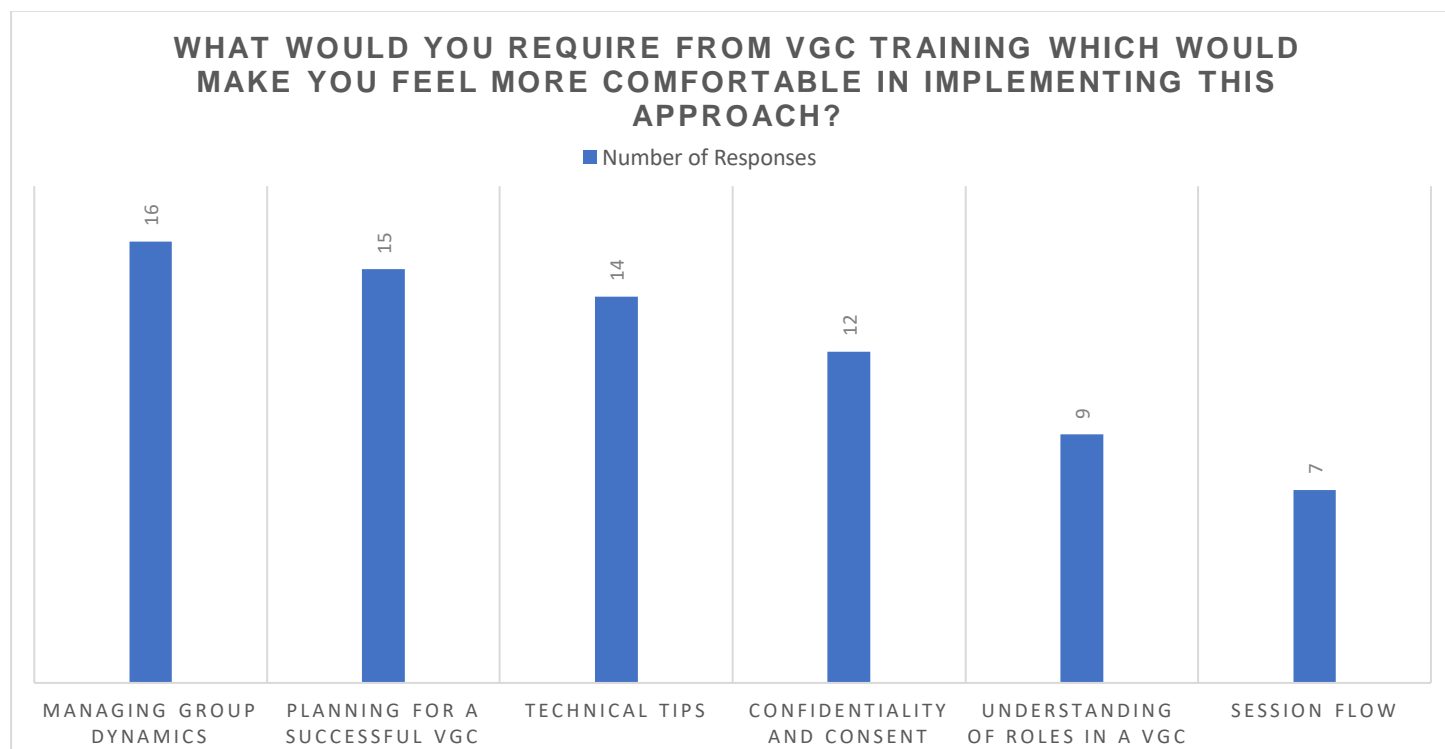
	Participants
	All n = % 36 (100%)
<b>Have you been involved in a formal training session for delivering video group consultations?</b>	
<b>Yes</b>	24 (66.6)
<b>No</b>	12 (33.3)
Training providers used: <ul style="list-style-type: none"> <li>• Redmoor Health</li> <li>• ELC Works – The Experience Led Care Programme</li> <li>• The British Society of Lifestyle Medicine – groupconsultations.com</li> <li>• Maudsley Learning Trust (Group Consultations)</li> <li>• Howbeck Healthcare</li> </ul>	
<b>Do you know how many of your practice staff have been trained in video group consultations?</b>	
<b>0</b>	7 (19.4)
<b>1-3</b>	14 (38.8)
<b>4-7</b>	8 (22.2)
<b>8-10</b>	3 (8.3)
<b>10+</b>	1 (2.7)
<b>Not sure</b>	3 (8.3)
<b>Would you want to engage with formal training on video group consultations?</b>	
<b>Yes</b>	16 (44.4)
<b>No</b>	12 (33.3)
<b>Maybe</b>	8 (22.2)

Table displays frequency and column percentages

The majority of participants (66.6%) had been involved in a formal training session for VGCs (Table 29). Only 12 participants (33.3%) had not received formal VGC training.

Participants were asked to identify how many of their practice staff had been trained in VGCs (Table 29). Around one to three staff was the most common answer provided (38.8%). A range of responses were provided across all categories. Seven participants stated zero HCPs had been trained, eight participants stated four to seven staff members have been trained and three participants stated eight to ten staff members had engaged with formal training. Only one participant (2.7%) stated over ten staff members were trained in VGCs.

The questionnaire asked participants to state whether they would want to engage with formal training on VGCs (Table 29). Participants were asked to choose one answer. Around half of participants (44.4%) stated they would like to engage with formal training in VGCs, compared with twelve participants (33.3%) stating they would not, and eight participants stating 'Maybe' (22.2%).



*Figure 27: Requirements from VGCs training to enable implementation*

The question of *'What would you require from video group consultation training which would make you feel more comfortable in implementing this approach?'* was structured to identify the components of the national VGC training programme (e-Learning for Healthcare, 2021) (Figure 27). The largest number of responses detailed 'Managing Group Dynamics' (n=16), closely followed by 'Planning a Successful VGC' (n=15), 'Technical Tips' (n=14) and 'Confidentiality and Consent' (n=12). 'Session Flow' was only identified by seven participants, and 'Understanding Roles in a VGC' was chosen by nine participants.

If participants selected '*Other*' as a response, they were asked to provide further information in relation to the question (Table 30). The majority of participants responded by expressing the management of changing dynamics (n=5), including the shift from face-to-face to virtual consultation models (n=1), patient buy-in of the approach (n=2), and staff promotion (n=1). One participant stated that *'it's not so much the logistics of running one, its more about recruiting people who will actually commit to attending'*(P30\_SP), due to the changes in dynamic between a virtual group session and an in-person group consultation. Feeling comfortable enough to implement the approach was not just dependent on training but managing the dynamics between a virtual and in-person approach, as *'it is a different dynamic to use (perhaps why we are thinking of doing more face-to-face as the dynamics are preferable in a group setting)'*(P30\_SP).

Although the question asked specifically about the requirements of VGC training, many participants shifted the focus to *'getting buy-in from patients'*(P22\_ACP/ANP) and *'increasing attendance'*(P07\_HC). This was also highlighted by the code category of preparation (n=5).

Preparation for the approach was considered to be a key requirement of VGC training, referring to attendance (n=1), recruitment (n=1), funding (n=1), administration (n=1), and presenting skills (n=1) needed for implementation and delivery. One participant highlighted the importance of ensuring *'backfill monies for staff to promote and encourage patients to attend'*(P32\_PM).

Whilst 'Measuring Outcomes' was not the most frequently listed category, the importance of measuring outcomes was highlighted by a participant, to recognise that VGC training aids practices and individuals in both evaluating and sustaining the approach.

Table 30: Frequency and percentage of individual survey responses to each content analysis code category for question 'What would you require from VGC training which would make you feel more comfortable in implementing the approach?'

Code category	Code description	Example of coded units	N	%
<b>Changing dynamics</b>	Change from one dynamic to another	<i>'it's a different dynamic to use'</i> (P30_SP) (changing dynamics) <i>'we are thinking of doing more face-to-face as the dynamics are preferable in a group setting'</i> (P30_SP) (face-to-face vs. virtual) <i>'getting buy-in from patients'</i> (P22_ACP/ANP) (patient buy-in) <i>'backfill monies for staff to promote'</i> (P32_PM) (staff promotion)	5	45.4
<b>Preparation</b>	The action or process of preparing or being prepared for use	<i>'it's more about recruiting people who will actually commit to attending'</i> (P30_SP) (recruitment) <i>'increasing attendance'</i> (P07_HC) (attendance) <i>'backfill monies for staff to promote'</i> (P32_PM) (funding) <i>'presenting skills'</i> (P13_GP) (presenting skills) <i>'how to automate admin processes'</i> (P27_HC) (administration)	5	45.4
<b>Measuring outcomes</b>	A measurement of outcome or process measures	<i>'measuring outcomes'</i> (P19_GP) (measuring outcomes)	1	9
			<b>11</b>	

### **6.3.13 Abstraction of results**

Abstraction is concerned with generating a general description of the research topic through categorisation (Polit & Beck, 2006). Categorisation is based on content-characteristic words. Subcategories are grouped together as generic categories and generic categories are grouped together as main categories (Elo & Kyngäs, 2008). Abstraction thus provides an overall description of the inclusion of sub-categories, generic categories and main categories, aiding a move from specific concepts to a more general interpretation of the dataset. The abstraction process is demonstrated in Figure 28 and Figure 29, which aided the visual interpretation and interaction between coded categories to highlight key findings across the data set.



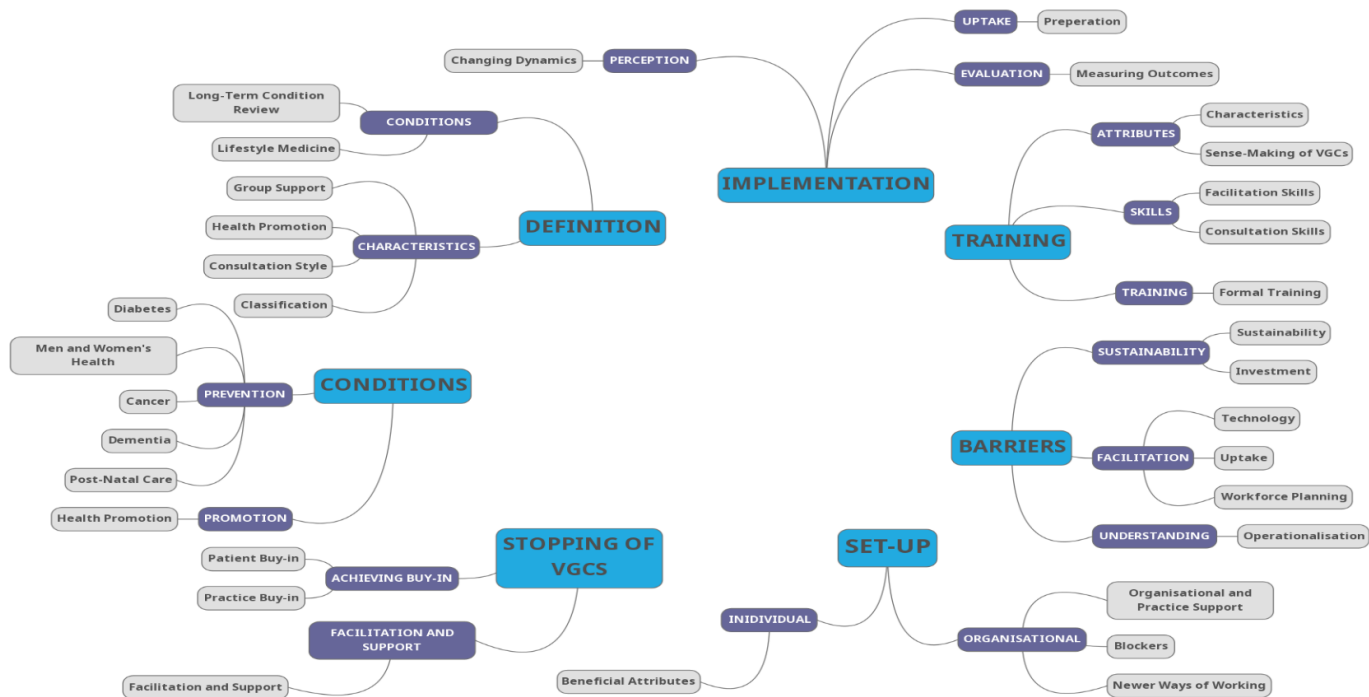


Figure 28: Content Analysis abstraction mapping - main categories, generic categories and sub categories (Elo & Kyngäs, 2008)

## **6.4 Discussion**

This discussion considers the findings of this chapter, comparing the results to previous research and identification of the methodological strengths and weaknesses.

### **6.4.1 Summary of main findings**

This chapter has presented the findings from a cross-sectional survey of HCPs working in general practice.

Four key findings were taken from the inductive content analysis:

1. Definition and use of VGCs
2. Staff and patient motivations for VGCs
3. Workload and practice priorities
4. Using existing and pre-existing networks to sustain VGCs

Categorisation of codes related to the key findings are presented in Figure 29.

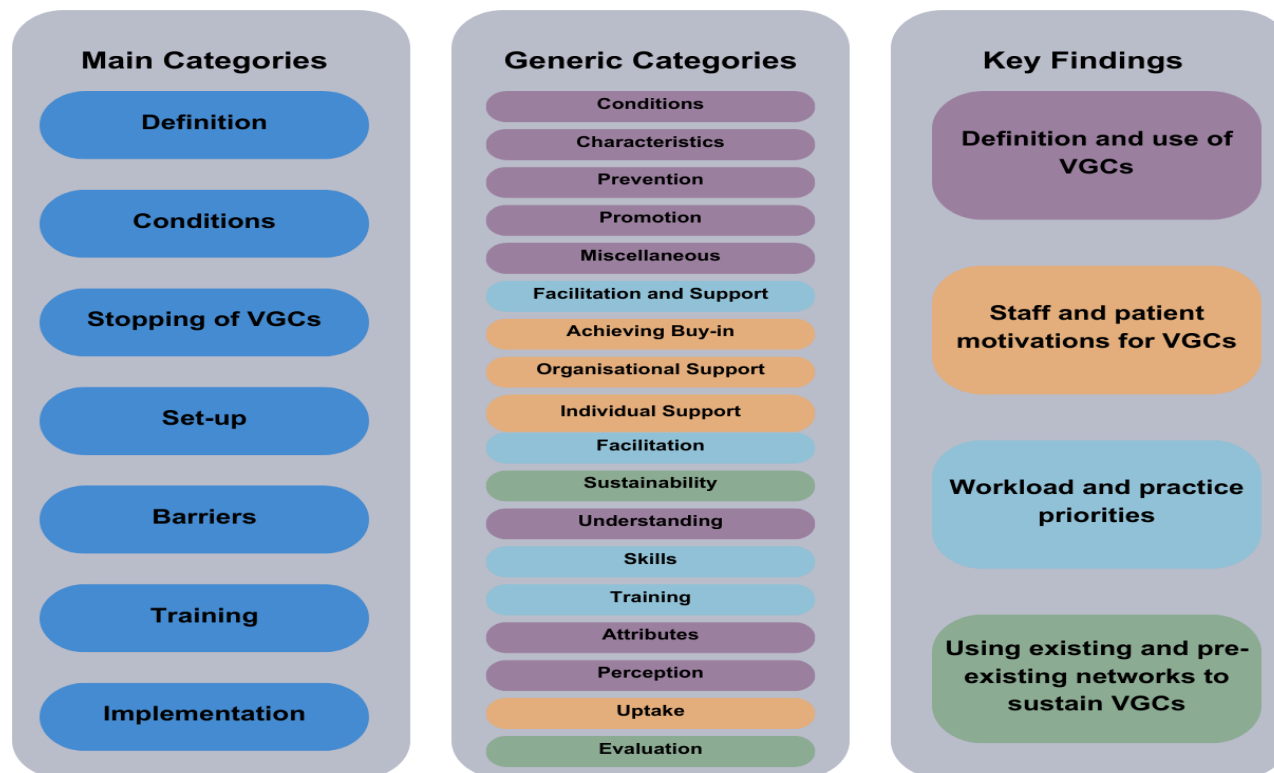


Figure 29: Categorisation of codes in relation to key findings

#### 6.4.1.1 Definition and use of VGCs

A number of key findings related to the definition and use of VGCs in primary care general practice. This builds upon the results of Chapter 3, with the need to provide a coherent and understandable definition of the scope of VGCs to enable successful implementation into practice. This chapter necessitates providing a definition of VGCs, as well as determining the scope of use for this approach.

Definitions regarding the use and purpose of VGCs extended from the terminology used to determine the scope of practice, including the conditions using the approach. With regards to the terminology, the terms '*video group consultation*' and '*video group clinic*' were used interchangeably, but often referred to a different set of practices. Those participants who used the term '*video group consultation*' referred to annual LTC reviews, based on QOF outcomes. These were determined as annual reviews, as a replacement for the usual one-to-one face-to-face consultation. LTCs managed through this approach included diabetes, weight management, cardiovascular conditions, asthma and cancer. However, those participants who used terms such as '*video group clinic*' or '*group therapy*' referred to lifestyle programmes and regular, periodic, support sessions. These sessions refer to a range of group support sessions such as for patients experiencing loneliness, anxiety and depression, as well as a means to provide exercise classes. The lack of clarity in terminology demonstrated considerable effect on the scope of VGCs and use in practice.

However, the data suggested that the use and definition of VGCs was usually dependent on organisational priorities and funding. Several

participants noted that VGCs were provided for particular cohorts of patients, which the practice supported as a way to offer targeted support to these individuals. However, one participant highlighted that VGCs are delivered based on a choice of condition by patients.

A further finding related to the use and definition of VGCs is concerned with the identification of healthcare roles involved in managing and delivering the approach in primary care general practice. Ambiguity surrounding whose responsibility it is to deliver a VGC, due to lack of definition, meant HCPs were uncertain about where this intervention 'sits' in their daily practice. Dependent on the definition and use of VGCs requires different HCPs to be involved, for example, a VGC regarding lifestyle medicine may necessitate a health coach.

The lack of definition and standardisation, in terms of terminology and scope of practice is of critical importance. Due to the novelty of the approach and the lack of widespread implementation has meant that practices have utilised VGCs to meet practice demand and organisational priorities. This has caused increased fluidity in practice and therefore demonstrates difficulties with regards to implementation of the approach.

#### **6.4.1.2 Staff and patient motivations for VGCs**

Staff and patient motivations for VGCs was considered to be a key finding in relation to the uptake and use of the approach. Many VGC programmes were not continued after the programme had ended, as the individual running the programme left and others ran with no indication of the next.

Several participants described difficulties with changing perceptions of VGCs, as certain clinicians are unwilling to engage. These participants referred to individual attributes which demonstrate willingness to engage with VGCs, as well as having the necessary skills and training required. Facilitation skills were deemed as of primary importance to their role in facilitating a VGC, whilst some participants echoed a change of consultation skills, such as adaptable consultation techniques to review and assess a group of patients using a virtual platform.

Whilst the survey focused on the views of HCPs, several participants stated that patient uptake was key to the lack of use of VGCs in general practice. Patients were perceived to have experienced fatigue with virtual consultation methods and issues with digital technologies, affecting motivation and attendance. Availability was a significant issue as patients often declined consultations as 'could not attend' when the group was running. Patient preference of a one-to-one vs. group and a face-to-face vs. virtual approach was also apparent, as many rejected VGCs as an alternative or replacement to their usual consultation methods.

#### **6.4.1.3 Workload and practice priorities**

Workload and practice priorities were key to the set-up and delivery of the approach. Facilitation and support from the practice was considered as the main reason why practices stopped delivering VGCs, due to lack of clinical, administrative and technological support, adequacy of resources, time and additional workload. Delivery thus requires 'team buy-in' due to the complexities and practicalities surrounding implementation of the approach.

Several participants identified the idea of workforce planning, with emphasis put on time, forward planning, scheduling, training and administrative support. However, this did not necessarily coincide with commissioning and investment in staff, making it difficult to set-up and run. This extended to the value placed on VGCs by the practice with regards to the need for training, in which many participants expressed the need for formal training prior to delivering the approach. Many participants also expressed hesitancy regarding digital technologies, in which the primary care systems are not mature enough to deal with newer ways of working.

The lack of organisational support and practice commitment necessary requires an exploration of this finding in relation to the implementation and impact of VGCs in primary care general practice (Chapter 7; Chapter 8).

#### **6.4.1.4 Using existing and pre-existing networks to sustain VGCs**

Sustainability of the approach was referred to across the data set, regarding the challenges with newer ways of working. The current context of primary care necessitates the need for alternative ways of working, yet increased pressures faced in general practice and lack of funding, hinders the ability to initiate change. Commissioning support was therefore dependent on the need for VGCs and organisational priorities.

Many participants also referred to using existing and pre-existing networks to sustain VGCs, including those practices who have become experts in delivering the approach. Liaising with formal training providers

ensured adequacy of training and using pre-established consultation models, helped to structure VGCs. Much of the evaluation of VGCs has also been conducted by trainers of VGCs or is managed at a practice level. A few participants identified the need for whole team buy-in rather than an individual champion in sustaining the approach due to the complexities surrounding the current context of primary care.

#### **6.4.2 Comparison with implementation theories**

##### **6.4.2.1 Normalisation Process Theory (May & Finch, 2009; May et al., 2015; May et al., 2018)**

Normalisation Process Theory [NPT] is a middle-range sociological theory that is used to understand, develop and evaluate complex interventions in improving health and healthcare, with the objective of routinely incorporating complex interventions into everyday practice (May et al., 2018; Murray et al., 2010). It provides *‘a set of sociological tools to understand and explain the social processes through which new or modified practices of thinking, enacting, and organising work are operationalised in healthcare and other institutional settings’* (May & Finch, 2009, p.2).

Applying NPT to practice helps to explore the relationship between the constructs proposed and real implementation and evaluation problems. NPT has been used in a wide variety of studies, including clinical trials, survey methods, systematic reviews and as a conceptual framework for qualitative studies (May et al., 2015). It has also been used to inform research design and/or methodologies (May et al., 2015). NPT was



originally used to evaluate e-health and tele-health interventions, but this has spread to include a diverse range of health-related interventions (Huddleston et al., 2020; McEvoy et al., 2014).

NPT is considered to be a theory of action focused on implementation, referring to the actions of individuals rather than their beliefs or intentions (May & Finch, 2009; May et al., 2018). Underpinning NPT is the idea that normalisation is achieved when a complex intervention is not considered to be additional but routinised into normal everyday practice, valuing the interplay between individuals, mechanisms and contexts (Finch et al., 2012; Murray et al., 2010). The recognition of how stakeholders understood, made sense of practice and engaged with the implementation of complex interventions is of significant value to NPT, distinct from the previously established version of Normalisation Process Model (Huddleston et al., 2020). Therefore, NPT is an elaborated theory in which the features of context and the intervention could influence the viability of individuals work to normalise complex interventions into practice (Huddleston et al., 2020).

NPT thus focuses on three core problems of, i) implementation, whereby the social organisation of bringing a practice or practices into action; ii) embedding, by which the processes which a practice or practices become (or do not become) routinised into everyday practice; and iii) integration, whereby the processes of a practice or practices are reproduced and sustained by an organisation or institution (May & Finch, 2009; May et al., 2009).

The identification of these core problems led to the development of three propositions, including:

- i) Practices become routinely embedded or normalised in institutions or organisation as a direct result of individuals working both individually and collectively to achieve this
- ii) The work of implementation is understood and conceptualised through four mechanisms (coherence, cognitive participation, collective action, reflexive monitoring)
- iii) The sustainability of a practice is dependent on the production and reproduction by continuous investment by individuals in ensembles of action that are carried forward in time and space  
(May et al., 2009)

NPT consists of four key constructs: i) Coherence, ii) Cognitive Participation, iii) Collective Action, and iv) Reflexive Monitoring (May et al., 2015) (Figure 30).

**Coherence** (sense-making work) – relates to the ‘sense-making’, aiding operationalisation of a new set of practices or an intervention. This involves conceptualising the similarities and differences of the intervention in practice, the responsibilities involved and the value the intervention has individually and collectively.

Additional components of the coherence construct include:

*differentiation, communal specification, individual specification, and internalisation*

**Cognitive Participation** (relational work) – concerns the relational work to build and sustain a new intervention in practice. Successful implementation requires planning and preparation of the approach, with the need to champion the intervention at an individual and communal level.

Additional components of the cognitive participation construct include:

*initiation, enrolment, legitimation, and activation*

**Collective Action** (operational work) – reflects the interactional work of individuals in engaging with and operationalising concepts for implementation into every day practice.

Additional components of the collective action construct include:

*interactional workability, relational integration, skill-set workability, and contextual integration*

**Reflexive Monitoring** (appraisal work) – is concerned with the formal or informal collective work of individuals to evaluate practices, agreeing on the effectiveness or usefulness of an intervention, questioning the need for further modification to the intervention, and the subsequent impact on individuals and teams.

Additional components of the reflexive monitoring construct include:

*systematisation, communal appraisal, individual appraisal, and reconfiguration*

Figure 30: The constructs of NPT (May et al., 2015)

Each of these constructs denote the process of social interaction involved in the routine embedding of an intervention, with regards to the factors which facilitate or impede implementation and the relationship of the individual and/or the collective to the intervention (May et al., 2015).

However, despite these constructs, NPT does not offer a definition of the term 'normalisation', as it can only be used to refer to a process or state, dependent on context and the frame of reference. Normalisation is concerned with an on-going cycle of activity, aimed in routinising a new practice by individuals into their context of practice. Only when a new intervention requires no additional effort, it is considered to be 'normalised'. However, further works needs to develop ways of operationalising and measuring outcomes of efforts to implement new practice, reflective of their complexity and context-dependent nature.

#### **6.4.2.2 Discussion of key findings related to NPT**

On reflection, the findings reported in this chapter can be discussed in relation to the constructs proposed by NPT and can be used as a lens for interpretation of data amongst the existing literature and the associated complexities surrounding implementation (Haynes & Loblay, 2024; May et al., 2018; Murray et al., 2010) (Figure 31). Hsieh & Shannon (2005) state that *'with a conventional approach to content analysis, relevant theories or other research findings are addressed in the discussion section of the study'* (p.1279). A number of research papers have used NPT (May et al., 2018), as a lens of discussion after the analysis has been completed (Saunders et al., 2020; Saunders, Chudyk et al., 2022;

Saunders, Foster et al., 2022), as it aids the contextualisation and understanding of factors surrounding the implementation process.

NPT (May et al., 2018; Murray et al., 2010), as a conceptual framework, aids the interpretation of factors which were identified as facilitating or inhibiting the uptake and use of VGCs by HCPs in general practice. Therefore, a theoretical framework was used after the coding was complete to assist in interpreting the overall significance of what had been found (Vears & Gillam, 2022).

Key findings can be understood in relation to NPT (May et al., 2018; Murray et al., 2010) and were matched accordingly to make sense of a diverse range of findings. These can be understood as: 'understanding the role of VGCs', 'achieving practice and patient buy-in', 'operationalising a new consultation model', and 'evaluating complex interventions'.

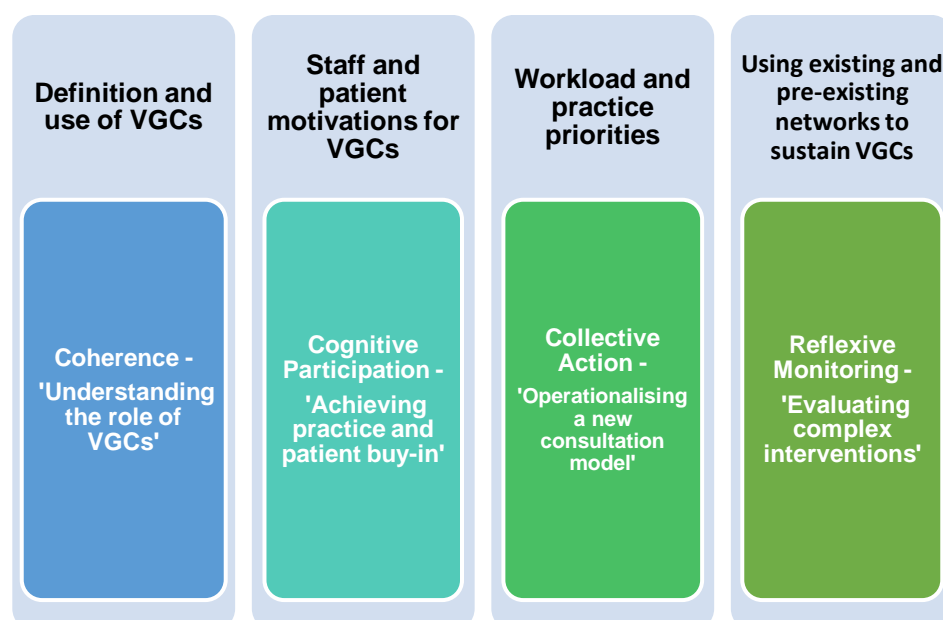


Figure 31: Schematic representation of findings from the analysis of the cross-sectional survey matched to the NPT constructs

### *Coherence: 'Understanding the role of VGCs'*

Understanding the role of VGCs is pivotal to gaining 'coherence' of the approach. The construct of 'coherence' can be used to interpret this data, related to 'sense-making' and operationalisation of a set of new practices or an intervention (May et al., 2015). 'Coherence' involves HCPs creating both an individual association and shared understanding of the approach, which allows practices to be able to adopt a pragmatic and comprehensible intervention in daily practice (*communal specification; individual specification*) (May et al., 2015).

To demonstrate 'coherence' of a new intervention, Murray et al. (2010) devised a number of questions which should be addressed:

- Is the intervention easy to describe?
- Is it clearly distinct from other interventions?
- Does it have a clear purpose for all relevant participants?
- Do participants have a shared sense of its purpose?
- What benefits will the intervention bring to whom?
- Are these benefits likely to be valued by potential participants?
- Will it fit with the overall goals and activity of the organisation?

(Murray et al., 2010).

The lack of clarity regarding what constitutes a '*video group consultation*' negates the ability to describe the approach in its entirety. Whilst VGCs are distinct from other consultation models, in terms of one-to-one consultations and in-person group consultations, this approach is misinterpreted with group therapy sessions and educational support

(*differentiation*). This blurs the purpose of the consultation model, echoed in the participants' descriptions of the approach.

Individual association with the approach is therefore complex, creating difficulties in obtaining a shared sense of its purpose. Organisational priorities tend to form a shared purpose, in terms of meeting patient demand and payment targets, yet this is not necessarily demonstrated by the HCPs themselves. Whilst HCPs are able to grasp the benefits of the approach, in terms of reducing consultation times and positive patient experience outcomes, its implementation and 'normalisation' into practice is complex (*internalisation*). Sustained adoption of a new intervention is dependent on the need to see a sustained effort to communicate the rationale for change and efforts to promote change in practice culture over a prolonged period.

#### *Cognitive Participation: 'Achieving practice and patient buy-in'*

'Cognitive participation' refers to the relational work of engaging and legitimising a complex intervention, in particularly exploring whether participants buy into and/or sustain the intervention (May et al., 2015). Achieving both practice and patient buy-in is a central theme in the data, ultimately determining whether the intervention can be adequately implemented and sustained.

To demonstrate 'cognitive participation' of a new intervention, Murray et al. (2010) devised a number of questions which should be addressed:

- Are target user groups likely to think the intervention is a good idea?

- Will they see the point easily?
- Will they be prepared to invest time, energy and work in it?

(Murray et al., 2010).

Many participants expressed difficulties in sustaining VGCs and this meant practices had to stop using the approach. Buy-in and sustainability was viewed superficially by several participants, as VGCs tend to stop after the programme had ended or the 'champion' or key individual in implementation had moved job roles (*initiation*). Cognitive participation was limited amongst participants due to the notion that the first intervention in is usually the first intervention out in primary care general practice, due to increased pressure in workload and backlog of patients. Whilst participants echoed benefits of VGCs, this was hindered by individual's motivations and attributes to implement and sustain the approach (*legitimation*). However, despite motivations and buy-in of the approach by HCPs, the lack of clinical and administrative support meant it was viewed as too time intensive and the preparation of resources exceeded their capacity. Whole 'team buy-in' was therefore necessary to ensure the necessary investment of time, energy and work (*enrolment*).

Patient buy-in was also considered to be integral to the uptake and use of VGCs. Low attendance and difficulties with patient recruitment impacted patient buy-in, as practices struggled to find a group of motivated individuals to join a VGC. Push back from patients also meant using a VGC was not always preferable, due to preferences of virtual vs. in-person group consultations. Difficulties regarding IT access for patients, and the ability to use digital technologies created barriers in terms of the patient buy-in to the approach. This demands consideration



of the appropriate patient population to which this approach should be targeted, to better suit patients' needs and demand.

The receptivity and 'cognitive participation' of VGCs in primary care is therefore dependent, not only on staff and patient buy-in, but relies on an engagement and understanding of newer models of care which divert from usual ways of working to aid sustainability (*activation*).

*Collective Action: 'Operationalising a new consultation model'*

'Collective action' reflects the operational work that individuals, groups and organisations undertake in engaging with and operationalising concepts for implementation into everyday practice (May et al., 2015). This includes how interventions can help or hinder HCPs in performing various aspects of their work, the context and infrastructure of primary care, issues of resource allocation, training needs, workload and the safety and security of newer ways of working.

To demonstrate 'collective action' of a new intervention, Murray et al. (2010) devised a number of questions which should be addressed:

- How will the intervention affect the work of user groups?
- Will it promote or impede their work?
- What effect will it have on consultations?
- Will staff require extensive training before they can use it?
- How compatible is it with existing work practices?
- What impact will it have on division of labour, resources, power, and responsibility between different professional groups?

- Will it fit with the overall goals and activity of the organisation?  
(Murray et al., 2010).

Operationalisation of VGCs by HCPs, and their organisations was dependent on usability in practice. This was therefore dependent on practice investment, with the need to ensure protected time for the planning and delivering of VGCs across all healthcare roles, practice support for a facilitator and adequate resources required to implement VGCs into practice.

Many participants expressed the impact of VGCs on their workload, in particular, in relation to facilitation, technology and organisation. The length of time taken to run a VGC had a great impact on workflow, with the need to ensure there was adequate time to plan, run and evaluate the VGC in practice (*contextual integration*). Administrative tasks were often overlooked and were not allocated enough time to complete the necessary workload and scheduling did not seem to coincide with their appointment timetables. This subsequently affected the division of labour, with large amounts of work placed on facilitation and the administrative work associated with the approach (*relational integration*). Administrative staff were considered to be facilitators and co-ordinators of the session, which impacts their everyday workload significantly. The inability to recognise the operational processes necessary to deliver a VGC was often to do with the lack of understanding regarding the role of the approach in practice (*skill-set workability*).

Due to the impact of the COVID-19 pandemic and the need for newer ways of working, VGCs aimed to provide a solution to consulting with patients virtually, whilst reducing the backlog of patients waiting for

consultations. The technological infrastructure used within general practice at the time of the pandemic had to develop rapidly to meet the needs of patients and to deliver the same standard of care (*interactional workability*). However, many participants expressed that the virtual nature of the method was not consistent with their current way of working. A lack of training regarding IT systems and skills was apparent, due to the need to deliver a virtual approach as soon as the pandemic commenced. HCPs demonstrated a reluctance to change, and were only required to by the impact of COVID-19 on a restricting of services.

A greater understanding of the purpose and role of the approach will greatly impact the 'collective action' of HCPs, groups and organisations across primary care general practice.

#### *Reflexive Monitoring: 'Evaluating complex interventions'*

'Reflexive monitoring' is concerned with the formal or informal evaluation or monitoring of practices or interventions and how these can be used to influence future implementation (May et al., 2015). This may include agreeing on the effectiveness or usefulness of an intervention, questioning the need for further modifications, and the subsequent impact the intervention will have on individuals, teams and organisations.

To demonstrate 'reflexive monitoring' of a new intervention, Murray et al. (2010) devised a number of questions which should be addressed:

- How are the users likely to perceive the intervention once it has been in use for a while?
- Is it likely to be perceived as advantageous for patients or staff?

- Will it be clear what effects the intervention has had?
- Can users/staff contribute feedback about the intervention once it is in use?
- Can the intervention be adapted/improved on the basis of experience? (Murray et al., 2010).

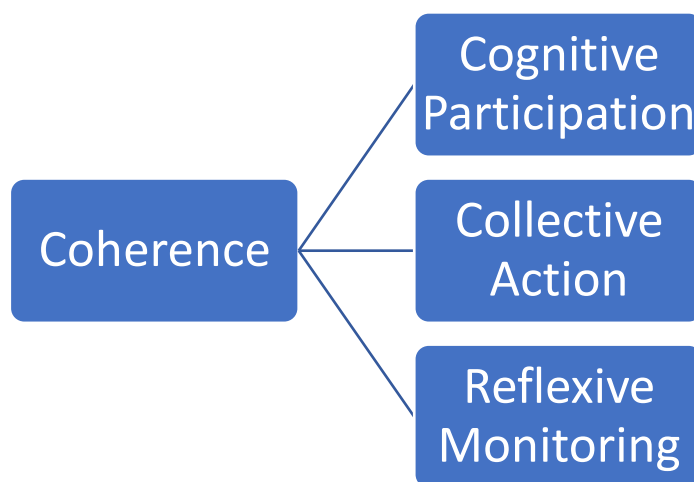
Whilst the cross-sectional survey did not explicitly ask participants regarding evaluation measures, a small number of participants reported the need to measure outcomes. Many participants expressed that practices are too busy to innovate, relying on audit trials and small-scale evaluations to evaluate practice. This evaluation therefore often takes place at practice level (*communal appraisal; individual appraisal*).

The context to which VGCs are being used in practice, meant that evaluation measure have been small-scale, often in the form of audits and therefore cannot reliably demonstrate the extent to which this approach will influence future implementation (*systematisation*). The lack of research evidence on VGCs, discussed in Chapter 3, highlights the value of practice-level evaluations in order to demonstrate impact of the approach.

The novelty of the approach has meant that its benefits and viability in practice have not yet been comprehensively evaluated. This warrants the need for VGCs to be adapted and improved based on experiences of the intervention, recognising the complexities surrounding embedding a complex intervention into practice (*reconfiguration*).

#### 6.4.2.3 Implications for this thesis

Whilst NPT is often viewed as a linear process (Blickem et al., 2014; May et al., 2018), the interactions between each construct in this study have demonstrated a dependence on ‘coherence’ of the intervention (Finch, 2008). Figure 32 shows the focus on ‘coherence’ and sense-making of an intervention as a starting point for the implementation process. This generates useful discussion in the development of this thesis and consideration of the implementation process surrounding the uptake and use of VGCs.



*Figure 32: Interactions between NPT mechanisms*

#### 6.4.2.4 Implementation theory summary

Whilst NPT cannot account for the fluidity and lack of standardisation of VGCs in general practice, it can help to identify how connections between individuals and organisations may be affected by the intervention and how this can be modified to support these interactions (May et al., 2018;

Murray et al., 2010). NPT helps to capture the process of the strategic change involved in implementing a complex intervention within a given healthcare context, explaining how concepts are operationalised, engaged with, reflected on and evaluated (May et al., 2015; May et al., 2016). Whilst 'normalisation' cannot be measured objectively, this theory helps to develop a rational foundation about the processes and actions surrounding systems implementation.

NPT helps to advance an understanding of the interaction between individual and contextual factors which determine motivations behind implementing and delivering VGCs in primary care general practice and what can make its use sustainable. The value of NPT is that it focuses on the needs of one or more professional/patient group at a time, primarily within a given context, with less consideration given to wider system issues (May et al., 2018; Murray et al., 2010). The theoretical nature of NPT helps to understand this data set accounting for both individual and organisational factors surrounding embedding complex interventions into practice.

### **6.4.3 Comparison with existing virtual and in-person group consultation literature**

#### **6.4.3.1 Papoutsi et al. (2022)**

Many findings resonate with the work of Papoutsi et al. (2022) in which patients and HCPs were interviewed about their views and experiences of VGCs in general practice. The work of Papoutsi et al. (2022) was

conducted at a similar period of time as this cross-sectional survey study and demonstrate consistencies in findings.

Firstly, definitions of VGCs echoed great similarities with this study, in which participants were unable to provide a standardised definition of what constitutes a VGC. Papoutsi et al. (2022) described the term ‘*video group consultation*’ was used interchangeably, regardless of the purpose and scope of the VGC (e-Learning for Healthcare, 2021). Due to this, Papoutsi et al. (2022) provided a categorisation of remote group-based formats (Table 31).

Table 31: Remote group-based care formats (Papoutsi et al. 2022)

VGC Type	Characteristics
<b>Clinical</b>	One-to-one clinical discussion of test results, medication and self-management in the group setting, combined with peer support and discussion
<b>Educational</b>	Focusing on self-management or ‘healthy living’ topics, with little or no individual clinical input
<b>Informational</b>	Webinar format rather than clinical consultation, usually involving a large number of attendees
<b>Mixed</b>	Combining elements from the first three types

This study demonstrated a number of VGC types, especially associated with the clinical and educational classifications, which demonstrates the fluidity in understanding of what constitutes a ‘video group consultation’. This extended to the components of the VGC, including a mixture of

structured annual reviews, as well as informal components, such as group support and discussion (Papoutsi et al., 2022).

Not only complexities regarding the definition of a 'video group consultation' arose in the work of Papoutsi et al. (2022), but how these were delivered also varied. VGCs were either delivered where patients with a particular medical condition could book into a standard session or by the practice targeting patients with specific clinical needs (Papoutsi et al., 2022). These consultations would either be delivered periodically or annually, with similar or different groups of patients (Papoutsi et al., 2022). Most consultations were either delivered clinically or using a mixed format across a range of conditions, including diabetes, asthma, cancer, anxiety and post-natal care needs (Papoutsi et al., 2022). Whilst this was not explicitly described in this study, definition of how it is being used in practice, i.e. as a LTC review or a lifestyle medicine session, denoted a range of delivery methods, from annual reviews to monthly sessions. Papoutsi et al. (2022) thus highlighted that the lack of definition and the delivery of clinical and mixed formats requires a greater operational and cultural shift from usual care, and therefore many participants described the safety of delivering educational and informational sessions. It was described in this study that sustainability is dependent on a '*culture shift*'(P28\_GP).

Secondly, Papoutsi et al. (2022) commented on staff motivations for setting up VGCs, which demonstrated similar findings to this cross-sectional survey study. Papoutsi et al. (2022) reported that staff motivations were primarily demand-led, to meet QOF requirements. This cross-sectional survey study noted participants stating, '*we were commissioned to provide the service for a PCN*'(P31\_GP) and '*CCG*



*locally commissioned service incentivising group consultation delivery'*(P33\_GP). However, Papoutsi et al. (2022) found that staff raised the importance of improving patient access to healthcare, which was not demonstrated within this study as a motivation for setting up VGCs.

Thirdly, the time needed to set-up and deliver VGCs was evident in the work of Papoutsi et al. (2022), with increased administrative work and organisational processes. Similarly in this cross-sectional survey study, facilitation and support was the greatest reason why practices stopped delivering VGCs, encompassing a range of reasons related to administrative work, time, workload and lack of capacity. One participant described *'they are time intensive for small turnout in terms of prep of resources, tech support, 2 clinicians presenting and someone on the chat box'*(P30\_SP). The NHSEI commissioned training recommended that clinically focused VGCs must involve at least two members of staff (e-Learning for Healthcare, 2021).

Lastly, having a pre-existing relationship with patients was instrumental to better manage the virtual nature of the group consultation (Papoutsi et al., 2022). This was intended to ensure patients' needs were met and they were understood equally. However, in this cross-sectional survey study, participants did address the notion of having pre-existing relationships to successfully deliver VGCs, although this was with other practices rather than the patients themselves. Several participants described that using already established experts delivering VGCs was necessary to sustain the approach.

In summary, the categorisation of VGCs by Paptousi et al. (2022) is useful to help determine the scope of VGCs for this thesis. It is interesting that

a large majority of participants determined a VGC to be a LTC review (n=25), therefore related to the clinical categorisation of VGCs, whilst findings from Chapter 3 highlights the paucity of published research evidence using this model of VGCs. This raises a dichotomy between HCPs experiences with VGCs and the published literature on the approach.

#### **6.4.3.2 Swaithe et al. (2021)**

Whilst the work of Swaithe et al. (2021) focuses on in-person group consultations, interviews with members of the general practice workforce demonstrated similar findings to this cross-sectional survey. In particular, a lack of standardisation of group consultation models and the practicalities associated with implementation were considered similar to a virtual adaptations of the approach.

The emphasis placed on the need to develop an implementation strategy which considers contextual circumstances, is an aspect of VGCs which has been considered as part of the discussion, in relation to NPT (May et al., 2015). Swaithe et al. (2021) used NPT to understand the mechanisms and practicalities behind the implementation and delivery of group consultations, and identified similar issues with regards to workload, evaluation of process measures and using 'experts' in the area to help to develop services in primary care.

Swaithe et al. (2021) further questioned the transferability of findings from a face-to-face group consultation to a VGC, due to the characteristics of the patient population, including sociodemographic

status and health and digital literacy needs. This will be considered throughout the studies included within this thesis.

## **6.5 Strengths and limitations**

This is the first work to the candidate's knowledge that has used a UK national cross-sectional survey of HCPs to explore the uptake and use of VGCs in primary care general practice. This study has been published in *Primary Healthcare* (Appendix 2) (Scott et al., 2023). A strength of this study is the use of survey methods which enabled the collection of data from a wide range of participants due to the online and accessible nature of the platform. The mixture of both closed and open-ended questions, allowed for the categorisation of data and the expression of thoughts and opinions, which are intrinsic to the development of this thesis (Semyonov-Tal & Lewin-Epstein, 2021). In addition, the use of multiple sampling techniques helped to obtain a diverse sample due to various methods of recruitment used (Taherdoost, 2016).

In this study, a cross-sectional survey was an appropriate method to provide a set of baseline characteristics for the uptake and use of VGCs at a certain point in time. Also, the cross-sectional nature of the survey, favoured over a longitudinal design, was suitable for the research question due to the novelty of the approach (Wang & Cheng, 2020).

It is also important to consider that I completed both the data collection and analysis. This allowed me to familiarise myself with the data upon collection with the online documentation of responses on the survey platform, and helped to make sense of the data, and discuss emerging

findings and data analysis with the supervisory team. However, a limitation of this meant there was limited double coding and checking throughout the analysis process which may have increased the likelihood of biased interpretations. Findings were often presented to the supervisory team throughout the analysis process to demonstrate patterns of interpretation and coding processes.

The reporting of the cross-sectional survey findings followed the guidelines for STROBE (von Elm et al., 2007) to ensure transparent documentation of results.

Study limitations include the small number of participants (n=36), conducted across nine regions of the UK. It is evident that whilst there is some use for VGCs in practice, uptake is not on a broad scale. However, the number of participants who responded to the survey may be regarded as representative of 36 UK general practices, as it is likely that there is only one individual 'champion' of VGCs in each practice.

With regards to the sample size obtained, a sample size of 50 participants was initially anticipated. However, whilst not achieving this initial estimate, it was felt a sample size of 36 participants provided adequate in-depth and varied insights which were rich and relevant in answering the research question. Consideration of the increased pressures facing general practice at the time of the study also meant that a sample size of 36 participants was justified.

In addition, a further limitation of this study was the inability to capture particular roles involved in conducting VGCs, including HCAs and administrative support/receptionists. This may have led to a more clinically focused sample in relation to the uptake and use of VGCs. FCPs

and physicians associates were also not captured within the sample, as these roles are less likely to be involved with chronic condition reviews. Pharmacists were also not identified which provides further clarity on the use of VGCs for general practices.

Also, the spread of participants from different locations, most primarily being London, South East and North West of England, reduced the likelihood of participating practices leading other practices with good working relationships to partake in the study, reducing bias across participants. Despite this, it is unknown which practices were identified due to the anonymity of the survey. Participants can be identified by area alone. Although, the findings should only be viewed as a starting point for future inquiry, warranting further exploration across other general practice settings. Whilst a relatively low response-rate may limit the transferability of findings, it has provided a baseline for further investigation within and beyond this thesis.

## **6.6 Reflexivity**

My reflexive journal was kept throughout the entirety of the study, and key decisions were reflected on (Appendix 30). A decision was made to only include participants who are using or have previously used VGCs, to ensure that findings were not skewed by including those who have not used VGCs, as this was not the central aim of the research. I also ensured there was a further distinction between those who are currently using and those HCPs who have previously used, to demonstrate the difference between usage. A question was included to address this [if you previously used video group consultations, why did you stop?]. I was subsequently

challenged by a potential participant on their choice of only including HCPs using or previously using VGCs, stating that I would not receive any responses. I reflected on this, and the potential inclusion of other HCPs not using the approach. However, after careful consideration, it was decided that including the views of those not using VGCs would not be answering the research aims and objectives. I wanted to ensure that the methods I had chosen had 'methodological integrity' (Levitt et al., 2021) and therefore appropriate to answer the research aims and objectives.

Also, it was noted that a few participants declined the consent form to take part in the online survey. This may have been accidental, as the survey was anonymous and therefore it is unknown whether those participants had undertaken the survey afterwards. The potential online nature of the survey may have made it possible for individuals to easily reject consent.

In addition, I experienced a couple of emails from HCPs who; 1) had only completed one-to-one video consultations, or 2) never had used VGCs. Some participants emailed stating they were not eligible for the survey, despite agreeing to the consent form, after half the survey had been completed. This made me reflect on whether the consent form was clear enough. However, the consent form explicitly stated that only HCPs who are using or have previously used VGCs are eligible to participate. On reflection, the ambiguity of the intervention made it difficult to establish a coherent understanding of VGCs, relative to contextual and pragmatic factors for individuals. For future research studies, it is important to consider whether participants understand the eligibility criteria prior to consent.

Also, the decision to only include HCPs and not include patients stemmed from alignment with the research questions and objectives. Due to the under-researched nature of the topic, I felt it was important to establish the views on the uptake and use of VGCs by HCPs first, before collecting the views and experiences of patients. This decision was made due to the diversity of approaches used and the pragmatic nature of the intervention, which made it difficult to establish coherence. Future research studies have the potential to include patients in determining the uptake and use of VGCs in primary care after further clarification regarding the nature of the intervention has been confirmed.

The ways in which the pandemic impacted the recruitment of HCPs was considered substantial. The survey was conducted during this time, which meant recruitment of participants was difficult, due to pressures at the time in general practice. The online nature of the survey made data collection possible, as the survey was conducted at a time of social distancing. Microsoft Forms in particular was chosen over other online survey platforms, due to comfortability with the programme and ability to import data into Microsoft Office for further interpretation. However, on reflection and speaking to academics in the field [ML], it was apparent that there were universal problems in accessing HCPs in general practice during the time of the pandemic.

Furthermore, content analysis was chosen to analyse the qualitative component of the survey (Elo & Kyngäs, 2008). Whilst this was not an analysis method that I was well-versed in, this PhD ensured there was enough time to learn and understand this method. I also have a supervisory team who have experience in qualitative data analysis. Also, descriptive statistics were favoured over inferential statistics, as

descriptive statistics focus on the sample rather than the whole population (Gutterman, 2019). Descriptive statistics are able to describe a sample population but not make inferences to the entire population. This aligned with the research aims and objectives of the study.

Due to the nature of VGCs in primary care, it would be difficult to make inferences or correlations to the entire population on a small and non-comparative sample size. The anonymity of the survey results also makes it difficult to make direct inferences between groups. Undertaking the '*Research Methods in Health*' module at Keele University in January 2022, aided distinction of these techniques.

## **6.7 Chapter summary**

This chapter has presented the cross-sectional study findings, providing contextual data regarding the landscape of primary care. Discussion of these key findings were presented in relation to NPT and the existing literature on group consultations aiding the identification of constructs needed to be addressed to 'normalise' an intervention into practice (May et al., 2015; Papoutsi et al., 2022; Swaithes et al., 2021). The following chapter presents the methods used to conduct the semi-structured interview study with HCPs in primary care general practice.



# **Chapter 7: Semi-structured interview methods**

---

## **Chapter 7: Semi-Structured interview methods**

---

### **7.1 Introduction**

The previous chapter presents the cross-sectional study findings associated with the uptake and use of VGCs by HCPs in general practice. This chapter, study three of this thesis, provides the methods used to conduct a qualitative exploration of HCPs experiences of implementing VGCs and the associated impact. This chapter builds on the previous study, providing a deeper understanding of the role, delivery and implementation of VGCs across UK general practice settings.

This chapter begins by considering different qualitative research methods considered appropriate to answer the research question, with justification provided of the choice of study method used. The chapter continues to present the chosen methods, including the study placement, sampling and recruitment, data collection, analysis techniques and data reporting. Stakeholder involvement and PPIE is addressed within the study methods. Further to this, the chapter outlines reflexivity in relation to the study methods and ethical considerations. The chapter concludes with a chapter summary.

### **7.2 Methods**

#### **7.2.1 Qualitative interviews**

Qualitative interviews are conducted to provide in-depth information and insights from participants on a particular topic (Grey, 2014). They aim to

explore and explain new phenomena in-depth, in order to discover new constructs and relationships. The use of interviews provides ample possibilities within healthcare research, with the need to understand patterns of health behaviour, explore healthcare needs, describe lived experiences and design interventions for practice (Renjith et al., 2021). An interview technique allows researchers and practitioners to examine both the 'why' and 'how' of decision making, explain and identify unknown phenomena, and make sense of complex interventions, extending beyond quantifying health and illness to shed light on the 'softer' side of medical treatment (Busetto et al., 2020; Renjith et al., 2021).

### **7.2.2 Types of interview design**

There are various forms of interview design which can be employed to obtain in-depth, rich data (Creswell, 2007; Geertz, 1973). These include three types of research interview: structured, semi-structured and unstructured. The structured approach (for example, using a topic guide which stays the same for each participant) allows the researcher to provide key questions which helps to define areas to be explored, as well as ensuring cross-case comparability (Bryman, 2004). Semi-structured interviews (for example, using a framework of discussion but with some flexibility) help to define the areas to be explored but also allow the researcher and/or participant to diverge in order to pursue an idea in more detail (Gill et al., 2008). Whereas unstructured interviews do not have a topic guide or framework to guide discussion (Gill et al., 2008).

Semi-structured interviews, in more detail, benefit from both the structured and unstructured approach, aiding the elaboration of

information which is regarded by participants as important but has not yet been considered by the research team (DeJonckheere & Vaughn, 2019). The confidential nature of individual interviewing techniques allows the opportunity to build a professional rapport with participants, gaining trust in order to obtain rich and deeper insights (Löhr et al., 2020; Silverio et al., 2022). However, concerns regarding the use of semi-structured interviews are centred around the risk of interviewer bias and response behaviour (Bergelson et al., 2022; Löhr et al., 2020), in which the interviewer can subconsciously influence participants to answer in a certain way (Bowling, 2009), or equally, participants may give the answers they think the interviewer is looking for (Bergelson et al., 2022; Löhr et al., 2020). It was, therefore, important to unpick how I may have influenced interview discussions. Semi-structured interviews can also be difficult to conduct if the interview is lacking sufficient depth and will not generate meaningful analyses (Braun & Clarke, 2022b).

### **7.2.3 Consideration of other methods**

Focus groups are sometimes seen to be synonymous with interviews, especially semi-structured 'one-to-one' and 'group' interviews (Kitzinger, 1995; Morgan, 1998; Ochieng et al., 2018; Parker & Tritter, 2006). A focus group is conducted on a particular topic, organised for research purposes and the discussion is moderated and guided by the researcher, with the ability to collect data from many participants at once (Kitzinger, 1994). Focus groups are primarily used for generating information on collective views and the meanings which lie behind those views (Gill et al., 2008;

Morgan et al., 1998). Bloor et al. (2001) highlighted a suggested criteria for using focus groups in research:

1. As a standalone method for research focusing on group norms, meanings and processes
2. As part of a multimethods design to collect group narratives
3. To clarify, extend, qualify or challenge data collected through other research methods
4. To feedback results to research participants (Bloor et al., 2001).

Whilst this criterion is appropriate for this research study, the role of the researcher and the relationship between participants creates a fundamental difference between the two techniques (Halliday et al., 2021; Smithson, 2000). Interviews involve a one-to-one in-depth discussion, in which the researcher adopts the role of the 'investigator', whereas focus group discussion implies the researcher as a 'facilitator' or 'moderator' (Ochieng et al., 2018). Also, the inability to explore individual experiences in-depth whilst in the presence of other research participants and without their responses being influenced by members of the group, suggests that a semi-structured interview approach is more favourable. There is less risk of social desirability bias and groupthink within semi-structured interviews, as opposed to focus groups, due to the nature of the delivery method (Charmaz, 2006). This individual perspective was important when exploring definitions of VGCs, as opposed to being influenced by other members in a group.

#### **7.2.4 Justification of choice of study methods**

Individual semi-structured interviews were chosen as the most appropriate research method to answer the research question. The flexible and responsive approach allows the topic guide to be flexibly applied to individual participant's responses. This allows for further exploration of participant's experiences and insights, tailoring the questions to encourage participant's to further elaborate on particular significant thoughts or insights. Virtual individual semi-structured interviews have also demonstrated to yield a similar depth of knowledge and discussion, compared to face-to-face interviews (Chapter 4).

#### **7.3 Overview of method**

To address objective 3, an interview study was conducted with a range of HCPs across UK general practice, in order to gather their experiences of delivering and/or implementing VGCs.

The overall aim of the qualitative study was to understand and explore the barriers and facilitators associated with the implementation and impact of VGCs from the perspective of clinical HCPs and non-clinical general practice staff.

The use of semi-structured interviews was appropriate to explore the research question, as semi-structured interviews provide meaning to participant experiences through a social interaction between the interviewee and participant, narratively evidenced through direct quotations (Bhattacharjee, 2012). Interviews are able to elicit in-depth viewpoints and opinions from participants yet are interpreted in light of

the researchers perspective and worldview. My interview reflexive diary and positionality statement was thus iteratively updated throughout this process to demonstrate this (Appendix 18; Appendix 19).

An inductive approach to data collection and analysis meant semi-structured interviews were favoured over structured interviews, allowing for flexibility in refining and exploring new and existing ideas (Gill et al., 2008; Creswell, 2009). PPIE and stakeholder engagement were used prior to the development of the topic guide and subsequently used as a sounding board within the analysis phase (Boaz et al., 2018).

The following sections include the study placement, sampling and recruitment, data collection, data analysis and data reporting.

#### **7.4 Study placement**

The interview study is the final phase of this research project, complementing the evidence provided by the systematic review (Chapter 3) and data produced by the cross-sectional survey (Chapter 6). Whilst this phase of the research stands alone to address the associated impact and implementation of VGCs in primary care general practice, it can also help to explain and contextualise the data produced by the cross-sectional survey, providing greater insight into the personal experiences of HCPs using VGCs in general practice.

## **7.5 Sampling and recruitment**

### **7.5.1 Sampling technique**

Three types of qualitative sampling were used, including purposive, random and snowball sampling (Creswell, 2009). Purposive sampling, an appropriate technique to recruit participants based on particular characteristics to obtain a diverse sample (Palys, 2008), was used to recruit individuals, from professional networks, who have been involved with VGCs and meet the eligibility requirements for the study. Also, random sampling was achieved through the purposeful use of social media platforms, with the ability to reach a large audience using virtual networking. Further to this, a snowball sampling technique (Renjith et al., 2021) was used to capture a larger audience through professional networks, i.e. the emailing of participants generating other participants from their own professional networks who are delivering VGCs, or social media links may be shared amongst colleagues (Johnson, 2014).

### **7.5.2 Sample size**

A sample size of 12-20 (10 HCPs and 10 patients) was initially anticipated (Braun & Clarke, 2021b). Justification of the choice of study population has been provided in section 1.6.3.

An *a priori* sample size calculation was not determined due to the qualitative nature of the research (Renjith et al., 2020), however, Malterud et al. (2016) and Ando et al. (2014) recommend an initial approximation of 12-20 for this research design.



### 7.5.2.1 'Data saturation' vs. 'information power'

Concepts such as 'data saturation' have been widely adopted within qualitative research based on the context of Glaser & Strauss's grounded theory (Charmaz & Thornberg, 2020; Glaser & Strauss, 1967; Glaser & Strauss, 1999). However, the question of whether '*can theories, data or themes can ever be truly saturated?*' (Varpio et al., 2017) remains contested in qualitative research.

By definition, 'data saturation' is tied to a specific methodology, inferring that the addition of more participants to the sample will not add anything to the analysis (Malterud et al., 2016). Ando et al. (2014) argue that 'data saturation' is more aligned with structured approaches to thematic analysis, highlighting inconsistencies with reflexive thematic analysis [RTA]. Thus, Braun and Clarke (2021b) highlight the need to consider 'data saturation' with regards to the usefulness for thematic analysis.

Malterud et al. (2016) argue that researchers claiming saturation are not always transparent about how this has been achieved. Thus, Varpio et al. (2017) argue that saturation cannot be used as a general indicator of rigor in qualitative research and therefore consideration of 'information power' is more appropriate to a qualitative data set.

'Information power' is a concept which differs from 'data saturation', focusing on the relevance of a sample, in which sample adequacy, data quality and variability of relevant events are more important than the number of participants (Malterud et al., 2016). The larger 'information power' a sample holds, the lower number of participants needed. 'Information power' directly relates to the study aims, sample specificity,

established theory, quality of dialogue and analysis strategy (Malterud et al., 2016).

Sample size was therefore based on both 'information power' and 'data saturation' (Malterud et al., 2016), which were viewed as complementary approaches to determine saturation. Application of these concepts is further discussed in section 7.6.3.

### **7.5.3 Study population**

Participants who were eligible to take part in this study included primary care general practice health care professionals (clinical and non-clinical) and a range of stakeholders including NHS service leads, clinicians, managers, trainers and administrators, who have been involved, initiated, set-up, implemented, delivered, or have previously delivered VGCs in primary care general practice.

The inductive nature of the research method meant iterative considerations of the sample and sample size. Iterative considerations after each interview and a reviewing the data collected from the first eight participants, it was apparent that there was a lot of variety in the data and that increasing the number of HCP interviews conducted would allow a fuller exploration of the topic to ensure that sufficient depth would be achieved. The significance of 'information power' led to reconsideration of the sample population, with the need to explore the experiences of HCPs implementing VGCs further than originally anticipated. The sample size was therefore increased up to 20 HCP participants.

Patients were initially considered as part of the sample population, yet the depth and variety of data obtained from the first eight interviews meant further exploration of HCPs experiences of implementing VGCs was required. In addition, the demands of the research project, and the time constraints imposed, meant that adequate exploration of patient experiences would not be deemed possible. Patients were therefore removed from the sample population and will be considered within future research.

#### **7.5.4 Recruitment**

Participants were recruited from professional networks and social media. A list of eligible participants was sought from a list of general practices who are participating or have participated in VGC training across primary care general practice via the *FutureNHS* platform (FutureNHS, n.d).

An initial email was sent containing details of the study and outlining participant involvement (Appendix 33). After participants expressed interest via email, the participation information sheet and invitation letter were then sent by email. The information sheet informed potential participants that the interview would take up to 30 minutes and was available to be completed at the participants own convenience. A reminder email was sent out after one month. After this, no further contact was made. Consent forms and confirmation of interview were sent out after participants were selected, if they met the eligibility criteria for the study (Appendix 34). Typed, written consent was obtained from all participants.

Participants were also recruited through professional groups on Twitter and Facebook, including Keele University IAU and Keele University School of Nursing and Midwifery (Appendix 35). Like the cross-sectional survey, posts included simple images, the use of hashtags and short informative text to appeal to a diverse range of participants and grab their attention (Defeyter et al., 2009; Page et al., 2022). Hashtags were used to connect with people with similar interests (Pizzuti et al., 2020) such as #videogroupconsultation, #videogroupclinic, #primarycare, #generalpractice, and #research (Appendix 35) and relevant stakeholder groups were tagged.

A recruitment advert was displayed on professional social media platforms, containing details of the study. A participant information sheet (Appendix 33) and invitation letter (Appendix 33) was emailed to participants after an expression of interest was received. A reminder was posted on social media, one month after the initial post was sent. After this, no further contact was made. Consent forms and confirmation of interview were sent out after participants were selected, if they met the eligibility criteria for the study (Appendix 34).

Examples of recruitment advertisements can be found in Appendix 35.

The use of social media, in addition to professional networks, allowed for the recruitment of wider existing networks involved with VGCs and therefore obtained a broader range of perspectives.

Figure 33 outlines the recruitment process for HCPs in this study.

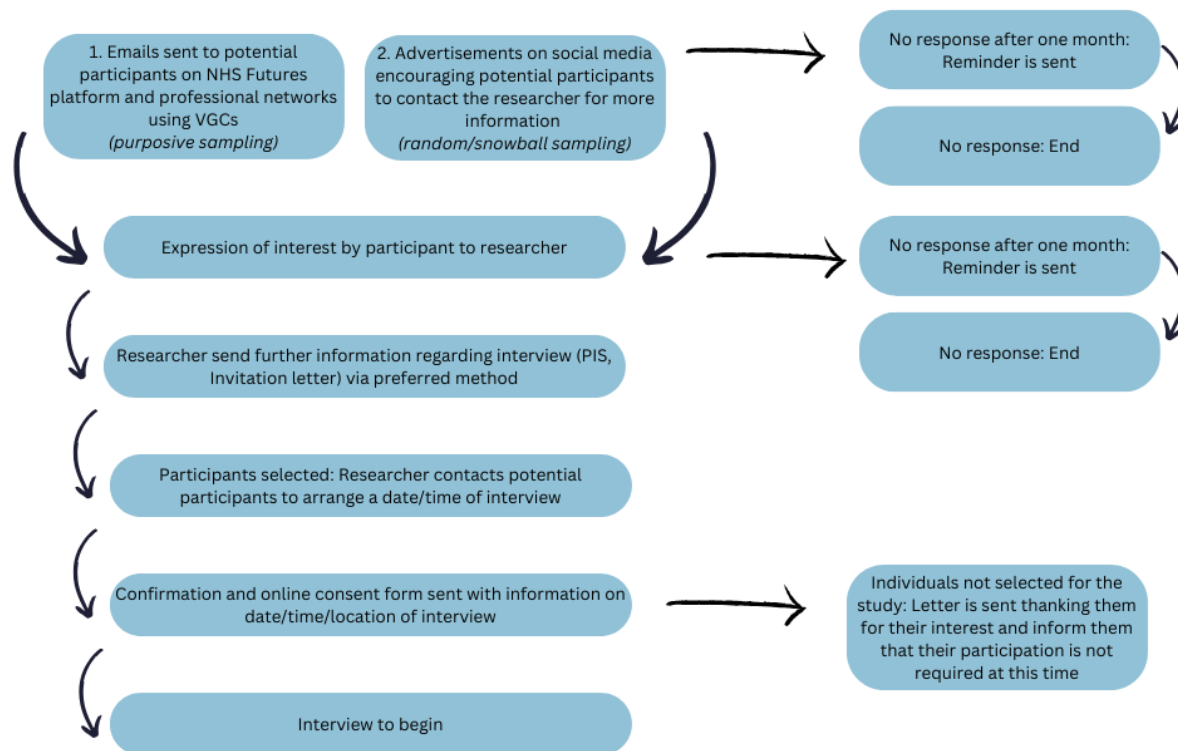


Figure 33: HCP recruitment process for the semi-structured interview study

### **7.5.5 Consent**

Informed consent was obtained from all participants prior to data collection. The consent process began after participants expressed interest in the study, after having the opportunity to read the participant information sheet (Appendix 33) and letter of invitation. These documents outlined the aim and objectives of the study, participant involvement, participatory rights, right of withdrawal, anonymity, confidentiality and storage of information.

The online consent form, devised on Microsoft Forms, was then sent electronically via email. The consent form also asked if the participant has either attended, initiated, set-up, implemented, or previously delivered a VGC, which would make them eligible for the study.

Consent was reaffirmed at the beginning of the interview, giving participants the right to withdraw from the interview at any point before or during the interview and up to two weeks following the interview date, without giving a reason.

## **7.6 Data collection**

### **7.6.1 Interview topic guide development**

The interview topic guide can be found in Appendix 36.

The topic guide questions were inductively designed, informed by a SAG and PPIE input, with reference to the pre-existing literature on the topic and the previous phase of the research. Alongside this, discussions with the supervisory team led to the formulation of key topic areas.

Ensuring stakeholders are relevant and pertinent to the research question, meant a further SAG was conducted for the semi-structured interview study, in addition to the cross-sectional survey stakeholder meeting. This was to ensure that discussion was relevant and applicable to each research method and those working within primary care general practice. The overall aim of this meeting was to seek stakeholders' views and opinions in developing the interview topic guide.

A previously established GPN evidence-based practice group was used to identify stakeholders. The GPN evidence-based practice group (Keele University, 2024a) aims to find the best evidence to underpin primary care general practice. Critically appraised topics [CATs] are raised from real-world clinical problems or concerns, in which a clear answer is not evident. The group aims to answer CAT questions by completing a literature search, appraising the evidence and seeking input from researchers in order to generate new primary care evidence (Keele University, 2024a). This group helped to develop the topic guide on a previous interview study focusing on the experiences of implementing and delivering group consultations in UK general practice (Swaithe et al., 2021).

An overview of the PhD project and results found so far were presented to provide a background to the topic guide. A PowerPoint presentation was used to demonstrate this (Appendix 37). The topic guide was displayed on the presentation, as well as providing printed handouts to stakeholders to ensure clear visualisation. The topic guide was piloted to ensure questions were clinically appropriate, that the interview flowed well and to practice conducting an interview. This was also an opportunity

for me to reflect on my interviewing technique, identifying any areas of improvement before commencing the study. The meeting was not recorded, but short notes were taken from the discussion held. This allowed for modification of the topic guide as recommended by the GPN evidence-based practice group.

Further details of the SAG meeting methods are included in Appendix 38.

Discussion was tailored directly around components of the interview topic guide. Stakeholders were keen to address three key areas: Group dynamics; Practice mechanisms; and Facilitation. Table 32 describes stakeholder discussion points to inform the semi-structured interview study.



Table 32: Stakeholder discussion points for the semi-structured interview study

Stakeholder Discussion Points	
<b>Group dynamics</b>	Stakeholders who had facilitated a VGC themselves highlighted the importance of effective management of group dynamics, by identifying the need for facilitation and training regarding the approach. Those stakeholders discussed the importance of including a question for HCPs regarding the management of group dynamics within the topic guide.
<b>Practice mechanisms</b>	Ensuring the correct logistics and procedures, including training, were in place to adequately manage and run VGCs was an aspect of the topic guide stakeholders felt needed to be addressed due to their own clinical experience in practice.
<b>Facilitation</b>	Digital knowledge, confidence of the practitioner and training requirements were deemed to be important aspects of the topic guide which needed consideration. This would aid a greater understanding of the facilitation of group dynamics.

In addition to this SAG, a further two PPIE meetings were conducted to guide study material and interpretation of results. PPIE involvement in the semi-structured interview study is reported in detail in the GRIPP2 checklist (Staniszewska et al., 2017) (Appendix 25). Also, collaboration with the ambassador [NK] for the Race Equality Framework for Public Involvement in Research [REFAPIR] at Keele University was maintained

to ensure the design of methods were inclusive to diverse populations and groups that were once considered 'harder to reach' populations (Tran et al., 2015). Inclusion of diverse patients within the interview study was a central consideration to aid representativeness of the results.

### **7.6.2 Interview process**

Participants were invited to take part in an individual virtual interview lasting approximately 30 minutes. Interviews were conducted online via Microsoft Teams and were audio recorded using a dictaphone. Demographic data was collected on the electronic consent form prior to commencing the interview, which generated more time to ask questions informed by the topic guide.

Firstly, a brief description of the research aims and objectives was reiterated, and consent was verbally confirmed. Next, the use of the dictaphone was explained, which was used to record all interviews for transcription prior to analysis. This was switched on after initial introductions had happened and consent had been agreed with the participant. Then, the topic guide was iteratively applied, asking prompt questions where necessary and allowing time for elaboration. The dictaphone was stopped once all interview questions were asked.

After finishing each interview, the recording was uploaded securely to the university protected drive, anonymised and deleted from the dictaphone. All recordings were individually transcribed by myself as the researcher, by listening back to the audio recordings and transcribing the interview verbatim on Microsoft Word. Audio files and anonymised transcripts are

stored securely on the university password protected drive, and will be kept for a minimum of 10 years after completion of the study, in line with Keele University's standard operating procedures on data management.

### **7.6.3 'Data saturation' and 'information power'**

Concepts such as 'data saturation' and 'information power' (Malterud et al., 2016) have been considered, based on the usefulness of the concepts in thinking about the ways in which the data is understood and answers the research question at hand.

A pragmatic application of these terms was employed in relation to reflexive thematic analysis [RTA], as each approach complimented each other to determine an adequate sample size (Braun & Clarke, 2021b). Recruitment therefore continued up until a point where no new themes were constructed according to the data set, and no new data was generated by further collection of data, since all questions were exhausted by the previous interviews (Alvesson & Skoldberg, 2009; Hennink & Kaiser, 2022), defined as 'inductive thematic saturation' (Saunders et al., 2018).

In addition, 'information power' was considered, as the more relevant information provided by participants, the fewer participants needed (Malterud et al., 2016). This provides an alternative pragmatic justification for sample size in RTA, both in theory and practice (Malterud et al., 2016).

## **7.7 Data analysis**

### **7.7.1 Rationale for RTA**

Due to the under-researched nature of the topic, an inductive RTA was conducted (Braun & Clarke, 2021a; Braun & Clarke, 2022a; Braun & Clarke, 2022b; Braun & Clarke, 2023) (Table 33). RTA is a more recent version of the 2006 Braun and Clarke's thematic analysis, in which the authors have acknowledged that several components of the approach were open to interpretation, due to a lack of definition (Braun & Clarke, 2006; Braun & Clarke, 2019; Braun & Clarke, 2022a; Braun & Clarke, 2022b; Braun & Clarke, 2023; Byrne, 2021). The original approach (Braun & Clarke, 2006) did not explore the researcher's active contribution to knowledge production. This led to RTA, whereby misconceptions and the active role of the researcher were addressed (Byrne, 2021).

RTA offers a flexible interpretive lens to analyse data, facilitating an identification of patterns, meanings and themes across a data set (Braun & Clarke, 2021a; Braun & Clarke, 2022a; Braun & Clarke, 2022b). RTA lends itself well to pragmatism and the multimethods methodology, as the development of themes can align to actionable items (Campbell et al., 2021). RTA thus takes a largely inductive approach yet considers an awareness of the literature prior to the study and stakeholder involvement (Braun & Clarke, 2022b).

As RTA is not aligned to any epistemological assumptions, it allows the freedom to reflect and engage with the data, recognising individual values and positionality and aiding pragmatic application (Braun & Clarke, 2019; Braun & Clarke, 2022a; Braun & Clarke, 2022b). This reflects the philosophical position taken for this thesis, in which pragmatism adopts a

‘what works’ approach to data analysis, recognising the ability to flexibly respond to the needs of the data, in relation to a particular research question (Long et al., 2018; Weaver & Olsen, 2006).

A strength of RTA is that the approach is iterative in nature, meaning the candidate is able to respond to the needs of the data and develop future questions based on the data at hand. This ensures data is relevant to the research question, as well as ensuring the ability to adequately construct meaning from the data (Braun & Clarke, 2019; Braun & Clarke, 2022a; Braun & Clarke, 2022b). However, Holloway & Todres (2003) argue that the flexibility of thematic analysis can lead to inconsistencies and a lack of coherence when developing themes.

RTA involves an analysis of data, both descriptively (explicitly stated themes, face-value) and interpretatively (implicit, underlying meaning) to ensure all meanings are encapsulated. These terms vary in the literature, utilising terms such as semantic and latent, but for the purpose of this thesis, the terms ‘descriptive’ and ‘interpretative’ were used (Byrne, 2021).

The approach to data analysis was inductive in nature, and required a process of coding data which did not have to fit into a pre-existing coding framework (Sim & Wright, 2000; Bendassolli, 2013). In this sense, this form of thematic analysis is data driven, and does not aim to prove or disprove a theory (Braun & Clarke, 2022a; Braun & Clarke, 2022b). A deductive approach was not considered due the difficulties in inferring a conclusion from a lack of widely accepted facts or premises surrounding the topic (Fife & Gossner, 2024).

Thus, RTA (Braun & Clarke, 2021a; Braun & Clarke, 2022a; Braun & Clarke, 2022b) was the most appropriate method to analyse this data set, in comparison to framework analysis. Framework analysis posits a theoretical underpinning, seeking to draw descriptive and/or explanatory conclusions centred around themes and a specific identified framework (Gale et al., 2013). Instead, the flexibility RTA employs, allows for ideas to emerge regardless of a theoretical underpinning (Braun & Clarke, 2022a; Braun & Clarke, 2022b). Therefore, interviewing of HCPs in separate roles means using RTA is not reduced to a framework or particular theory (King, 2004; Nowell et al., 2017).

### **7.7.2 Data analysis methods**

The process of RTA followed six-stages but remained iterative in nature, in which data collection and analysis were undertaken concurrently (Braun & Clarke, 2022a; Braun & Clarke, 2022b).

Initial considerations included what counts as a theme; a rich description of the data set; or a detailed account of one particular aspect, inductive vs. deductive thematic analysis, and descriptive and interpretative themes.

Descriptive codes were developed when meaningful descriptive data was interpreted, and equally interpretative codes were produced when meaningful interpretative data was interpreted (Braun & Clarke, 2022b; Byrne, 2021). Therefore, double coding at descriptive and interpretative levels of data occurred due to the level of interpretation necessary (Patton, 2002). This reflects the pragmatic nature of the analysis

employed, responding to the needs of the data set, considering the meaning constructed by the participant and the interpretation of the meaning as a researcher (Braun & Clarke, 2022b; Byrne, 2021). Further details on how RTA was carried out is described below (Table 33).

My interview reflexive diary was kept, as recommended by Braun and Clarke (2022a; 2022b) to capture all interpretations, ideas and reflections, which may or may not impact on further data collection and/or analysis (Appendix 18).

Table 33: Phases of RTA (Braun & Clarke, 2022a; Braun & Clarke, 2022b)

Stages	Description	Interview study process
<b>Phase 1:</b> <b>Familiarising</b> <b>yourself with the</b> <b>dataset</b>	Reading and re-reading the data (transcripts), transcription by the candidate, listening to the recordings to check for accuracy, establish familiarity, note down initial ideas as memos	<ul style="list-style-type: none"> <li>• <i>Three processes: immersion, critical engagement and note-taking</i></li> <li>• <i>Transcribing data, verbatim, from dictaphone into Microsoft Word, make initial notes (memos) in a separate document in Microsoft Word</i></li> <li>• <i>State researcher positionality at the start of analysis</i></li> <li>• <i>Analytical sensitivity – reflection on developing this throughout the interview study</i></li> <li>• <i>Note-taking on the whole familiarisation of the dataset i.e. how well the data fits amongst the research question etc.</i></li> </ul>



Stages	Description	Interview study process
<b>Phase 2: Coding</b>	Coding in a systematic fashion across the entire data set, collecting data relevant to each code, coding of descriptive content, all data was relevantly coded	<ul style="list-style-type: none"> <li>• <i>Coding using the 'new comment' function on Microsoft Word</i></li> <li>• <i>Code descriptive content</i></li> <li>• <i>Iterative process</i></li> </ul>
<b>Phase 3: Generating initial themes</b>	Gathering codes into potential themes through several iterative processes, collating all relevant data to each potential theme, a central organising concept determined for a set of codes, generation of interpretative themes	<ul style="list-style-type: none"> <li>• <i>Group codes into central organising concepts</i></li> <li>• <i>Ensure all data is included</i></li> <li>• <i>Several iterative processes (first order codes, second order codes, third order codes, fourth order codes)</i></li> <li>• <i>Generation of initial interpretative themes</i></li> <li>• <i>Researcher positionality</i></li> </ul>

Stages	Description	Interview study process
<b>Phase 4: Developing and reviewing themes</b>	Review the themes against the coded extracts (phase 1) and the entire data set (phase 2), ensuring all themes meaningfully capture the data, generating a 'thematic map' of analysis	<ul style="list-style-type: none"> <li>• <i>Ensure themes accurately reflect the codes included in theme</i></li> <li>• <i>Generate a 'thematic map' of analysis</i></li> </ul>
<b>Phase 5: Refining, defining and naming themes</b>	Ongoing analysis to refine the specifics of each theme, the overall story the analysis tells, and generating clear definitions and names for each theme	<ul style="list-style-type: none"> <li>• <i>Refine themes, provide a definition and name for each theme</i></li> <li>• <i>View themes in relation to the research question</i></li> </ul>
<b>Phase 6: Writing up</b>	Final opportunity for analysis to produce a scholarly report of the analysis	<ul style="list-style-type: none"> <li>• <i>Write up analysis results as a component within the thesis</i></li> <li>• <i>Quotes to support findings</i></li> </ul>

*Phase One: Familiarisation with the data set* – All interviews were manually transcribed verbatim, directly from a dictaphone into Microsoft Word, immersing myself in the data, by listening, reading and re-reading all transcripts and to ensure accuracy of transcription. Initial observations and thoughts were recorded in the form of memos, and my interview reflexive diary was used to track thought processes (Appendix 18). This allowed me to critically engage with the data, with analytical sensitivity, whilst ensuring my positionality was recognised. My positionality statement was started at the beginning of the analysis and was iteratively updated throughout this process (Appendix 19) (Savolainen et al., 2023). This referred to previous academic study, current clinical work, personal characteristics, ‘insider/outsider’ influences (Bourke, 2014; Yip, 2023), and internal perceptions, which may shape the research process. In order to enhance trustworthiness of the analysis process, storage of both the original and redacted transcripts are stored in well-organised files on the university secured drive, as per ethics protocol.

*Phase Two: Coding* – Descriptive codes were noted using the ‘new comment’ function on Microsoft Word, and each were coded by participant. Examples of this can be found in Appendix 39. Although, there was no weighting on the importance of descriptive and interpretive codes, the codes were initially, mainly descriptive.

As the analysis process progressed, codes became more interpretative in nature, as quotes from participants started to be highlighted. Data was also double coded i.e. having both an interpretative and descriptive code attached. This was an iterative process, and I sought to find alternative

ways to code, including coding from bottom up, to ensure a pattern of thought was not consistently followed. Although there were no *a priori* ideas concerning the codes, I was aware of the background literature around virtual and face-to-face group consultations at this stage. Discussions with the SAG also highlighted the importance of group dynamics, practice mechanisms and facilitation. As an impact of this, questions were added to the topic guide to address these areas. Therefore, it is noted that the analysis process cannot be purely inductive, however, I aimed to maintain a position of 'empathetic neutrality' (Patton, 2002) when constructing codes and engaging with the data. Maintaining 'empathetic neutrality' allows me to sit in *'the middle ground between becoming too involved, which can cloud judgement and remaining too distant, which can reduce understanding'* (Patton, 2002, p.50). My interview reflexive diary was kept to maintain awareness of how this knowledge, thoughts, beliefs and experiences could influence the analysis. Further details can be found in Appendix 18 and Appendix 19.

Whilst iterative consideration of patterns in the data had been noted and reflected upon after each interview, coding began after the first eight interviews had been completed and 1836 codes were developed. Codes were then constructed from interviews nine and ten, creating 2478 codes in total. The last iteration of coding combined interviews 1-10 with interviews 11-14, creating 3526 codes. The 3526 codes (interviews 1-14) were known as first order codes, considered as the first identification of distinct concepts and categories in the data.

When all of the first order codes were collated, 3526 codes were transferred from Microsoft Word to a Microsoft Excel spreadsheet. Codes were categorised into columns relevant to each participant, with an

assigned colour to keep track of codes. Excerpts of this can be seen in Appendix 40.

The first eight interviews were transcribed and initially analysed by myself. Three of these transcripts were then shared with the wider supervisory team for initial coding (n=3). This initial coding and development of ideas led to the topic guide being modified prior to further data collection. For example, questions related to measuring the impact of VGCs were further elaborated to encapsulate views related to the research question.

*Phase Three: Generating initial themes* – The initial iteration of coding (1836 codes – interviews 1-8) was iteratively combined into central organising concepts, in which 22 concepts were constructed. A central organising concept is defined as a concept which captures and summaries the core point of a coherent and meaningful pattern in the data (Braun & Clarke, 2019). A second iteration (1836 codes – interviews 1-8) of the first central organising concepts were then combined into 21 central organising concepts. The third iteration (2478 codes – interviews 1-10) added a further three central organising concepts, creating 24 central organising concepts in total. The last iteration (3526 first order codes – interviews 1-14) totalled 25 central organising concepts. Several iterations of central organising concepts allowed for rethinking and reformulation of existing central organising concepts, as well as the development of new central organising concepts.

Central organising concepts were not used as a framework but were inductively constructed based on meaning and commonalities in the data.

Central organising concepts served to be descriptive identifiers of the data and therefore were not used to formulate themes in and of themselves but used as sub-themes across a wide analysis of the data according to meaning.

The removal of duplicates within the 25 central organising concepts left 2554 codes (second order codes). Second order codes were larger groupings of first order codes based on a similar concept and/or meaning. The decision to de-duplicate codes based on central organising concepts rather than individual participant was made to account for the commonalities of codes relating to different central organising concepts. For example, 'time' as a concept was viewed in relation to the time involved with VGCs, however, if time had been de-duplicated based on individual participants, 'time' may have been reduced to a single meaning, rather encapsulating multiple meanings of the word 'time', such as, time taken to implement VGCs, or timings of VGCs or time in relation to context. This would have been reductionist in the sense that codes would have been refined and would not encapsulate the totality of meaning involved.

From the 2445 codes, 25 central organising codes were maintained. Codes were grouped together based on meaning and a shared common idea to form 309 larger clustered codes (third order codes), aligned to the 25 central organising concepts (Appendix 41). Larger clustered codes were defined as third order codes.

From 309 larger clustered codes, codes were further grouped together based on meaning to form 131 clustered codes (fourth order codes). Fourth order codes were considered as more refined than third order

codes, in which further groupings of codes were made based on similar patterns of meaning.

The 131 clustered codes were then re-grouped according to shared meaning, for example, codes such as 'timings', 'practicalities', 'attendance' and 'recruitment' were grouped under the wider central organising concept 'Logistics'. This resulted in the formulation of ten central organising concepts: Context; Conceptualisation; Added Benefit; Buy-In; Resources; Capacity; Logistics; Dynamics; Evaluation; and Sustainability. These initial central organising concepts and their corresponding codes are included in Appendix 41 and Appendix 42.

Documentation of the decisions made, with regards to grouping of codes to form central organising concepts, was maintained in an analysis of coding journal (Appendix 41).

*Phase Four: Developing and reviewing themes* - The ten central organising concepts were reviewed and checked with the data to ensure all meanings were encapsulated, the concepts appropriately described the data and addressed the research question. A thematic map was formed of the ten central organising concepts and 131 clustered codes to begin to visually think about potential themes and subthemes across the dataset (Appendix 42).

After consideration of the potential subthemes and themes based on connections made through visualisation of the thematic map, it was apparent that the central organising concepts developed were not clear cut, and there was a great amount of repetition or overlap between

concepts. This inferred that the themes remained mainly descriptive in nature.

Through reflection and discussion with the supervisory team regarding the ten central organising concepts, further refinement and interpretation of the concepts was considered. A second thematic map was created to visualise this refinement (Figure 34). This process resulted in the refinement of the ten central organising concepts to four more interpretative themes: Context as a driver vs, restriction (Context, Capacity), Conceptual Participation (Conceptualisation, Buy-in), Logistics (Resources, Logistics, Dynamics), and Evaluation (Added Benefit, Evaluation, Sustainability). From the four interpretative themes, 19 sub-themes were constructed to accurately encapsulate the variation in data within one theme. Reasons why the central organising concepts were grouped into each theme is provided in Appendix 41.

As RTA is not viewed as a linear process, I started to write the analysis up in order to conceptualise how each of the four themes were defined and linked (Figure 35). An iterative checking of codes was conducted throughout the formulation of interpretative themes. This process led to a further iterative, interpretative development of themes, creating four themes and 13 sub-themes.



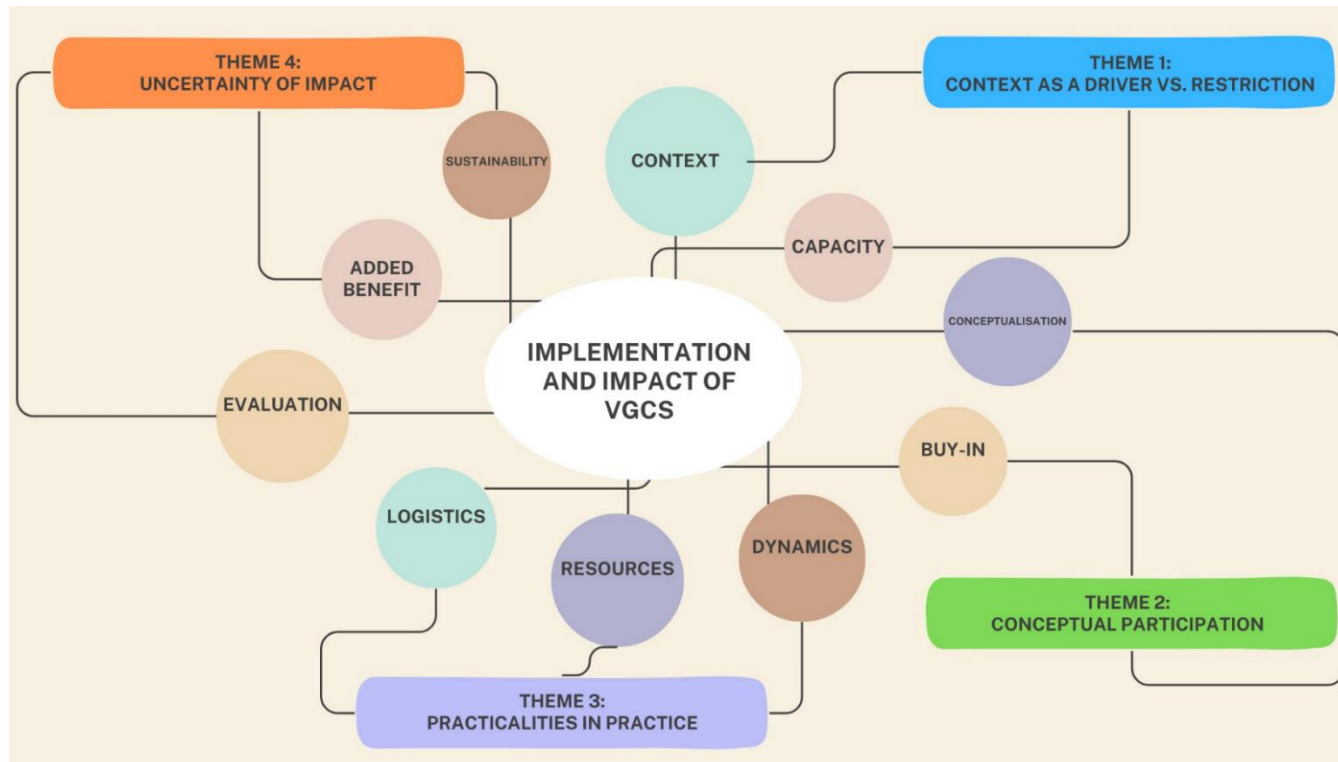


Figure 34: Clustering of central organising concepts

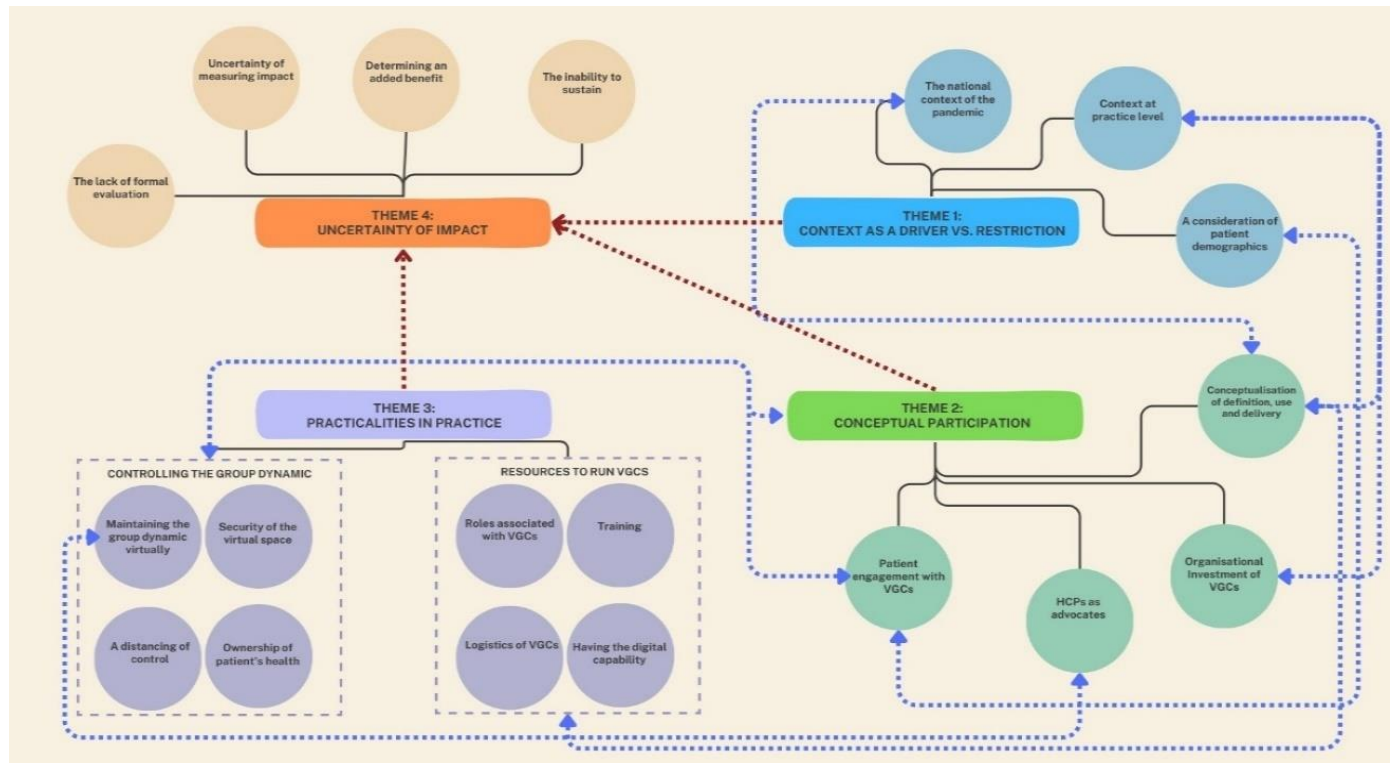


Figure 35: Links made between themes

*Phase Five: Refining, defining and naming themes* - The four interpretative themes, as well as their definition, boundaries and relationships, were discussed with the supervisory team. Themes were renamed: The context of implementation; Conceptualising implementation; The process of implementation, and Capturing impact.

Refinement of subthemes also led to 13 interpretative sub-themes. Discussion on the sub-themes more specifically confirmed accurate representation of the data within each theme. Subthemes were discussed as providing the theme with more interpretative depth, amongst a heterogeneous data set. Boundaries were clearly defined amongst themes and sub-themes. Examples of themes, sub-themes and quotes can be found in Appendix 43.

*Phase Six: Writing up* - The writing up phase was viewed as a way to enhance the analysis process, whereby further thinking and interpretation of the data was required. A final thematic map was created to illustrate the relationship between the themes and subthemes. Quotes were used throughout the writing up stage to support interpretation of data and formulation of themes (Appendix 43).

### **7.7.2.1 Trustworthiness**

Trustworthiness of the analysis process was guided by a step-by-step approach provided by Nowell et al. (2017). Although, originally conceptualised based on Braun & Clarke's 2006 iteration of thematic analysis, the principles of the approach can still be applied to the more refined reflexive approach (Nowell et al., 2017) (Table 34). Nowell et al. (2017) used the trustworthiness criteria outlined by Lincoln and Guba (1985) to provide a practical guide for conducting thematic analysis and maintaining trustworthiness. Consideration of the trustworthiness criteria by Lincoln and Guba (1985) is reported in section 7.8.

This was maintained by discussing codes within the supervisory team and coding of transcripts by members of the supervisory team to account for similarities and differences in interpretation. A separate analysis meeting was conducted to share thoughts and interpretations in a group. A coding spreadsheet was used to maintain an audit trail of interpretation (Appendix 40). Documentation of all supervisory meetings and analysis meetings were also maintained.

Table 34: Establishing trustworthiness during each phase of thematic analysis (Nowell et al., 2017)

Phases of thematic analysis	Means of establishing trustworthiness	Application to RTA
<b>Phase 1:</b> <b>Familiarizing yourself with your data</b>	<ul style="list-style-type: none"> <li>• Prolonged engagement with the data</li> <li>• Triangulate different data collection modes</li> <li>• Document thoughts about potential codes/themes</li> <li>• Store raw data in well-organised archives</li> <li>• Keep records of all data field notes, transcripts and reflexive journals</li> </ul>	<ul style="list-style-type: none"> <li>• Transcribed by the candidate themselves to increase engagement with the data</li> <li>• Reflexive diary and positionality statement iteratively updated throughout the process</li> <li>• Initial thoughts documented about each interview after each individual interview was conducted</li> <li>• Uploaded raw transcription to a private file on the university drive</li> <li>• All notes, transcripts and reflexive journals stored on the university drive</li> </ul>

Phases of thematic analysis	Means of establishing trustworthiness	Application to RTA
<b>Phase 2:</b> <b>Generating initial codes</b>	<ul style="list-style-type: none"> <li>• Peer debriefing</li> <li>• Researcher triangulation</li> <li>• Reflexive journalling</li> <li>• Use of a coding framework</li> <li>• Audit trail of code generation</li> <li>• Documentation of all team meeting and peer debriefings</li> </ul>	<ul style="list-style-type: none"> <li>• Debriefing with supervisory team periodically throughout the interviews</li> <li>• Initial coding of a number of transcripts by all members of the supervisory team</li> <li>• Maintained a reflexive diary throughout</li> <li>• Microsoft Excel used to create an audit trail of code generation</li> <li>• All documentation of supervisory meetings and analysis meetings noted</li> </ul>
<b>Phase 3: Searching for themes</b>	<ul style="list-style-type: none"> <li>• Researcher triangulation</li> </ul>	<ul style="list-style-type: none"> <li>• Themes developed in discussion with supervisory team</li> </ul>

Phases of thematic analysis	Means of establishing trustworthiness	Application to RTA
	<ul style="list-style-type: none"> <li>• Diagramming to make sense of theme connections</li> <li>• Keep detailed notes about development of hierarchies of concepts and themes</li> </ul>	<ul style="list-style-type: none"> <li>• Thematic maps to aid visualisation of theme connections</li> <li>• Analysis decisions documented to demonstrate the development of themes</li> </ul>
<b>Phase 4: Reviewing themes</b>	<ul style="list-style-type: none"> <li>• Researcher triangulation</li> <li>• Themes and subthemes vetted by team members</li> <li>• Test for referential adequacy by returning to raw data</li> </ul>	<ul style="list-style-type: none"> <li>• Themes reviewed within the supervisory team and with agreed consensus</li> <li>• Re-reading of the original transcripts to ensure validity</li> </ul>
<b>Phase 5: Defining and naming themes</b>	<ul style="list-style-type: none"> <li>• Researcher triangulation</li> <li>• Peer debriefing</li> </ul>	<ul style="list-style-type: none"> <li>• Themes defined and named within the supervisory team</li> </ul>

Phases of thematic analysis	Means of establishing trustworthiness	Application to RTA
	<ul style="list-style-type: none"> <li>• Team consensus on themes</li> <li>• Documentation of team meetings regarding themes</li> <li>• Documentation of theme naming</li> </ul>	<ul style="list-style-type: none"> <li>• Supervisory meetings and analysis meetings to ensure appropriate debriefing</li> <li>• Consensus obtained regarding final themes</li> <li>• Documentation of all supervisory meetings maintained</li> <li>• Documentation and audit trail of theme naming</li> </ul>
<b>Phase 6: Producing the report</b>	<ul style="list-style-type: none"> <li>• Member checking</li> <li>• Peer debriefing</li> <li>• Describing process of coding and analysis in sufficient details</li> <li>• Thick description of context</li> <li>• Description of the audit trail</li> </ul>	<ul style="list-style-type: none"> <li>• Report to be shared to participants that had consented (when published)</li> <li>• Regular supervisory meeting during the producing the report phase</li> <li>• In-depth documentation of the analysis process and the decisions made maintained</li> </ul>



Phases of thematic analysis	Means of establishing trustworthiness	Application to RTA
	<ul style="list-style-type: none"> <li>• Report on reasons for theoretical, methodological, and analytical choices throughout the entire study</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptions of themes and subthemes included</li> <li>• Description of the process of RTA taken</li> <li>• Reported on the methodological and theoretical decisions made throughout the study</li> </ul>

## **7.8 Data reporting**

It is widely accepted that qualitative data should be reported, considering trustworthiness of the study, not with the purpose to establish a quantitative measure of reliability and validity but rather as a means of explanation and generating understanding (Denzin & Lincoln, 2005; Stenbacka, 2001).

In general, Lincoln & Guba (1985) argue that the most appropriate terms in qualitative paradigms relate to the notions of dependability, transferability, credibility and confirmability. Lingard (2019) also introduces the concept of authenticity in relation to qualitative research and data reporting. In relation to this study, these notions will be considered.

### **7.8.1 Dependability**

Dependability can be addressed by providing rich descriptions of the research procedures used so other researchers are able to collect data in a similar fashion (Leung, 2015; Given, 2008). The importance of clearly stating the research methods and procedures is essential for qualitative reliability (Leung, 2015).

To ensure dependability in this study:

- The interview procedure and data analysis process was documented clearly
- The profile of participants was clearly explained
- Interview topic guides are included as an appendix to this thesis
- Constant data comparison and discussions with the supervisory team

### **7.8.2 Transferability**

Transferability is not considered to be a key construct of qualitative research, rather seeking to provide in-depth insights of participants (Leung, 2015). However, transferability in a qualitative contexts refers to how well a study's findings inform contexts that are different from the context to which the original study was conducted (Green & Thorogood, 2018). In this thesis, this refers to the transferability of results to different contexts e.g. primary care contexts.

Lincoln and Guba (1985) argue that the prospect of transferability can be enabled by researchers providing a rich description of the data collection processes. This includes providing information about the participants and practices taking part in the study, the inclusion and exclusion criteria, number of participants involved, data collection methods used and the time period over which the data was collected (Elo et al., 2014; Stalmeijer et al., 2024). The transferability of this study has also been enhanced by the use of purposive, random and snowball sampling, aiding the capturing of a representative sample of the population.

### **7.8.3 Credibility**

Credibility in relation to qualitative research refers to the extent to which the data represents social reality (LeCompte & Goetz, 1982). It is concerned with research methodology to ensure there is harmony between the data and the researcher's interpretations. McMillan & Schumacher (2006) pose a list of strategies to enhance the credibility of a study including: accurately describing the data, citing negative cases,

using multiple researchers to review and critique the analysis, and conducting member checks.

To ensure credibility in this study:

- The principles of RTA guide the discussion of results using a systemised approach
- Unexpected concepts or issues with data analysis were discussed with members of the supervisory team
- Themes were not merely descriptive of key elements of the dataset but consisted of patterns of shared meaning across the data set (Braun & Clarke, 2019).

#### **7.8.4 Confirmability**

Confirmability refers to the correct conceptual operational measure, in which the researcher must question whether they are truly measuring what they intended to measure, or recording something else (Tashakkori & Teddlie, 1998). The candidate therefore addresses confirmability through the use of multiple coders and transparency of data analysis. Whilst an RTA (Braun & Clarke, 2021a) has been conducted, influences of the researcher on the analysis process has been provided to ensure confirmability is maintained.

#### **7.8.5 Authenticity**

Authenticity can be defined as the extent to which researchers fairly demonstrate a range of realities (Elo et al., 2014). The need to be authentic, illustrated by Lingard (2019), is considered as a guiding

principle for qualitative research to ensure a valid data set. The choosing of appropriate quotes was considered to be a way to ensure authenticity, based on three parts:

1. Is the quote illustrative of the point the researcher is trying to make about the data?
2. Is the quote succinct?
3. Is the quote representative? (Lingard, 2019).

Lingard (2019) refutes the use of the colon as it doesn't contextualise or interpret the quote, rather situates it within the body of text. Therefore, there is careful consideration of how quotes are reported within this thesis.

## **7.9 Reflexivity**

### **7.9.1 Bracketing**

Exploratory research in healthcare recognises the role of the researcher at all stages of the research process and acknowledges that research cannot be value-free due to the intrinsic impact of this position on the research itself (Carr, 2000). Whilst it can be argued that exploratory research can never be value free, the acknowledgement of this position, aiming to understand potential influences in and on the research project, can provide a further dimension to the research, rather than trying to remove this effect (Darwin Holmes, 2020). The use of RTA (Braun & Clarke, 2021a) recognises my personal influence on the analysis process and is a key consideration throughout the thesis. My reflexive diary was kept through the entirety of the interview study, and my positionality

statement was established to acknowledge my role in qualitative data analysis and reporting (Appendix 18; Appendix 19) (Savolainen et al., 2023).

Bracketing is a useful tool used to mitigate the potential adverse effects of unacknowledged preconceptions, promoting methodological rigor and trustworthiness from qualitative conclusions drawn (Fischer, 2009). This can aid the reflexivity process, which can be defined as '*a turning back on oneself, a process of self-reference*' (Davies, 1999, p. 4). The reflexive process can thus have great significance for healthcare delivery, in order to construct insightful interpretive accounts which can enrich understanding and generate rich lived experiences of clinicians alike (Peat et al., 2019). Identifying my positionality in relation to the research question has helped me to understand potential biases and influences which may impact the research, and therefore careful consideration of these influences was maintained.

### **7.9.2 Researcher positionality**

Positionality refers to an individual's world view and the position they adopt about research with regards to a particular research study (Savin-Baden & Major, 2013; Darwin Holmes, 2020). The individual's world view incorporates a particular ontological and epistemological stance which influences how the research is conducted, its outcomes and results (Darwin Holmes, 2020).

My positionality statement was iteratively developed throughout the research, to ensure adequate reflection of my own position in relation to

the epistemological and ontological views of the research (Appendix 19) (Savolainen et al., 2023). This positionality statement referred to previous academic study, current clinical role, personal characteristics, 'insider/outsider' influences (Bourke, 2014; Yip, 2023), and internal perceptions which may shape the research process.

## **7.10 Ethical considerations**

### **7.10.1 Approvals and amendments**

The semi-structured interview study was approved by the Faculty of Medicine and Health Sciences Research Ethics Committee at Keele University (reference 2022-0312-315) on 12<sup>th</sup> October 2022 (Appendix 44). No further ethical approval i.e. HRA/NHS ethics was needed due to the means of recruitment. HRA was not required for this study as advice was sought from NIHR Clinical Research Network West Midlands Study Support Service Team. Appendix 32 outlines the use of the NIHR '*Do I need NHS REC review?*' result.

An amendment was approved on 19<sup>th</sup> April 2023 proposing changes to the sample size, increased from ten to 20 HCPs (Appendix 44). Further discussion of the sample size for this study is included in section 1.6.4.

### **7.10.2 Consent and withdrawal**

Participants were able to withdraw from the study at any point before or during the interview and up to two weeks following the interview date, without giving a reason. Agreement for quotations to be used in the

reports of the study could have been withdrawn by contacting the researcher. However, no participants withdrew from the study.

### **7.11 Chapter summary**

This chapter has presented a detailed account of the justification and selection of methods used in this part of the study. The following chapter presents the findings of the semi-structured interview study focusing on the experiences of HCPs implementing VGCs in primary care general practice.



# **Chapter 8: Semi-structured interview results**

---

## **Chapter 8: The implementation and impact of video group consultations by healthcare professionals in primary care general practice: a semi-structured interview study.**

---

### **8.1 Introduction**

The previous chapter outlined the methods used to conduct the semi-structured interview study, focusing on the implementation and impact of VGCs by HCPs in general practice. This chapter presents the results of this component, providing a greater exploration of the ways in which VGCs are used, understood and implemented in practice, complementary to the findings identified in Chapter 6. More specifically, this chapter focuses on the ways in which VGCs are implemented into primary care and the subsequent impact the approach has for the practices, HCPs and patients alike.

Firstly, a brief overview of the methods used, as provided in Chapter 7 in detail, and the context for this chapter is explored. This is followed by a detailed account of thematic findings, a discussion in the context of the wider literature, identification of the strengths and limitations of the study, an account of reflexivity and concluding with a chapter summary.

### **8.2 Overview of the method used**

A detailed account of the study method is provided in Chapter 7. A semi-structured interview study was undertaken to explore the implementation and impact of VGCs by HCPs in primary care general practice. The overall aim of the interview study was to understand the barriers and facilitators associated with the approach from the perspective of clinical

HCPs and non-clinical general practice staff. The development of the interview topic guide and the analysis process was influenced by stakeholder engagement and PPIE. An analysis of the semi-structured interviews, presented in this chapter was conducted. My reflexive journal was kept updated throughout the research process, keeping an active audit trail of decisions made in the analysis phase (Appendix 45).

## **8.3 Results**

### **8.3.1 Sample size**

In order to obtain an adequate sample size for this study, both 'data saturation' and appraisal of 'information power' were considered throughout (Braun & Clarke, 2021b; Malterud et al., 2016; Saunders et al., 2018). After conducting eight interviews, it was apparent that no new themes were able to be developed and therefore, 'data saturation' was achieved (Saunders et al., 2018).

However, appraisal of 'information power' was conducted after each interview, which focused on the depth of knowledge obtained from participants rather than the number of participants, which subsequently determined an adequate sample size for the research question. After conducting the eighth interview, considering 'information power' in achieving saturation, the need to further explore the views of HCPs was evident to answer the research question, which led to a refining of the topic guide. The topic guide was therefore refined after eight interviews and a decision to only include HCPs in the sample was made after a total of ten interviews. This led to a further four interviews, which totalled a

sample size of 14 HCPs. Further discussion regarding the study population and sample size is included in section 1.6.3 and section 1.6.4.

### **8.3.2 Sample**

A total of 14 clinical HCPs and non-clinical general practice staff participated in this semi-structured interview study. Of these participants, eight agreed to take part via email, and six were recruited via social media. Three participants were a result of a snowballing of emails, and one participant learnt about the study after being tagged on Twitter by a colleague. All interviews were conducted using MS Teams between 06/02/2023 and 13/07/2023 and in duration, lasted around 19:50 to 57:10, with an average of 34:50 (median).

### **8.3.3 Participant characteristics**

Participants were based in seven geographical regions across the UK. Twelve females and two males took part in the study. Table 35 describes participants' professional roles and Table 36 states the length in current role and years qualified (if applicable). Three non-clinical roles and 11 clinical HCPs participated in the study, with a varied length in current role and years qualified from 0-25+ years.

Table 35: Participant roles

Role	Participants (n=)
<b>Non-Clinical</b>	
NHS Manager	2
Trainer of VGCs	1
<b>Clinical</b>	
Pharmacist	2
Health and Wellbeing Coach	1
General Practitioner	3
Advanced Nurse Practitioner	1
General Practice Nurse	3
Dietician	1

Table 36: Length in current role and years qualified

Length in Current Role	Participants (n=)
0-5 years	5
5-10 years	5
10-15 years	2
15+ years	2
<b>Years Qualified (if applicable)</b>	<b>Participants (n=)</b>
0-10	1
10-15	2
15-25	3
25+ years	5
N/A	3

Participants were given an anonymised participant identification number and a role descriptor e.g. P01\_GP as an identifier after transcription had been completed.

The role descriptors for participants are outlined below in Table 37.

*Table 37: Participant role descriptors*

<b>Role</b>	<b>Participant Identification Number</b>
<b><i>Non-Clinical</i></b>	
<b>NHS Manager</b>	NC
<b>Trainer of VGCs</b>	NC
<b><i>Clinical</i></b>	
<b>Pharmacist</b>	P
<b>Health and Wellbeing Coach</b>	HWC
<b>General Practitioner</b>	GP
<b>Advanced Nurse Practitioner</b>	ANP
<b>General Practice Nurse</b>	GPN
<b>Dietician</b>	D

### 8.3.4 Practice demographics

Participants reported practices from seven regions across the UK (Table 38), most predominantly from Yorkshire & The Humber and London. Practices also varied in size, ranging between 5000 to > 25,000 patients, with a mixture of deprived and affluent areas.

*Table 38: Practice demographics*

Practice Location	Number of Participants
North-West England	2
North-East England	1
West Midlands	1
South-East England	2
South-West England	1
London	3
Yorkshire & The Humber	4

Further practice demographics are included as table in Appendix 46.

## **8.4 Thematic findings**

### **8.4.1 Overview of final themes**

From the analysis described in Chapter 7, the following themes are reported in this chapter: The Context of Implementation; Conceptualising Implementation; The Process of Implementation; and Capturing Impact (Table 39; Figure 36). A table of themes with supporting quotations and thematic maps can be found in Appendix 42 and Appendix 43. Illustrative data is presented to support the interpretation, labelled with participant identifiers. Some data was sensitively redacted to ensure anonymity and readability, taking care to ensure the meaning of the data was not altered during this process.



Table 39: Final themes, sub-themes and associated definitions

Theme		Definitions
<b>THEME 1: THE CONTEXT OF IMPLEMENTATION</b>		<i>The context was both a barrier and facilitator of implementation on national (macro), practice (meso), and patient (micro) levels.</i>
<b>Subthemes</b>	1. The influence of the COVID-19 pandemic	<i>The influence of the COVID-19 pandemic upon implementation</i>
	2. The culture of general practice	<i>The ways in which the culture of general practice influenced implementation</i>
	3. Patient characteristics	<i>The influence of patient characteristics on implementation</i>
<b>THEME 2: CONCEPTUALISING IMPLEMENTATION</b>		<i>The ways in which VGCs are conceptualised, including the resources, staff motivations and patient engagement, which influenced implementation</i>
<b>Subthemes</b>	4. Conceptualisation of definition, use and delivery	<i>The ways in which HCPs define, use and deliver VGCs across general practice</i>
	5. Organisational resources	<i>The organisational resources required in operationalising the implementation of VGCs</i>
	6. Individual staff and group motivations	<i>The ability of HCPs to drive or hinder the implementation of VGCs</i>

Theme		Definitions
	7. Perceived patient engagement	<i>The ways in which patients are perceived to engage with VGCs</i>
<b>THEME 3: THE PROCESS OF IMPLEMENTATION</b>		<i>The practical considerations for HCPs to implement VGCs into practice</i>
Subthemes	8. Creating an optimum virtual group dynamic	<i>The ways in which an optimum group dynamic can be facilitated using a virtual platform</i>
	9. Processes and training	<i>The processes and training required in the process of implementation</i>
<b>THEME 4: CAPTURING IMPACT</b>		<i>The inability to evidence, measure and evaluate impact, creating uncertainty for implementation and sustainability</i>
Subthemes	10. Uncertainty of measuring impact	<i>The ways HCPs expressed uncertainty about measuring impact</i>
	11. The need for an evidence base	<i>The inability to determine a research evidence base on VGCs in general practice</i>
	12. Determining an added benefit	<i>The need to determine an added benefit to encourage implementation and sustainability of the approach</i>
	13. The adaptability to sustain	<i>The need to recognise the adaptability of VGCs in order to sustain the approach</i>

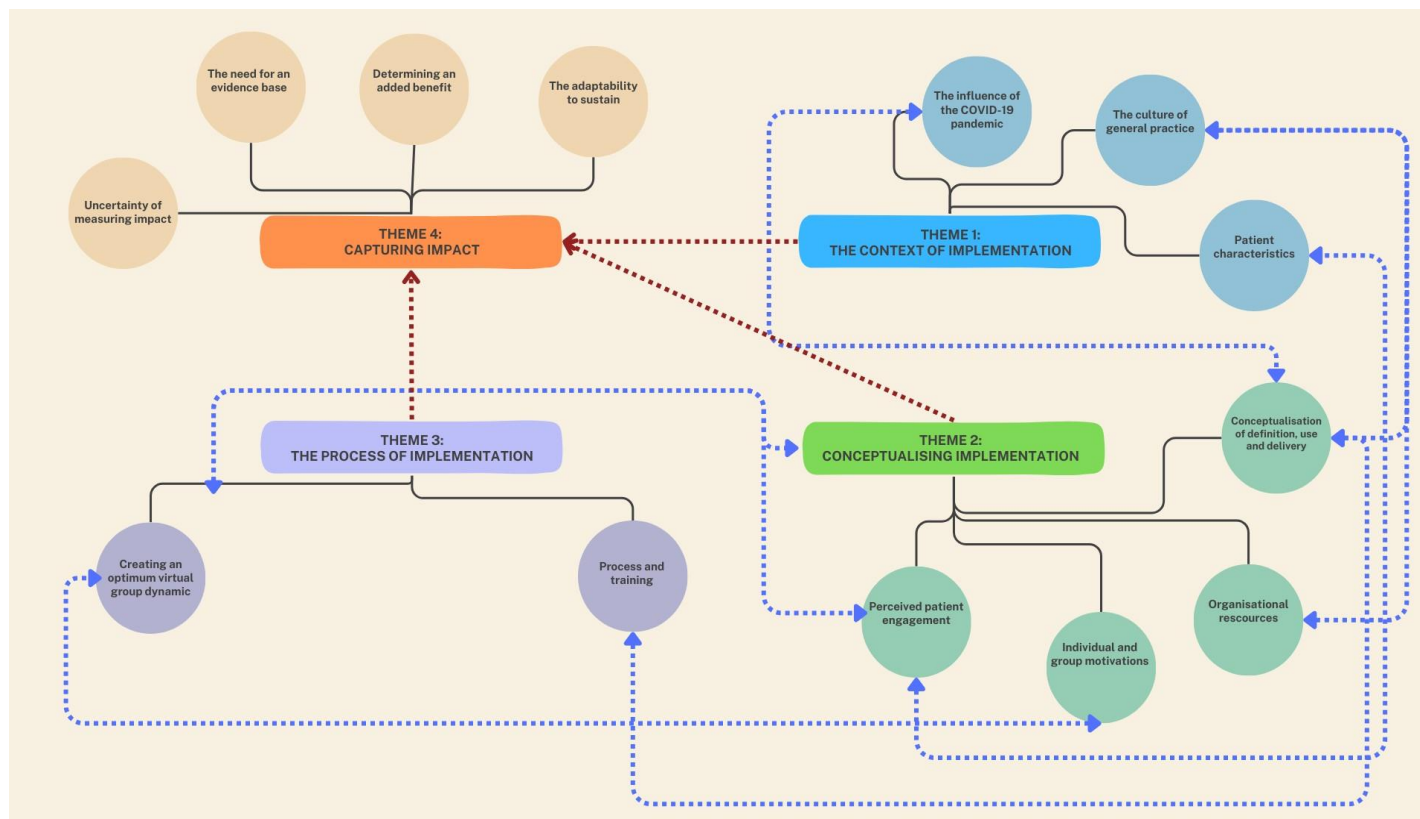


Figure 36: Final Thematic Map

## 8.4.2 Findings

### 8.4.2.1 The context of implementation

This theme highlights the contextual factors which influenced the implementation of VGCs within general practice. Contextual factors were reported on a macro, meso and micro level. The macro level refers to the national context of implementation; the meso level encompasses the organisational context of general practice; and the micro level refers to the individual context (Greenhalgh et al., 2018). A range of facilitators and challenges to implementation were identified at each level. Figure 37 provides a visual representation of these levels in relation to the context of implementation.

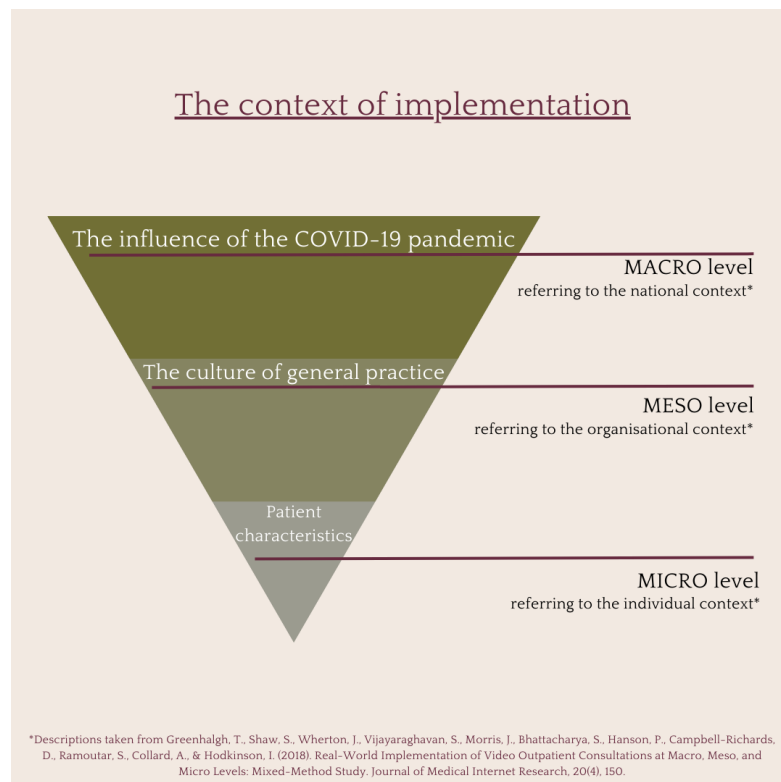


Figure 37: Contextual factors at a macro, meso and micro level

## The influence of the COVID-19 pandemic

The influence of the COVID-19 pandemic was both a barrier and facilitator to the implementation of VGCs.

Many participants discussed the ways in which the COVID-19 pandemic influenced how care was delivered in primary care general practice. These participants recognised the need to comply with social distancing policies which *'...forced health care to undergo rapid restructuring'* (P08\_ANP) and to prioritise necessary care and essential need, as articulated by Participant 13 in the following way:

*'...the pressures were huge as, as, I'm sure you'll remember, and, and so there's an awful lot of other things going on and a lot of other things having to kind of, having to take priority'*(P13\_GP)

This led a few participants to describe general practice as *'..a complete closed door'*(P02\_NC), leading to an increase in distanced and virtual models of care, with practices taking measures to deliver care remotely (via telephone or online) rather than in-person as a way to prioritise essential need. By prioritising essential need, delivery of care was also considered to become more 'transactional' in nature with

*'...a great deal of pressure on everybody's time just to do the things that actually tick boxes for things like quality outcome framework and...IIFs [Investment and Impact Fund] where we've got to prove that we're, you know, we're doing these different things'*(P09\_NC).

This was considered as a barrier to implementation due to increased pressures in general practice to complete routine care, which meant there

was little consideration for innovation and ability to initiate change in practice.

The data also suggests an apparent frustration regarding the prioritisation and streamlining of essential care, as *'...you know long-term conditions didn't go away during, during COVID, but they were parked. Why? Why did we do that?'*(P02\_NC). Several participants discussed the barriers in conducting LTC reviews using VGCs due to limitations in care that can be delivered virtually. Participant Nine stated,

*'...we hadn't got it set up to do long-term condition reviews because usually a long-term condition review involves having your bloods done first, having, you know, your weight checked or your BMI checked or whatever, and we weren't able to do those things'*(P09\_NC).

These considerations created variation in the ways in which LTC reviews were conducted and conceptualised using VGCs.

Despite some participants suggesting the influence of pandemic was a barrier to implementation, other participants acknowledged that the pandemic facilitated the introduction of VGCs as an *'accelerated'*(P02\_NC) response to the changes in service provision. VGCs were viewed as an opportunity to provide distanced care and to maintain contact with patients during the pandemic. Participant One stated, *'...it was a way of, of still looking after them without being able to see them...a way of keeping up that relationship with the patients that we'd lost, erm, because of COVID'*(P01\_GPN). VGCs were therefore used as *'...sort of self-support groups'*(P04\_NC), as a way to reduce isolation amongst patients caused by social distancing measures, depicted by Participant Seven in the following way:

*'...we saw these women who some of them hadn't been out of the house because, again, it was during COVID for quite a long time, or they've just been out, you know, for the walk that you could do, so they were quite isolated'(P07\_GPN)*

The perceived isolation faced by patients meant that practices used VGCs as a vehicle to maintain contact and manage patient care, down to fears of 'losing' patients during this time as a result of the virtual and distanced response prompted by the pandemic.

Overall, the contextual significance of the pandemic influenced the ability to implement VGCs on a national scale, highlighting the need for newer ways of working to meet the needs of the national context.

### **The culture of general practice**

The culture of general practice was considered to influence the implementation of VGCs due to restrictions in capacity at a practice level. Section 8.3.4 records practice demographics.

Most participants reported that there was an internal drive for alternative ways of working, caused by dissatisfaction with current ways of practice. Participant Three portrayed that the implementation of VGCs questioned existing service delivery, stating

*'...it just makes me really, really sad...it's made me dissatisfied with doing things as we are... it's made me think this isn't working what we're doing...it's made me want to do work differently' (P03\_GPN).*

The exhaustion described led several participants feeling that VGCs can bring people back together to make an impact on health outcomes, unlike usual care. This internal drive led HCPs to consider the culture of general practice as foundational to the implementation of VGCs.

Several participants acknowledged that despite an internal drive for change, the ability to implement practice level change still remains challenging, due *'...the negative, really negative thing that I think, which I don't like saying, but is, resistance to change in the NHS'(P03\_GPN)*. A lack of morale and agency to embody change at a practice level, coupled with the influence of the pandemic, was perceived to hinder the implementation of VGCs, as *'...I don't know maybe they wanna change, haven't got the energy'(P03\_GPN)*. This stemmed from a number of participants beliefs that *'...we're being pulled from pillar to post, we're just machines, we're just commodities'(P03\_GPN)*, due to the increased pressures facing primary care and the ways in which the pandemic influenced service provision.

Significantly, finding the 'breathing space', *'...at the same time as pandemic pressures... is very, very difficult practically'(P13\_GP)*. This was further illustrated by Participant Nine:

*'...we haven't got the time or the headspace for it at the moment. You need a breather to be able to look at what you're doing and realise that you could do it better and we don't have the breathing space'(P09\_NC)*

This highlighted several issues related to practice capacity which hindered the implementation of VGCs. In particular, Participant 13 highlighted the lack of backfill staff hindering the ability to implement VGCs:



*‘...they'll say to this person, can you do this for me? And that person can, but you've got to have that person and it's got they've got to have time to do it, they've got to have a dedicated time to do it’(P13\_GP).*

The need for more staff was identified, with several participants highlighting the use of the ARRS roles to deliver VGCs, as not considered to be burdensome on the practice attributable to allocated funding for these roles within national and local policies. The need for more staff, in particular nurses, was expressed by Participant Nine in the following way:

*‘...I think part of the problem in primary care is that there aren't enough people trying to do the day job and patient expectation and demand is, is enormous...we either need more staff or less patients, ideally both’(P09\_NC)*

A lack of capacity and the need for staff *‘to do the day job’(P09\_NC)* meant an increased accumulation of uncompleted work was described. This meant that practices were often *‘...on the back foot and we're getting more on the back foot all the time, takes a lot of effort to get on the front foot and then you can stay there and it gets easier’(P03\_GPN)*. The implementation of VGCs was therefore viewed as an additional pressure to routine practice, hindered by a lack of staff and increased work burden to facilitate newer ways of working.

Therefore, the context of general practice was viewed as a challenge to the implementation of VGCs, despite an inner need for change, there was a reported lack of capacity to consider alternative models of working due to the demands on general practice services. Seemingly practice demographics did not influence implementation, but some participants did report needing to adapt VGCs to individual patient populations.

## Patient characteristics

Patient characteristics such as languages spoken, age and levels of digital literacy influenced the implementation of VGCs.

A number of mixed ethnic populations were identified as having been involved with VGCs, based on the reported demographics of the practice population (Appendix 46). Several participants explained that English was some patients' second language or was not spoken at all. This was a barrier to the implementation of VGCs, with the need to provide an interpreter to facilitate the group, as Participant Twelve explained:

*'...we've realised that they [interpretation service] cut off after 15 minutes because, we believe, because the, the pay drops with the interpreters after 15 minutes....and you have to start again with the interpreter'(P12\_GP)*

These practical barriers created a sense that VGCs cannot be inclusive to all patient populations *'...because of language difficulties and because of poverty wouldn't be able to get online'(P07\_GPN)*. Therefore, several participants suggested, *'...a clinician that speaks that language would be really great'(P12\_GP)* to help to mitigate barriers created by the interpretation service and to increase the inclusivity and implementation of the approach.

Some participants reported that older patients were unfamiliar with VGCs as a consultation model. Participant Six stated *'...maybe that just generation just didn't like speaking to groups in that way as well'(P06\_P)*, due to the need to consult in the presence of a group. Whereas, for other participants, the age range of patients was not reported to be a

consideration in the implementation of VGCs, stating '*...we don't set a certain kind of age range or, or anything like that...anyone and everyone really, there's not kind of a specific sort of demographic*'(P11\_HWC). Many participants described the need for '*...bums on seats*'(P10\_GP) rather than capturing particular population demographics, as a way to demonstrate impact of the approach through increased attendance rates.

The need for a certain level of digital literacy was noted. Some patients' lack of digital literacy was reported by Participant Seven, highlighting that:

*'...it's quite basic stuff that [healthcare professionals] just can do automatically, but for [patients] it was something completely new to them in terms of knowing what to do with the technology'*(P07\_GPN).

The use of family members to provide technological assistance was described in the following way: '*...their son could actually come round and help them do it, whereas previously they were just a bit on their own, for a lot of people*'(P06\_P). The use of patient's support networks aided the accessibility and engagement with VGCs.

However, Participant Five expressed that '*...the people that have come to the video groups, the people that are, are a bit more familiar with technology*'(P05\_P), this perception was not shared by all participants. Patient access and use of technology was reported as contradictory, as often, patients were perceived to '*...kind of almost hide*'(P03\_GPN) limited access to technology, in which:

*'...it takes a while to work out, they have all got tech or if they've got a phone they haven't got much Internet or, and people don't like to say that*

*because everybody supposed to have it these days, aren't they?'*(P03\_GPN).

This created a deep concern for several participants regarding the inability to reach patients that need to be reached and the influence of society's expectations on patients' ability to engage with VGCs. Participant Nine stated, '*...you are not going to reach everybody and you're probably not going to reach the people you should reach'*(P09\_NC), as a result of sociodemographic factors impeding on the ability to implement VGCs across various patient populations.

Patient characteristics were therefore a key consideration for the ways in which VGCs were understood and implemented in practice.

### *Theme summary*

The context of implementation was considered to have an influence on a macro level related to the national impact of the pandemic, a meso level referring to the organisational culture of general practice and at a micro level focused on individual patient characteristics, shaping the ways in which VGCs were implemented. How the implementation of VGCs is conceptualised and understood is dependent on the contextual influences discussed.

#### 8.4.2.2 Conceptualising implementation

The conceptualisation of VGCs was explored, along with the use and delivery of VGCs, organisational resources required, individual and group motivations, and perceived patient engagement.

##### Conceptualisation of definition, use and delivery

Conceptualisation of VGCs led to variation in the use and delivery of the approach, subsequently impacting on how VGCs are implemented and understood in practice. Conceptualisations of VGCs were reported '*...as wide as it is long*'(P04\_NC) and are '*...almost down to the imagination*'(P04\_NC) of the clinician. Some participants perceived the lack of a 'standardised definition' positively and as a result, discussed being able to implement and adapt VGCs in a way which met the local context of the general practice in which they worked.

However, whilst the fluidity and adaptability of the approach was a driver of implementation for many participants, others suggested that a lack of an operational definition created a sense of uncertainty, as questioned by Participant 14 in the following way:

*'...so there's another form set in primary care, they do something called VGC's...so it's in a virtual group and it's a normal consultation, so it's a clinic consultation...I sort of amalgamated the two so it is like a clinic, cause all eight patients are there at once, but it's, it's not quite a normal group session because you know they are able to talk to each other. I guess it's the same isn't it?'*(P14\_D)

This uncertainty led to variation in the purpose of VGCs, as Participant One questioned, '*...are you gonna run it as an education session or are you gonna run it as you know an annual review?*'(P01\_GPN), identifying the distinction between the two approaches. Often terminology such as 'consultation' and 'group education' were used interchangeably to define VGCs. Yet implications for running VGCs differently were often depicted as contextually dependent.

This lack of a standardised definition was described as impacting the use of VGCs, reported to manage an '*endless*'(P07\_GPN) and '*exhaustive*'(P02\_NC) list of conditions. Conditions managed using VGCs are presented in Figure 38.



Figure 38: Conditions managed by VGCS

The reported variability in the use of VGCS as a delivery mechanism for LTC reviews was discussed. Some participants noted an absence of clinical monitoring as ‘...you can easily do one without the checks’(P01\_GPN). This contention between using VGCS for LTC reviews and the need to collect biometric, clinical data was highlighted

amongst many participants responses, creating ambiguity in defining the scope of VGCs for LTC reviews.

Likewise, conceptualising VGCs as a replacement for an annual review; an alternative model of consultation; or an addition to previously established model of care, created doubt amongst HCPs in the ways in which VGCs can be used and implemented. The majority of participants reported VGCs to be '*...another, erm, element of tool in the box*'(P02\_NC), predominantly used as an alternative or addition to the annual review but '*...providing a lot of extra in terms of a lot of the lifestyle support and the kind of the understanding behind people's conditions*'(P13\_GP). Conversely, the need to use VGCs as a supplementary model of care was questioned in regard to the capacity of general practice to offer additional services to routine practice.

Additionally, varied use of VGCs was reported to reflect the increased disparity in the delivery of VGCs in general practice. VGCs were reported as being delivered as a single, yearly session or as a programme over a particular time period. The delivery of VGCs was also depicted at both PCN and practice levels, in which practice and/or PCN priorities were reported as central to conceptualising the approach. Participant 13 highlighted '*...we're doing it at PCN level and therefore annual reviews need to stay within their practice and be within the practice record*'(P13\_GP). Implementation of VGCs at either PCN or practice level was thus determined based on the management of service provision in each locality and the purpose of VGCs for each practice.



Whilst variability in the ways HCPs conceptualised VGCs was evident, ensuring patient's needs were considered in determining the purpose of the approach was central:

*'...I think most clinicians, recognised very strongly, have always recognised, and particularly in our post pandemic world, that our patients are not getting the lifestyle, self-care, education support that we would like them to be getting'(P13\_GP)*

This need to provide additional support for patients was a driving factor to implement VGCs, taking into account the limitations of using VGCs as a replacement for annual reviews and the educational benefits the approach encompasses to meet patient needs and demands.

Therefore, a lack of 'standardised definition' and increased adaptability in the use and delivery of VGCs was considered to be a key driver to implement VGCs, dependent on practice context, patient needs and organisational goals.

### **Organisational resources**

Determining the organisational resources required to implement VGCs, in terms of funding, time, staffing and technological resources, was thought to be an essential pre-requisite for implementation.

A number of participants expressed a sense of disappointment in general practice to prioritise the implementation of VGCs, as Participant 13 highlighted:

*‘...it pushes and pushes and it’s like, ‘oh, well, we’ll do it this month’ and then it hasn’t quite happened, and...we’ll do it next month and we’ll do it the month after’(P13\_GP).*

The lack of capacity to consider newer ways of working meant that routine care such as *‘...doing our child vaccines...and getting our women in for smear tests and things was felt to be more important’(P07\_GPN)*, with practices receiving additional funding for offering these services. This inability to prioritise VGCs meant that *‘...the practice wouldn’t have paid for it’(P09\_NC)* caused by existing pressures in primary care.

This meant that many participants relied on a *‘financial footing’(P13\_GP)* to implement VGCs, often obtained from external funders (PCNs, external NHS organisations, national contracts). In spite of this, these organisations were reported to be target-driven which *‘...is a long-term thing and I think commissioners at work on a sort of yearly cycle’(P10\_GP)*, reported as conflicting with the ways in which VGCs are funded and implemented.

In addition, the need for HCPs to commit their time to implementation of the approach was not always considered an organisational priority for practices, as explained by Participant 12:

*‘...how many patients could those three members of staff see...you could have had eight patients in those two hours three times over, so 24 patients and they weren’t actually dealing with 24 patients’(P12\_GP).*

Several participants reported that general practices often did not have the capacity to release HCPs to run VGCs due to the time involved in implementing the approach, compared to 1:1 appointments.

The lack of defined roles to implement VGCs created ambiguity regarding a sense of responsibility for the approach, highlighted by Participant Nine, *'...I wasn't quite sure why they needed an administrator, a note taker and a clinician'(P09\_NC)*. Roles were viewed as interchangeable, as Participant Two stated:

*'...sometimes it's good to not have a clinician there, and that's where it's it, you know works, works really, really well...perhaps don't need a clinician. [urm] You know it, it might be a, a care coordinator who specialises in diabetes or a diabetes nurse'(P02\_NC)*.

However, the flexibility in roles was thought to aid the implementation of the approach dependent on organisational capacity and staffing demands.

The need for multiple members of the practice to facilitate VGCs meant timings of VGCs were reported as variable because of time constraints, increased workload, and capacity within the working day, as *'...it's not like a normal appointment when they have a choice, you know, it's, it's 13:00 o'clock or not so, it's been difficult to fill the clinic'(P10\_GP)*. This led to participants to consider ending implementation *'...because it was really difficult to find a time in the week when everybody was free at the same time'(P12\_GP)*. This meant that HCPs had to *'...work on their days off'(P12\_GP)* to facilitate delivery for patients due to the time involved in implementing and delivering the approach.

In addition, the technology required to deliver VGCs did not have *'...the infrastructure to support digital interactions on a, on a multiple basis'(P02\_NC)*, which meant general practices had to invest further time and funding to make VGCs possible. Several participants also reported

the need to support patients with technology, additional to their daily workload, as highlighted by Participant Eight:

*'...I said let's have a 5-minute meeting in the evening tonight after work, we'll arrange to meet, I'll send you a link, you need to join the link...and then you're confident you know how to use it'(P08\_ANP)*

The additional organisational resources required to implement VGCs was highlighted to be a barrier considering the capacity of general practices at the time of the pandemic.

Thus, the organisational resources required to conceptualise implementation were viewed as flexible and fluid, dependent on the conceptualisation of the approach, practice pragmatics and external support for the approach. The fluidity of the organisational resources required for implementation therefore acts as both a barrier and facilitator of the approach.

### **Individual staff and group motivations**

The value of an individual *'advocate'(P02\_NC)* who is *'...really passionate about it to take it forward'(P02\_NC)* was considered to be key in implementing VGCs. Often individual staff with a personal and professional motivation for implementing VGCs, willing to drive the approach forward were thought to be 'advocates'. Implementation was therefore deemed to embody a transformational approach, rather than *'...where the practice manager has just gone right, you're not doing anything, you can do it'(P09\_NC)*. Individual staff motivations for the implementation of VGCs were driven from the bottom-up and were

deemed to be HCP dependent, as often *'...if people are just told to do this, they won't do it'(P03\_GPN)*. The individual drive to implement VGCs was discussed as needing to align with existing roles and responsibilities.

In particular, nurses were considered to be key advocates for implementation. There was a sense that nurses are *'..the ones are at the forefront...looking after the patients'(P08\_ANP)* and understand *'...the population far better than the, the strategically led people up higher above'(P08\_ANP)*. Thus, the implementation of VGCs was portrayed as being profession dependent, aligning to a particular scope of practice, including coherence with HCPs' current roles and interests as described by Participant 13:

*'...it fits very nicely with her role as a health coach because as a facilitator, she's then kind of doing that kind of coaching style and she's able to bring in her knowledge into terms of kind of what's available for people'(P13\_GP)*

Whilst coherence with individual professional roles influenced the ways in which VGCs were implemented, full-team support and collaboration was discussed, as Participant 13 echoed, *'...it's not about one individual, it's about a whole team'(P13\_GP)*. Those practices which had implemented VGCs for a number of years expressed the importance of whole team engagement, compared to practices who had just began implementing VGCs or trained practices in implementing the approach.

Implementation was thus dependent on having consensual understanding of the approach, *'...making sure that all the members of staff in your practice are aware of what you're doing and are on board with it'(P07\_GPN)* to aid conceptual coherence. Involving HCPs who are

motivated to support VGCs was deemed essential to aid implementation as *'...you've gotta pick the people around you to make sure that you know they'll, they'll go along with you and support you'(P01\_GPN)*, due to the time and workload involved in setting up and sustaining the approach in practice. Group motivations were therefore reliant on the multidisciplinary team working together to create change at a practice level.

Yet, many participants emphasised that despite individual and group motivations, practices faced increased team resistance regarding the approach as it's *'...not something they've done'(P04\_NC)*. The inability to engage staff created a number of *'doubters'(P02\_NC)*, a term a few participants used to describe HCPs' unwillingness to engage with VGCs. Often, resistance stemmed from consideration of the efficacy of VGCs, as described by Participant Three in the following way:

*'...they don't think this is gonna work anyway...they don't think it's time saving...they don't think it's gonna be easy to do...we don't think it's gonna be a goer generally...they think, it's not gonna work, it's too much work'(P03\_GPN)*

The ability to change HCP motivations surrounding the approach was viewed as challenging as *'...getting professionals to kind of accept that, erm, will, will always be a, you know, an issue'(P02\_NC)*, due to the lack of initial benefits and workload required for implementation.

Participants used words such as *'persuade'(P04\_NC)*, *'to sell'(P03\_GPN)* and *'converted'(P02\_NC)* to describe the need to increase the buy-in of HCPs. In particular, practice managers were viewed by Participant 10 as *'...all extremists, you know hair on fire kind of thing'(P10\_GP)* when trying

to initiate change within in a practice, caused by increased pressures and workload associated with their role.

Several participants expressed that VGCs displayed dissonance with their professional roles which meant '*...the first admin person was crying because she didn't wanna take this on...because it was being given to her in her role*'(P03\_GPN). The lack of capacity in already existing professional roles to initiate newer ways of working in general practice was considered difficult.

Harnessing individual and group motivations helped to aid implementation into practice. However, this highlights a lack of capacity in general practice to initiate and sustain change, pushing VGCs to align with individual professional roles and responsibilities to aid 'normalisation'.

### **Perceived patient engagement**

Perceived patient engagement by HCPs was understood based on the preference of a virtual group dynamic, attendance of VGCs and how VGCs were evaluated by patients.

The virtual group dynamic was perceived by HCPs to aid patient engagement due to the benefits of networking and enabling discussion which acted as a support system for patients with similar medical conditions, as affirmed by Participant One, '*...they were really, really successful, erm, and, and probably to a lot to do with the fact that you know a lot is around patient support of each other, you know?*'(P01\_GPN). A common perception was that the impact of VGCs

in managing patients' health was minimal, but rather attendance and engagement of patients was dependent on the opportunity provided by VGCs for learning and discussion:

*'...that's why we carry on doing it...not because I'm going to make a meaningful impact on the patients...they're gonna do what they want, erm, but they've got the best opportunity to learn from each other and actually listen to what we're saying in a meaningful way'(P05\_P)*

This reciprocal learning and support was a key driver for patient engagement, as several participants explained that patients are *'...more likely to leave with what they need and wanted, but they may not have asked'(P03\_GPN)*, attributed to the therapeutic nature of group discussion. Several participants perceived patients as experiencing validation of their condition, in which *'...you're all in it together...you're all in the same boat'(P09\_NC)*, which was viewed as a contributing reason for patient attendance. Post-VGC evaluations reflected on patients experiences of managing a condition in isolation and felt *'...the stress of having some long-term conditions, some newly diagnosed conditions are, erm, are never really addressed'(P02\_NC)*. This led to a number of patients 're-attending' VGCs, as Participant Ten argued *'...there are few people who find them really useful and keep coming back'(P10\_GP)* due to the nature of the virtual group dynamic which patients would not experience in an individual consultation.

Contrary to this, attendance was not perceived to be linked to the preference of a virtual group dynamic, but to the convenience and accessibility of a virtual approach. VGCs aided accessibility for patients as,



*'...if they had parking issues, you know, transport, mileage, fuel. If they were a little bit poorly or physical disabilities, they didn't have to worry if they were working, they could take some time out to join the group'(P08\_ANP).*

Implementation of VGCs was therefore perceived by HCPs to meet patient needs and demand to consult remotely. In particular, for a proportion of the working population, *'...who can hop on and access health in the middle of their day'(P03\_GPN)*, and *'...can often fit it in there, their lunch hour at work'(P10\_GP)*, owing to the enhanced flexibility of the approach.

Several participants discussed patients' non-attendance of VGCs, as reported by Participant One: *'...the difficulty is probably keeping up, keeping up the numbers...the numbers weren't necessarily there from the patients'(P01\_GPN)*. A lack of attendance led to an inability to implement and sustain in practice because of the effort required to engage patients, as described by Participant 12: *'...the effort that went into it for the number that we got...it wasn't worth continuing'(P12\_GP)*, due to the work required to initiate and set-up VGCs.

Reasons for a lack of attendance included unfamiliarity of the approach, as a result of the increased time taken for patients to learn how to engage with newer ways of working. Participant 10 echoed that *'...you will have empty, low attended clinics in the first three to six months'(P10\_GP)* caused by the lack of awareness of VGCs as an alternative model of consultation. Increased accessibility and convenience of VGCs led several participants to report a lack of value placed on the importance of the approach, often *'...because things are free, they're not valued as*

*such'*(P12\_GP), with limited accountability regarding non-attendance. The remoteness of VGCs also meant that patients '*...don't feel as well connected'*(P14\_D) in virtual groups, expressing frustration with newer models of care against existing in-person consultations.

Patient engagement was regarded as inconsistent by HCPs, as perceived enthusiasm for reciprocal learning and support was not reflected in the reported attendance of the approach.

#### *Theme summary*

Conceptualising implementation of VGCs was key to participants understanding of the approach, including an operational definition, the organisational resources required, individual and group motivations, and perceived patient engagement. The lack of ability to conceptualise VGCs led variations in the process of implementation yet aided greater understanding of the scope and role of VGCs as an alternative model of care.

#### **8.4.2.3 The process of implementation**

This theme identifies key considerations in the process of implementing VGCs. These include the need to create an optimum virtual group dynamic, and ensuring the adequate processes and training are in place to aid implementation of the approach.

##### **Creating an optimum virtual group dynamic**

The need to create an optimum virtual group dynamic was key to successful implementation. Participants discussed the ability to manage a group dynamic virtually, the nature of the group itself, facilitation and the security of the virtual space.

The virtual nature of the group dynamic highlighted a contention between the virtual space vs. physical presence. Differences alluded to were associated with the camaraderie, social cohesion, human connection, engagement, and body language, which were considered to be absent in VGCs because ‘...*they’re not in the room together*’(P09\_NC). This was reported to hinder implementation due to the lack of social support and networking facilitated by VGCs and valued by patients.

This lack of physical presence led to a number of participants to question the peer support obtained through VGCs, as Participant Nine questioned:

*‘...are they as likely to exchange a bit of chitchat in a virtual consultation, as they would if they were sat next to somebody in a waiting room? I’m, I’m not sure’(P09\_NC).*

Several participants discussed experiences where the HCP is '*...just sort of talking at the screen*'(P14\_D), in which patients were perceived to focus heavily on the screen, rather than building a support network with each other. These experiences contrast with data regarding perceived patient engagement and the benefits of social support, reflecting the primary reason why patients were perceived to attend VGCs.

A lack of personal presence created a fragmentation in care as a result of a reduction in personal interaction, and to mitigate this peer support was often scheduled into the VGCs. Participant 14 stated, '*...I would have stopped my video to say, 'do people want to chat?', 'does anyone want to share anything?'*'(P14\_D). Often the virtual platform used meant '*...it very difficult to keep track of people because the splitting screen keeps moving around so I can't work out, remember who I've asked the question*'(P10\_GP) and thus created difficulty in establishing group discussion and support between patients.

Despite this, the notion of anonymity, referred to as a lack of identification, was perceived to be of value for patients as '*...there's definitely benefits in virtual ones because I feel like there's more of an anonymity*'(P11\_HWC), compared to face-to-face consultations. This was perceived to aid patient engagement and implementation of the approach as patients were still able to attend and not interact in the consultation, appealing to a wider range of patient personalities and demographics.

Therefore, the '*right facilitator*'(P01\_GPN) was highlighted as key, due to having the skill set to virtually manage a consultation, as '*...to break the ice and make people talk to each other, erm, and, and kind of get their*

*questions out and I think, that's, that's quite difficult'(P05\_P).*

Implementation of the approach thus required careful consideration of the 'facilitator' and consideration of the capacity amongst professional roles, due to the workload and time involved in implementing the approach.

In addition, ground rules were also reported as a way to maintain an optimum virtual group dynamic as well as security and safety within a virtual space, as Participant 12 described '*...what's in the room, stays in the room and that kind of thing'(P12\_GP)*, with responsibility placed on the individual to not discuss anything related to the consultation outside of the group. Although consent was usually confirmed beforehand or within the consultation itself, the virtual nature of the consultation increased concerns regarding the inability to manage aspects of digital security and patient confidentiality, as '*...if somebody's intent on recording the session and then doing something stupid with it, they will'(P02\_NC)*. In particular, ensuring confidentiality with regards sensitive information such as clinical results and biometric data was of great importance, often using '*...a first name on so they don't know who's, who's?(P06\_P)*.

A level of assumed trust of the patient's environment was therefore expressed, as Participant Nine states '*...it's quite high trust thing and you are trusting them to behave appropriately that's rightly or wrongly'(P09\_NC)*. Several participants thus explained that the process of implementation required careful consideration of confidentiality, and some feared implementation because of confidentiality concerns and professional responsibilities.

## Processes and training

The processes associated with the implementation of VGCs led many participants to consider the need for planning, organisation and training.

The increased workload associated with VGCs meant HCPs would '*just stop*'(P02\_NC). In particular, the '*upfront work*'(P02\_NC), illustrated as '*...what needed to be done prior to each session*'(P07\_GPN) meant initial benefits were not rapidly demonstrated, as '*...the groundwork took longer than the actual consultations*'(P09\_NC). Participant Three argued that '*...once you get it organised, the workload does go down and, but if you can't get over that then, you've, you've had it*'(P03\_GPN). Several participants discussed the need for perseverance, as Participant Two stated, '*...the perseverance gets you past that barrier and then you start to see the, the, the benefits streaming*'(P02\_NC). The importance of planning, rather '*...than just piloting it*'(P12\_GP), was therefore viewed as imperative to ensure benefits were demonstrated, with the need to iteratively adapt and refine the model according to local contexts.

Processes, including the identification of patients for VGCs, were viewed as a team effort as '*...recruiting the patients can come from any member of the, of member of staff*'(P07\_GPN). This process was reported as '*...far more lengthy than just booking the appointment*'(P05\_P), in which '*...they gotta send the search...receive, then we've gotta go back to them and say, right this is what we're offering, do you want it? A few chases*'(P03\_GPN). Although, this responsibility was often directed to the receptionists '*...at the front line*' (P02\_NC) to coordinate VGCs and deal with the administrative aspects of the approach.

Due to the increased administration encountered with VGCs, demand on receptionists was discussed. Participant Three stated '*...everybody's saturated and everybody's you know the workload is just so high...there was no way she could take that on*'(P03\_GPN) caused by already existing pressures on general practice. The need to outline what administration is required was thus highlighted as significant for understanding the process of implementation.

Developing a role to implement VGCs specifically, as '*...if you don't make it someone's role and therefore give them the dedicated time, it won't happen*'(P13\_GP) was discussed as a facilitator to implementation by many participants. This role was conceptualised at PCN level in which VGCs were incorporated into a HCP's job description. Yet, creation and initiation of a protected role for VGCs was considered time-consuming, as '*...getting somebody to own this...took a little bit of time*'(P13\_GP). This was down to the lack of '*headspace*'(P09\_NC) to think about newer ways of working during a time of increased pressures and workload in general practice.

Furthermore, implementation of VGCs required training to understand the processes associated with the approach. Training was viewed by a number of participants as imperative with the need for training of specific roles and responsibilities. In particular, Participant Six stated, '*...train your receptionists, the people's gonna book them, that's the people that we missed out the first time*'(P05\_P), due to the increased administration of the approach and need to ensure whole team engagement.

Whilst training was viewed as imperative by several participants, a mixture of training methods were used. Formal training was described

through the use of training providers, participation in accredited courses, and e-learning modules. Several participants suggested that formal training '*...should be pushed*'(P08\_ANP). However, practicalities associated with training, including cost and accessibility were highlighted by several participants, as practices '*...don't want to pay that money*'(P01\_GPN) or '*...they'll try and find a way round paying*'(P01\_GPN), as it was perceived that practices would spend their funding elsewhere.

This led to several participants using experiential methods of training to better understand how VGCs can be implemented, such as learning from others, learning on the job whilst they were being implemented, and using a train the trainer model, a framework used to train individuals to train other people in their practices. Some participants considered themselves to be 'experts' in VGCs, offering support to other practices who wanted to implement the approach as, '*...there are people out there who have done it, I suppose like me, who...can offer support in that way*'(P01\_GPN). Other participants felt that '*...really learning on the job*'(P03\_GPN) enabled HCPs to iteratively develop the skills required to implement VGCs. Although, the iterative nature of training created '*...a bit of a lag*'(P13\_GP) in the time taken for VGCs to be understood and implemented. Train the trainer models were believed to aid implementation, with the aim to '*...get a sort of training scheme locally to, to get other clinicians in*'(P10\_GP), in order to enhance sustainability of the approach. The use of train the trainer models highlighted the importance for HCPs to learn from others who have previously implemented VGCs.



### *Theme summary*

The process of implementation required an understanding of an optimum virtual group dynamic, and an awareness of the logistical processes and training required to aid implementation of the approach. Ensuring a process of implementation is recognised, aids the sustainability of the approach and ability to capture impact.

#### 8.4.2.4 Capturing impact

This theme identifies the challenges of determining the impact of VGCs in primary care general practice on a macro, meso and micro level (Greenhalgh et al., 2018). Many participants described the need for an evidence base with the inability to conduct any formal evaluation of VGCs themselves (micro), creating an uncertainty of what 'impact' is (macro). The inability to determine an added benefit creates difficulties in getting organisations to adopt and sustain the approach (meso) (Figure 39). Capturing impact at each of these levels has significance for the adaptability and sustainability of VGCs in general practice.

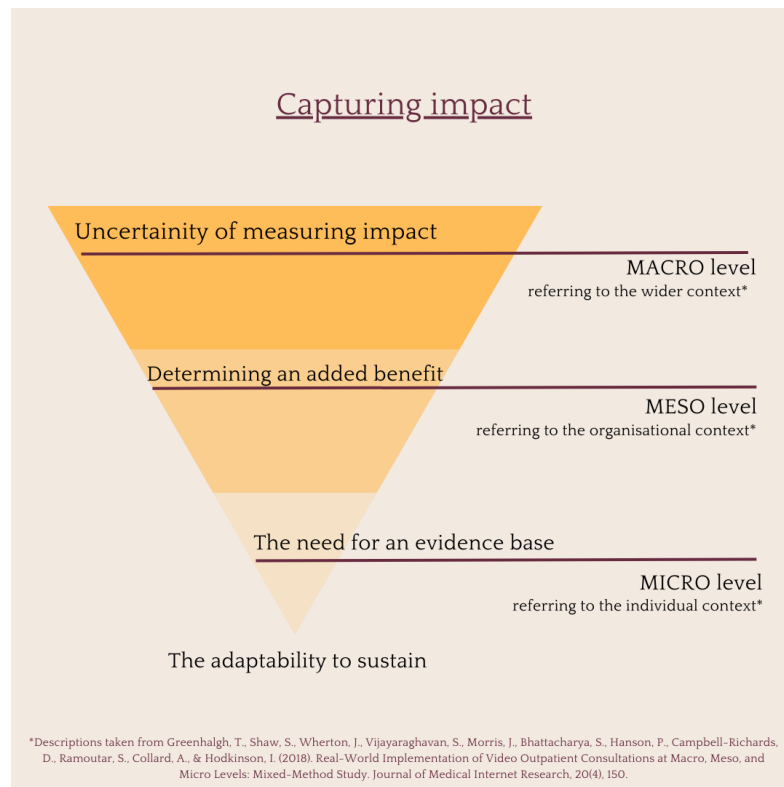


Figure 39: Capturing impact at macro, meso and micro levels

## Uncertainty of measuring impact

Several participants expressed a lack of understanding of what constitutes impact and the ways in which this can be measured. Often, the want to evidence outcomes by collecting metrics and patient feedback was demonstrated, yet Participant Two questioned '*...how do you measure that they've got a better experience?*'(P02\_NC). There was an uncertainty about how data, in particular patient feedback, can be measured and used to demonstrate impact.

Uncertainty of how to measure impact meant several participants faced barriers in demonstrating effectiveness. A few participants expressed a distinction between quantitative measures which were perceived as able to demonstrate impact and qualitative data which '*...is just kind of patient's words...it's not really data*'(P11\_HWC). These participants also highlighted the inability to make sense of qualitative data as Participant 13 stated '*...I couldn't put that into, into numbers in terms of in terms of a clinical benefit...I couldn't quantify that*'(P13\_GP). This hindered the ability to demonstrate impact of VGCs and to aid sustained implementation.

Perceived positive impact for patients was discussed by a number of HCPs, such as increased accessibility of the approach, although, Participant Two highlighted that '*...it's still hard to quantify, it's how much benefit it is to the patient*'(P02\_NC), due to reliance of subjective patient feedback with no real objective measures identified.

Further to this, there was little accountability to provide data to organisational bodies, such as national and local organisations which had

provided funding, to evidence the impact of VGCs, with Participant Nine stating,

*'...I don't know what happened to the GPN 10 Point board. I think it just disappeared along with a lot of things in COVID, but nobody's ever chased it...It was kind of like, you know, you gave, this, this £6000 and this is what we've spent it on and nobody seemed to care'(P09\_NC)*

This further created a sense of uncertainty of the value of evidence in demonstrating impact for future use and sustainability of VGCs.

Overall, an uncertainty of the ways in which impact can be demonstrated and evidenced has led to issues in determining adequate practice-based evidence for the implementation of VGCs into general practice.

### **The need for an evidence base**

The extent to which research evidence influenced the ability to implement VGCs varied amongst participants.

For some participants there was an apparent lack of a research evidence base in which to implement VGCs, as Participant Two asked *'...where's the evidence?'*(P02\_NC). Implementation was reported as 'ad hoc' with little mention of an underpinning evidence base. Nevertheless, the need for research evidence was reported as contradictory, as *'...it's not all about the evidence'*(P02\_NC), in which *'...if we all, you know, stopped doing things because there wasn't the evidence there already, you just wouldn't make any innovative progress'*(P02\_NC). For some participants

experiential knowledge, rather than research evidence, influenced implementation.

A juxtaposition between objective, quantitative data and subjective, qualitative judgements was identified by a number of participants, as Participant Two stated *'...don't measure the outcomes of video group clinics with numbers, measure it on the smiles of people's faces'*(P02\_NC). There was a reported sense that VGCs had a number of 'hidden benefits' which are *'...hard to quantify and to kind of publish papers'*(P02\_NC), as *'...a lot of where the benefits of video group clinics come through and through, it can't be measured in numbers'*(P02\_NC). Terminology such as *'...hidden feedback'*(P05\_P), *'...genuine benefit'*(P02\_NC) and *'...hidden improvements'*(P05\_P) were used to describe the inability to quantify benefits of VGCs, such as the social support networks and reciprocal learning established by patients, as well as the rapport built between patients and HCPs through the virtual group.

To capture these 'hidden benefits', many participants reported how they evaluated VGCs within their practice, describing a mixture of patient feedback, patient surveys and case studies. Case studies were reported as a way to collect evidence through an in-depth examination of an individual, group or event, aiming to provide a detailed account of a particular phenomenon in relation to a specific real-world context. Also, the use of both clinician generated and/or standardised surveys were reported. Several participants suggested that patient's reported positive experiences of VGCs through these surveys, which were significant in the implementation and sustainability of the approach, epitomised by Participant Ten: *'...if I ever think what the hell I'm doing you know, I just read, read the anonymous feedback and think blimey, this is so*

*needed'*(P10\_GP). Thus, the impact of patient feedback as a motivator to implementation was evident.

In relation to surveys, they were generally small-scale and '*...we've not got masses and massive data of, of kind of measures, outcome measures for people'*(P11\_HWC). The lack of capacity within practices meant many participants were unable to produce '*...anything more formal than, than a survey'*(P01\_GPN) due to the lack of opportunities for evaluation and the amount of evidence collected, which hinders the ability to capture impact.

The lack of generalisable data led several participants to describe the need for more clinical evidence on the impact of VGCs. These participants discussed the collection of biometric data to demonstrate a change in clinical indicators for patients attending VGCs, as a way to capture impact of the approach, as explained by Participant Eight:

*'...what we found was HbA1c from three, in three months had reduced from an average of 75 to 55 millimoles, which was approximately 28%...BMI reduced from 33 to 31, which was an average reduction of 4% in three months...Blood pressure reduced by 1% as an average'*(P08\_ANP)

Despite the collection of clinical data, results were not often written up or analysed to demonstrate impact due to a lack of understanding in how this data can be interpreted and the lack of capacity to evaluate the intervention.

For several participants the measurement of biometrics was not viewed as a way to demonstrate impact of VGCs, as Participant Nine questioned, '*...does anybody's annual review actually make them change their*

*behaviour for a sustained point of time? Very, very rarely'(P09\_NC).* This led to a contention in using quantifiable data to determine the impact of the approach in contributing to health behaviours. There was a clear dichotomy discussed between the success of VGCs demonstrated by patient feedback, yet a lack of evidence for the impact of VGCs on clinical indicators.

Therefore, the need for an evidence base was often presented as convoluted, regarding the nature of knowledge and types of evidence, including patient feedback and clinical biometrics.

### **Determining an added benefit**

The need to determine an added benefit was considered a way to demonstrate impact of VGCs, aside from research evidence, to obtain funding and increase capacity for implementation. Added benefits were discussed in relation to finances, patient need and practice priorities.

Several participants expressed the need to determine an added benefit to obtain organisational investment from funders, and aid implementation, as *'...they've got to see an added benefit, so they've got to put that in when they're commissioning and then paying for something'(P13\_GP).* Having an 'added benefit' to implement VGCs, such as offering a particular service or a provision specific to local populations, was reported to increase funding opportunities, reliant on additional payments to enhance successful implementation, as:

*'...we were struggling to get practices to get involved with group consultations without that added payment because that added payment*

*just takes the pressure off in terms of people giving people the capacity to do it'(P13\_GP).*

Often, implementation was reported as being dependent on '*charitable effort*'(P10\_GP), referring to the lack of added payment attached to VGCs and individual and group motivations for implementation.

Although, the need for an added payment highlighted challenges between commissioning and clinical delivery with the need to ensure '*...that it didn't effectively double pay for something*'(P13\_GP). Participant 13 explained that if '*...you're already paying for the annual review within the normal GP contract, we couldn't then be adding extra payment to practices to do that again*'(P13\_GP). General practices are not funded by the mechanism of delivery as '*...there isn't any QOF incentives*'(P08\_ANP) attached to the model of care but funded by the outcomes collected in consultations. Implementation is therefore dependent on the ability to collect outcomes that wouldn't otherwise be collected under the GP contract.

Clinical delivery of VGCs therefore was reported as a way of '*...offering something that you can't get in a one-to-one appointment*'(P12\_GP). The provision of lifestyle advice was discussed as an added benefit of VGCs, explained by Participant 13:

*'...the added benefit comes within the lifestyle delivery within the greater understanding within the support for self-care...that was what we were paying for and from a practice and, and a delivery point of view'*(P13\_GP).

This added benefit was proposed as something which is not specifically targeted in a one-to-one consultation and therefore is perceived to be



additional to routine service delivery aiding the implementation of the approach.

Other added benefits related to a reduction in workload, which was viewed as:

*‘...the only thing that motivates anyone in primary care...We’ve got enough money. It’s reduction in workload. It’s just not enough staff, not enough time. Too many patients, too much need’(P10\_GP).*

This motivation is grounded by the extreme pressures faced in general practice at the time of the pandemic, with the need for newer ways of working to address backlog and patient demand.

Yet, the inability to demonstrate the impact of time-saved or reduction in workload was also described by several participants, who questioned, *‘...where’s results, where the savings’(P10\_GP)*. These participants who had attempted to provide evidence to demonstrate reduction of workload and increased time efficiency were only able to provide informal examples of the number of patients seen in a 1:1 in comparison to a VGC.

In addition, some participants still described challenges in determining an added cost benefit, as *‘...that saving is so difficult to quantify and then putting people off’(P13\_GP)*. There was a dissonance between a number of participants who stated *‘...I can demonstrate value for money’(P05\_P)* yet could not provide evidence for this. Other participants described *‘...in terms of money, we’re talking primary and secondary care demand savings of a thousand, thousand, £1002 per patient, per year’(P08\_ANP)*, yet had not had any sustained impact of these savings as VGCs were ran for a short programme.

Determining an added benefit was dependent on the ability to evidence the impact of VGCs on patient need, time-saved, reduction in workload and cost-benefit. However, the lack of a research evidence base for the approach reduces the potential funding available to implement VGCs into primary care general practice.

### **The adaptability to sustain**

The adaptability of VGCs was key in practices being motivated to implement, which impacted the sustainability of the approach.

The adaptability of VGCs was a key driver for the sustainability of the approach. A number of participants recognised the need to create an informality around the structuring of VGCs to aid implementation. The notion of '*...one size doesn't fit all basically*'(P07\_GPN), dependent on practice and individual preference was key to these participant's thoughts about the structuring of VGCs. Several participants believed the future of primary care necessitates '*...a real mix of approaches*'(P02\_NC), providing a platform for the implementation of VGCs.

Yet, the contextual constraints, demand on time and workload in primary care led Participant Nine to explain, '*...while ever it's nice to have rather than a must have, then we'll do what we're paid to do, which is on day appointments, long term reviews, screening, vaccinations*'(P09\_NC). The lack of capacity to consider initiating change internally was perceived to be a barrier to the implementation of VGCs. In order to resolve this, a number of participants reported the need to make VGCs mandatory, as part of national GP contracts and Directed Enhanced Services [DES].

The need for a *'culture change'*(P01\_GPN) was therefore highlighted, as resistance stemmed from beliefs surrounding *'...it's not what they've done in the past'*(P01\_NC). Several participants stated that the implementation of VGCs *'...is not at all sustainable'*(P10\_GP), with many projects described as *'...not halted as such but it's on a pause'*(P08\_ANP) due the lack of capacity in general practice to sustain VGCs. The need to implement VGCs for a longer period of time was described by numerous participants, who explained a lack of initial benefits *'...because they've only done it, you know, once or twice or for one particular subject area'*(P02\_NC), which created issues in the amount of resources required to initially set up and further sustain the approach.

Practice pragmatics were also described as hindering the sustainability of VGCs, such as issues with staff turnover, as often if the HCP running VGCs had left, VGCs would not be continued and *'...that void hasn't been filled'*(P05\_P). In addition, reduced demand for virtual consultations by both HCPs and patients meant that *'...most people now want to come back in as opposed to, erm, do video groups'*(P05\_P), due to the remoteness and need for interaction after the impact of the pandemic. HCPs were perceived as being *'all a bit fed-up, erm, of the virtual'*(P02\_NC), with many practices reverting back to face-to-face approaches as a result of patient demand for in-person consultations.

Therefore, the increased adaptability of VGCs created difficulties in demonstrating impact because of the flexible nature of the approach, and lack of sustainability. Adaptability did not always enhance sustainability of VGCs due to the culture of primary care, practice constraints and patient demand in determining the ability to implement and evidence impact.

### *Theme summary*

The ability to capture impact is dependent on the ability to measure impact, the need for an evidence base and determining an added benefit. Whilst the adaptability of the approach aids implementation, contextual factors at a macro, meso and micro level hinder the ability for VGCs to be sustained in practice. A lack of sustainability creates difficulties in evidencing impact in primary care general practice.

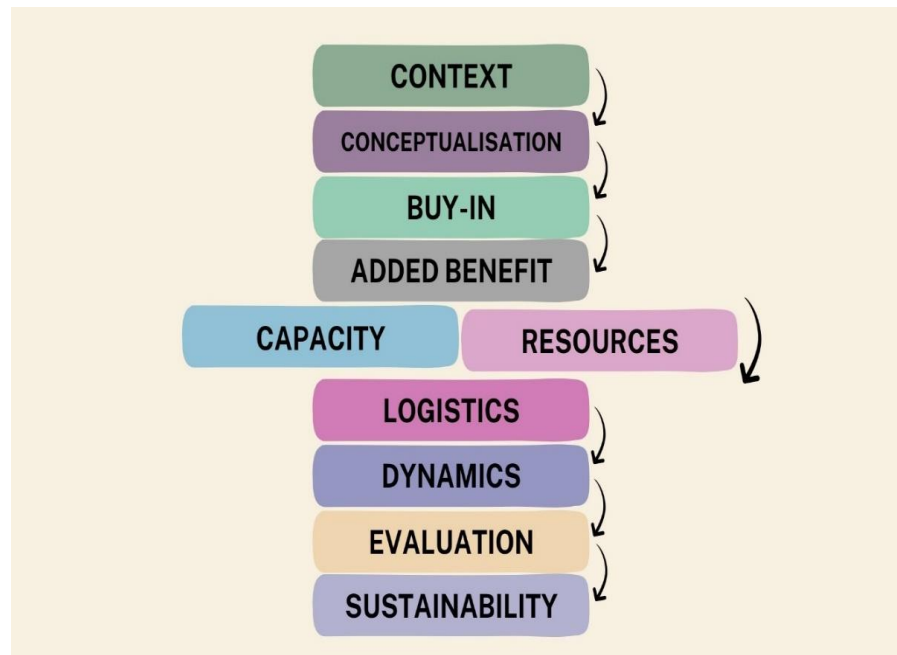
## **8.5 Discussion**

### **8.5.1 Summary of main findings**

This chapter has presented the findings from semi-structured interviews with HCPs involved with the implementation and assessment of impact of VGCs in primary care general practice. Main findings highlight the importance of considering pragmatic and contextual differences which are intrinsic to how VGCs are implemented and the associated impact of the approach.

Initially findings were conceptualised in a linear fashion, in which implementation and impact of VGCs was dependent on a straight trajectory, with separate and interlinking components (Figure 40).

This linear structure was heavily dependent on practice context, in which conceptualisation was based on and viewed as a foundation for implementation. Buy-in for the approach was determined by the need for an added benefit at an organisational level. The capacity and resources within general practice determined the logistics of VGCs. Positive dynamics experienced through the virtual group were reported by patients through evaluation, which aided sustainability. However, sustainability was viewed as the end point of successful implementation, with little consideration of the contextual factors influencing the findings as a whole.



*Figure 40: Linear trajectory of thematic findings*

Although, this linear trajectory acknowledged the implications of each central organising concept in relation to the next, implementation was not necessarily dependent on these concepts in a linear fashion. On reflection, the linear trajectory did not represent the interplay between factors, as demonstrated in Figure 40. Therefore, findings were re-conceptualised as a loop to illustrate the interplay between concepts, including an additional arrow connecting sustainability to context, which led to a rethinking of the interplay between themes (Figure 41). This is supported by the interconnectedness between quotations used to justify thematic findings, as quotes can often be used interchangeably in relation to each theme (Appendix 43).

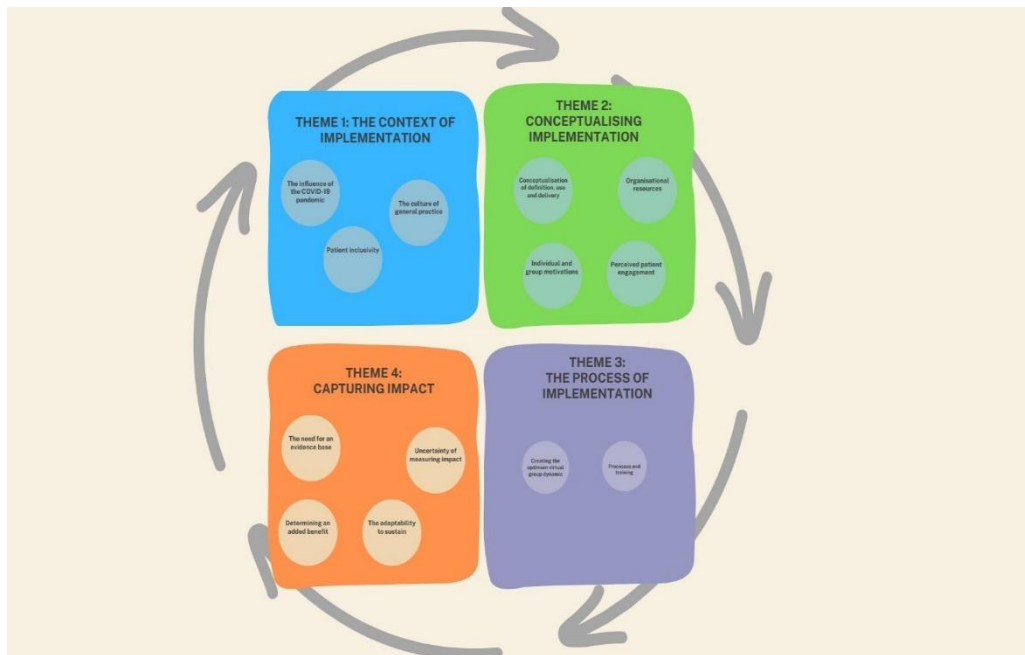


Figure 41: Circle trajectory of themes and sub-themes

Findings from this study have illustrated the implementation and impact of VGCs from the experiences of HCPs in primary care general practice. In particular, this study has identified the importance of context in underpinning the conceptualisation of the approach, the process of implementation and the difficulty with capturing impact of VGCs. The unique pandemic context into which VGCs were implemented meant that VGCs had to be responsive to practice priorities and patient need during this time. The inability to reach certain populations was therefore exacerbated by the pandemic context due to limitations with technology, perceived as a barrier to patient involvement.

This study also identified that whilst there was a desire for newer ways of working, a lack of capacity to initiate change was evident, due to the pressures imposed on general practice by the pandemic context and increasing workload. The need to be adaptable to context and practice

need was therefore highlighted in order to aid implementation and sustain the approach.

Furthermore, findings in this chapter highlighted the impact of VGCs, in which HCPs demonstrated an inability to capture impact, due to a lack of understanding regarding how patient experience and clinical indicators can be measured. There is a need for an evidence base but often adequate knowledge of the approach was considered to be solely generated through patient and HCP individual experiences, which creates difficulties in establishing universal impact. These findings further highlight the juxtaposition between objective (quantitative) and subjective (qualitative) judgements about VGCs, in which further investigation requires a bringing together of these judgements to get an overall, in-depth picture of VGCs.

However, whilst demonstrating novel insights into how VGCs are implemented and evidenced, this study has also built on key findings from Chapter 6. Coherence between the '*definition and use of VGCs*' (Chapter 6) and '*conceptualisation of definition, use and delivery*' (Chapter 8) was identified, in which this study has provided an in-depth account of HCPs understandings of the definition and use of VGCs and how this conceptualisation determines implementation and impact of the approach. In particular, this study recognised the interplay of contextual factors, practice pragmatics and patient need in contributing to conceptualisations of VGCs. Appendix 47 provides a categorisation of participant responses to demonstrate the variability in implementation and demonstrating impact of VGCs. A lack of standardisation of the approach created difficulties in establishing objective impact.



Also, *'staff and patient motivations for VGCs'* (Chapter 6) were echoed across findings in this study, with the need to establish a protected role for VGCs, backed by whole team engagement to aid successful implementation. However, the ability to establish a protected role for VGCs, as opposed to whole team engagement, was attributed to the *'organisational resources'* (Chapter 8), *'individual and group motivations'* (Chapter 8) and the capacity of general practice, including adequate funding, time and professional interest. Additionally, perceived patient motivations to establish a virtual group dynamic and need for social connectedness, aided successful implementation of the approach. Despite this, HCPs perceived that the lack of physical presence in a virtual group meant that some patients wanted to revert back to in-person group consultations and resulted in low attendance rates in VGCs. Thus, this finding warrants further investigation from a patient perspective.

Further to this, *'workload and practice priorities'* (Chapter 6) were viewed as fundamental in implementing VGCs into practice, with the need for financial and resource investment. This study highlighted the need to determine an added benefit to obtain funding and buy-in of the approach, yet was considered to be resource intensive, requiring a number of processes to be established prior to implementation.

## **8.5.2 Comparison with implementation theories and frameworks**

### **8.5.2.1 NPT (May & Finch, 2009; May et al., 2015; May et al., 2018)**

The thematic findings in this chapter can be discussed in relation to the constructs proposed by NPT, as a lens for interpretation of the data,

amongst the existing theoretical literature (May et al., 2018; Murray et al., 2010). An overview of NPT is provided in section 6.4.2.1.

NPT recognises the factors which facilitate or hinder the implementation and impact of VGCs by HCPs in primary care general practice and therefore useful to discuss findings in light of these constructs (Vears & Gillam, 2022). In particular, NPT aligns with the need to provide 'coherence' with regards to the conceptualisation of an intervention, which is key to these thematic findings. The individual components of each NPT construct are referred to, in relation to applicable findings.

*Coherence*: Understanding the purpose and role of VGCs and how HCPs 'made sense' of the approach was heavily dependent on the context of implementation (May & Finch, 2009; May et al., 2015). The importance of 'sense making' of VGC was dependent on both individual and group motivations for the implementation of the approach, and therefore, the role of the 'advocate' and team buy-in were viewed as a means to achieve 'coherence' across a practice (*differentiation*).

A lack of clarity surrounding the nature of VGCs demonstrates the inability to establish 'coherence'. Whilst VGCs may be understood by individuals in a particular practice, this understanding is not universally operationalised (*communal specification, individual specification*). Therefore, 'sense making' is viewed internally, according to practice conceptualisation and pragmatics (*internalisation*).

The inability to establish 'coherence' can hinder or aid the implementation of VGCs. The adaptability of the approach in light of the COVID-19 context helped to meet a number of practice and patient needs i.e. address the backlog of workload, maintain contact with patients. The

need to determine an added benefit was often reflected in the conceptualisation of the approach, as local initiatives determined the use of VGCs for particular practice needs or patient populations. Although, the lack of universal operationalisation has left the approach open to interpretation for individual practice contexts and therefore the ability to establish any impact of the approach is limited.

*Cognitive participation:* Both individual and group motivations were important to determine implementation of VGCs. A contention between only having an individual 'advocate' to implement VGCs and the need for whole team buy-in was highlighted (*initiation*). Whilst an 'advocate' was considered to drive the 'buy-in', a whole team approach was considered significant, with regards to conceptualising implementation, the process of implementation and capturing impact (*enrolment*). Many participants described little progress if the responsibility of VGCs was given to one individual, due to capacity in primary care, the culture of general practice and a lack of recognition for VGCs in clinical or non-clinical roles. Yet, without an individual 'advocate' to run VGCs, responsibility for the approach was often negated, as running VGCs was not incorporated into a particular role. The responsibility for VGCs often aligned with roles which included an increased motivation for group learning and support (*legitimation*).

The culture of general practice meant that HCPs expressed resistance to the approach, due to existing pressures in primary care and the lack of motivation to engage with newer ways of working. This resistance reflects an absence of 'cognitive participation' amongst individuals and teams, often built on a lack of coherence of the approach.

Unsustainability was often perceived as a result of the inability to determine 'cognitive participation', as being able to demonstrate impact of the approach was considered dependent on whole team understanding (*activation*) (May & Finch, 2009; May et al., 2015). Participants expressed a lack of time and capacity to evaluate the approach and therefore used surveys and patient feedback to obtain experiential knowledge.

Thus, the inability to establish 'cognitive participation' can hinder both the implementation and impact of VGCs (May & Finch, 2009; May et al., 2015). Buy-in by both HCPs and patients is centred on their own understanding of the approach, which is contextually and pragmatically dependent. Capacity constraints in primary care create barriers in determining the need for VGCs and organisational resources to support implementation are limited.

*Collective action:* The process of implementation was identified as being dependent on the 'collective action' of HCPs in engaging with and operationalising concepts for implementation into practice (May & Finch, 2009; May et al., 2015). A number of processes and training needs were identified by participants as essential in determining the implementation and impact of VGCs (*interactional workability*).

The 'collective action' needed for the implementation of VGCs was often practice dependent (May & Finch, 2009; May et al., 2015). Resources such as technology, finances and roles for VGCs were based on individual practice capacity, with some practices having more resources to implement VGCs than others (*contextual integration*). Often whilst there are the required resources available, time in general practice was regarded as a barrier to implementation (*skill set workability*). Having a

protected role for VGCs was identified as alleviating this barrier of time to implement.

A contention between participants who viewed implementation of VGCs as 'ad hoc' and those who believed in planning and organisation of the approach prior to implementation was highlighted. The 'ad hoc' nature of the implementation of VGCs often meant that the resources required were not often accounted for or presupposed. Participants believed that increased understanding of the approach led to a recognition of the resources needed to implement VGCs (*relational integration*).

Therefore, the need to determine 'collective action' prior to implementation can aid the embedding of the approach into practice (May & Finch, 2009; May et al., 2015). The importance of recognising factors which aid or hinder the implementation of VGCs is necessary to ensure individual pragmatic and contextual factors are accounted for.

*Reflexive monitoring:* The ability to capture impact of VGCs requires the 'reflexive monitoring' of the approach, in order to aid sustainability (May & Finch, 2009; May et al., 2015). The 'ad hoc' implementation of VGCs often meant that they were iteratively developed and refined according to individual practices and patient populations (*individual appraisal; reconfiguration*). Evaluations of VGCs were considered small-scale and practice dependent due to a lack of organisational investment and resources allocated to the approach (*communal appraisal*). How VGCs were evaluated was based on understanding the role and purpose of VGCs, for example, biometrics were measured for LTC reviews, whereas patient experience was monitored for a support group VGC (*systematisation; individual appraisal*).

The ways in which VGCs are evaluated heavily influenced the ability to demonstrate impact and thus provide evidence for future implementation. The reliance on experiential knowledge (qualitative) was often favoured over monitoring of clinical data (quantitative), which has led to the formation of evidence which is predominantly case-study based. This contextual evidence therefore hinders the transferability of findings to other general practice contexts. The need to encompass an understanding of contextual factors associated with the impact of VGCs is of value.

Thus, 'reflexive monitoring' is contextually and pragmatically based. This study highlighted a lack of universal operationalisation of VGCs creates difficulties in establishing coherent impact across general practice as a whole, due to differences in conceptualisation. This recognises the importance of context in establishing impact of the approach.

In summary, unlike the findings displayed in Chapter 6 in relation to NPT, these thematic findings do not explicitly align to a particular NPT construct (May & Finch, 2009; May et al., 2015). Instead, each theme relies on the interconnectedness between factors displayed across all constructs in understanding implementation and impact of VGCs, highlighting the additional complexities of achieving 'normalisation' of an intervention.

Underpinning each theme is the importance of context and the capacity of general practice, in which i-PARIHS (Harvey & Kitson, 2016) is used for further interpretation. The emphasis placed on understanding wider implementation contexts in determining the facilitation of evidence at practice level is highlighted by i-PARIHS (Laycock et al., 2018).

#### **8.5.2.2 i-PARIHS framework (Harvey & Kitson, 2016)**

In recognition of the importance of the interplay between context and capacity of VGCs in determining implementation and impact of the approach, i-PARIHS is a useful framework to interpret key findings (Harvey & Kitson, 2016). i-PARIHS has been used as a theoretical lens of interpretation after analysis has been conducted, providing contextual and theoretical grounding to the study of VGCs in primary care (Duan et al., 2022; Gagliardi et al., 2016; Tierney et al., 2014).

The i-PARIHS framework is described an iterative and integrated approach to successful implementation, resulting from facilitation of an intervention by recipients in their own contexts (Harvey & Kitson, 2016). The need for each construct to be viewed in relation to each other, recognising that implementation is a non-linear and multi-factorial process, is significant in interpretation of these findings. A more detailed overview is provided in section 3.6.2.1.

This framework has value in the interpretation of these thematic findings, with regards to the need to identify individual contexts of implementation, the role of the recipient within the implementation process and the value of innovation.

‘Context’ remains a core construct in the i-PARIHS framework, developed to incorporate a wider focus on the different layers of context through the micro, meso and macro levels, which can impact implementation (Harvey & Kitson, 2016). A distinction between the local immediate context and the wider organisational context are recognised as important considerations.

Distinguishing between the different contextual layers highlights the importance of recognising the ways in which each layer influences implementation. Alignment of the macro, meso and micro levels helps to establish coherency with regards to understanding the environment into which VGCs can be implemented.

'Recipients' are recognised within the i-PARIHS framework at an individual and collective level (Harvey & Kitson, 2016). This recognises the agency HCPs and practices have in contributing to the implementation of VGCs. Individuals are active consumers and constructors of knowledge and therefore have the ability to facilitate or hinder implementation. The need to recognise both individual and collective agency of HCPs can help to aid how VGCs can be navigated to achieve successful implementation.

'Innovation', one of the constructs of the i-PARIHS framework and previously conceptualised as 'evidence', acknowledges the variation in types of knowledge established within healthcare (Bergström et al., 2020; Harvey & Kitson, 2016). New and more emergent, inductive ways of incorporating evidence are generated from practice, and therefore consider the value of HCPs in implementing this process (Harvey & Kitson, 2016). The lack of a focus on 'evidence' highlights the need for HCPs and research to focus on the multi-dimensionality of what is being implemented (Bergström et al., 2020).

In summary, interpretation of key findings in relation to i-PARIHS (Harvey & Kitson, 2016) can aid the distinguishing of factors associated with VGCs in determining successful implementation into practice. Whilst this framework cannot account for all factors associated with the



implementation and impact of VGCs, it helps to highlight key considerations for the implementation process. This framework has built on the constructs proposed by NPT, generating a comprehensive understanding of key findings in relation to implementation theories and frameworks.

### **8.5.3 Comparison with existing virtual and in-person group consultation literature**

The novelty of these study findings has meant that there are limited studies on group consultations which are considered to be comparable for a discussion of results. Each theme reported in this chapter will be discussed in relation to studies on virtual and in-person group consultations.

*‘The context of implementation’:* This study viewed the contextual factors associated with VGCs as fundamental to implementation. The contextual factors identified are considered to be synonymous with findings from the work of Paptousi et al. (2022) and Swaithe et al. (2021). The study by Paptousi et al. (2022) was conducted at a similar time during the pandemic, highlighting the ways in which COVID-19 impacted general practice was a driver for implementation, with both patients and HCPs valuing the importance of human connection and need of social support during this time (Paptousi et al., 2022). Although, this contextual drive for group approaches was not reported at a national level by the study by Swaithe et al. (2021), as this study was conducted prior to the pandemic, the findings demonstrate practice-level contextual barriers to implementation. These barriers were considered to be regarding IT

systems, practice culture, competing interests and having a dedicated facilitator (Swaithes et al., 2021). To mitigate these barriers, Paptousi et al. (2022) proposed the need for collaborative and relational working, considered distinct from traditional hierarchical working established across general practice services.

The culture of general practice was therefore viewed as important in determining the implementation of group consultations, either virtually delivered or in-person. Swaithes et al. (2021) questioned the transferability of findings from an in-person to virtual group setting, however, this study has provided examples where the two approaches align with regards to implementation. The similarities between this study and the findings by Paptousi et al. (2022) highlight the importance of contextual factors in the implementation of the approach. The importance of therefore considering VGCs as pragmatically and contextually applied is therefore evident.

*'Conceptualising implementation'*: The findings in the study are explained further by an originally conceptualised framework by Papoutsis et al. (2022), distinguishing the types of group approaches in primary care. Papoutsis et al. (2022) recognised the interchangeability of VGCs, as a clinical, educational, informational and/or mixed consultation, and further accounted for variation in delivery format. In addition, Papoutsis et al. (2022) identified the delivery of clinical and/or mixed formats required a greater culture change; a reason for practices running educational and informational sessions. Thus, the interchangeability between models of VGCs was subsequently highlighted in this study, with varying ways VGCs are delivered and used in general practice. Whilst referring to in-person group consultations, the systematic review by Booth et al. (2015)

argues that the differences in terminology create confusion, reducing the effectiveness of individual models. Therefore, the need for greater clarity on conceptualisation of VGCs has been highlighted by this study.

Additionally, the organisational resources required for implementation of VGCs were recognised by Papoutsi et al. (2022) and align with the findings identified in this study. Both studies found that VGCs were introduced as a way to free-up resources and reduce the workload and burden on primary care. However, there was little consideration of the organisational resources needed for implementation and often implementation was 'ad hoc' or required significant 'up front' work prior to implementation (Papoutsi et al., 2022; Swaithes et al., 2021). Papoutsi et al. (2022) therefore recognised that motivations for implementing VGCs were demand-led and performance-driven. Thus, Swaithes et al. (2021) identify the need for an implementation strategy, including an 'implementation champion' to run group consultations in practice. The importance of contextual factors was considered to be a part of this individualised implementation strategy for practices (Swaithes et al., 2021).

*'The process of implementation':* The processes surrounding implementation highlighted the pragmatics associated with the approach. This study highlighted the need to ensure an optimum virtual group dynamic to aid successful implementation. However, Papoutsi et al. (2022) reported this as difficult due to the virtual approach creating a further fragmentation to care delivery, with several patients having to have multiple encounters with HCPs due to a lack of understanding and/or issues with technology. This fragmentation was further echoed by Booth et al. (2015) in which group clinics often were run for conditions

primarily requiring self-monitoring, rather than from clinical investigations and test results. Therefore, ensuring the correct processes and training for staff are in place was essential to aid successful implementation into practice.

Findings from both Paptousi et al. (2022) and Booth et al. (2015), in relation to the findings within this study, highlight similar challenges with regards to the dynamic of the group, fragmentation of care as a result of using group consultations and the need for adequate processes and training to support implementation.

*'Capturing impact'*: This study found that capturing impact of VGCs was difficult. Whilst studies by Papoutsis et al. (2022), Booth et al. (2015) and Swaithes et al. (2021) did not explicitly report on the impact of the approach, a lack of evaluation data and research evidence was highlighted, warranting the need for further studies on VGCs. This study highlighted that the contextual and pragmatic factors associated with general practices meant that impact was context-driven and often small-scale. Swaithes et al. (2021) highlight the importance of sustained implementation to capture impact of the approach, due to a lack of evaluation data. Therefore, the need to produce case-studies and published research evidence on VGCs is necessary to demonstrate impact.

In summary, studies by Papoutsis et al. (2022) and Swaithes et al. (2021) provide a real-life contextual account of group consultation models across UK primary care and therefore aids the interpretation of these thematic findings in relation to the existing literature on virtual and in-person group consultations. Whilst these studies (Papoutsis et al., 2022; Swaithes et al.,

2021) identified a number of findings similar to this study, the importance of considering individual contextual and pragmatic factors in determining the ways in which VGCs are implemented into practice is necessary. In addition, Booth et al. (2015) echo the need for a stronger evidence base for group consultation delivery with greater clarification of the models involved.

## **8.6 Strengths and limitations**

The iterative nature of the qualitative semi-structured interviews and the analysis process allowed me to be responsive to the data and participants themselves (Braun & Clarke, 2022b). This enabled the gathering of deeper personal insights from a range of clinical perspectives in primary care (DeJonckheere & Vaughn, 2019). Refinement of the topic guide was made after an initial eight interviews, after discussion with the supervisory team. The refined topic guide was then used on a further two participants to sense check the data collected against the research question, and subsequently then used for a further four interviews. However, on reflection, I may have refined the topic guide earlier than eight interviews, to account for the data collected in relation to the research question.

This study was designed and planned during the COVID-19 pandemic, which meant all interviews were conducted virtually via MS Teams (Vindrola-Padros, 2021). Consideration of online data collection has been presented in Chapter 4. The virtual nature of the interviews meant that I was not able to grasp body language or gestures that might have been captured in-person (Lobe et al., 2022). Whilst I strived to achieve a professional rapport with all participants, the virtual platform created

difficulties in achieving this, i.e. problems with internet connection which broke up conversations. The importance of establishing a professional rapport with participants is central to healthcare research, to ensure richness and true meaning is encapsulated (Pilbeam et al., 2022).

However, the virtual nature of the method is also considered to be a strength of this research study as it allowed me to capture a wide geographical range of participants (Vindrola-Padros et al., 2020). This extended from the recruitment processes to the interview itself. This would have not been achieved if virtual recruitment and data collection methods were not used. Further to this, as participants were able to take part in the interview at their location of choice and time of preference, this helped the interviewees feel more comfortable and relaxed as the interview was at their own convenience which may have helped participants to share deeper insights.

However, despite the variation in geographical location, a limitation of this study was the under-represented nature of diverse cultures (Denzin, 2017). The consent form did not ask about ethnicity or cultural background, and therefore identification of diverse ethnicities and cultures was not recognised *a priori*. In spite of this, a number of participants (n=3) were identified as belonging to diverse heritages, yet the majority of participants (n=11) were not, which may have influenced participant responses and interpretations.

Also, a further limitation of this study is the inability to capture the patient's voice, which may have provided a holistic and broader understanding to how and why VGCs are implemented and patient's experiences of the approach. Further justification is provided in section 1.6.3. Whilst patients

were initially considered for this study, it was decided that further research on VGCs should prioritise patient's experiences of VGCs, highlighted by this study as needing further exploration.

Furthermore, the study sample of 14 participants can be considered small yet is regarded as sufficient in qualitative research due to the depth and complexity of qualitative data (Malterud et al., 2016). Whilst a sample of size of 20 participants was anticipated, the depth and richness of discussion provided by 14 participants meant that the research question was adequately addressed. This was iteratively reflected on during both data collection and data analysis, in achieving 'data saturation' (Saunders et al., 2018) and 'information power' (Malterud et al., 2016). The aim to provide deep insights into the participants perceptions of VGCs was the primary focus of the study, rather than obtaining a superficial understanding of VGCs across a larger sample size (Staller, 2021).

The smaller sample size also aided the identification of appropriate participants using purposive and snowball methods. The use of social media as a recruitment method was further considered to be a minor limitation to the study, as it may produce data that is biased, favouring social media users (Vindrola-Padros et al., 2020). Although, a range of sampling methods was used to obtain participants not only from social media but also from professional networks, which helped to achieve a varied sample population recruited through both these means. The addition of snowball sampling aided the recruitment of participants outside my professional platforms and on social media which helped to gain a broad range of opinions and perspectives. However, not all HCPs were represented in general practice, including practice managers, which may have influenced the study findings and implications.

Achieving an appropriate sample size was not the primary motivator for this study, but rather achieving adequate 'information power' was fundamental (Malterud et al., 2016). Participants were therefore not recruited, despite expressing interest, due to achieving adequate 'information power' after completing 14 interviews and having an in-depth discussion about the data captured so far with the supervisory team.

The use of both implementation theory and the existing literature on virtual and in-person group consultations helps to identify conceptual and real-life consideration of the factors facilitating or hindering implementation of VGCs (Booth et al., 2015; Harvey & Kitson, 2016; May et al., 2015; May et al., 2018; Papoutsi et al., 2022; Swaithe et al., 2021). This helps to ground the findings of this study in real-life contexts.

## **8.7 Reflexivity**

An in-depth reflexive account of the interview study is provided in Appendix 19, through my positionality statement, which was iteratively updated throughout the research journey (Savolainen et al., 2023). In particular, my position as a nurse and a researcher were reflected upon, in relation to the study methods, interpretation and discussion of the results. In addition, each individual interview was reflected upon, identifying points for further consideration in subsequent interviews (Appendix 18).

Further points of reflection are discussed below. A decision was made to only include HCPs, rather than the inclusion of patients as well, in the interview study. Due to the multimethod nature of the thesis, the methods



used are viewed as complementary. After an initial analysis of the first eight transcripts, the importance of framing the research question became apparent. The research question focuses on the implementation and impact of VGCs, in which it felt appropriate that HCPs were interviewed first, and the richness of data collected yielded a greater exploration of HCPs in relation to VGCs. Including patient interviews within the time constraints of a PhD felt superficial, in which there would not be enough time to adequately justify and explore experiences in-depth. This is point of consideration for further research. This contention was further discussed with the West Midlands Knowledge Mobilisation Forum (June 2023) and Keele University's LINK group (November 2023), in which it was concluded that further investigation is needed in relation to patient interviews.

After an initial analysis of the first eight interviews, the topic guide was reformulated in light of the research question. Data seemed to be similar in nature to a previous study on group consultations (Swaithes et al., 2021) and not fully addressing the entirety of research questions, in particular with regards to capturing impact of the approach. Key findings were highlighted from the first eight interviews and gaps not addressed in regard to the research question were highlighted for further consideration (Appendix 48). This identification ensured that I was responding to the needs of the data and the RTA (Braun & Clarke, 2022b) process. Reformulation of the topic guide was discussed with the supervisory team and use for the remainder of the interviews.

## **8.8 Chapter summary**

This chapter has presented an analysis of the semi-structured interview data through RTA (Braun & Clarke, 2022b). Discussion of key findings in relation to the literature was undertaken, identifying the pragmatic nature of the intervention and relevance for clinical practice. The following chapter presents a discussion of the entire thesis, with the development of a series of 'top tips' to aid the delivery and implementation of VGCs in primary care general practice and subsequent implications for clinical practice, research and my role.

# **Chapter 9: Discussion and conclusions**

---

## **Chapter 9: Discussion and conclusions**

---

### **9.1 Introduction**

The primary aim of the methods presented in this thesis were to explore the role, delivery and implementation of VGCs in UK general practice settings. In addition, this thesis aimed to develop a set of 'top tips' to aid the understanding and implementation of the approach in clinical practice.

A series of three studies (systematic review, cross-sectional survey and semi-structured interviews) have individually helped to build a stronger picture of the ways in which VGCs are delivered and implemented in primary care. Each study has provided unique as well as confirmatory insights into a) the pragmatic nature of the approach, b) the lack of an evidence base for VGCs and c) the need for greater understanding and operationalisation of VGCs in practice, which has enabled the development of contextually considerate 'top tips'.

In this final chapter, the thesis rationale is revisited, followed by a summary of key findings from each study and the overarching themes of the thesis. Strengths and limitations of the thesis are then discussed. This chapter continues by providing a set of 'top tips' for general practices to consider when implementing VGCs. Findings are reflected on, in light of the implications for clinical practice and research, as well as my role as a future clinical academic, prior to chapter conclusions.

## **9.2 Thesis rationale revisited**

The knowledge gap identified by the Critically Appraised Topic [CAT] group and subsequent studies by Booth et al. (2015) and Swaithe et al. (2021) highlighted the value of further exploration and research into the role of face-to-face group consultations. However, the ways in which the COVID-19 pandemic impacted general practice meant that, at this time, face-to-face group consultations were contextually impossible. Therefore, by default, face-to-face group consultations were delivered virtually, despite little evidence that this approach was effective and viable. Since the pandemic, little research evidence has been published on VGCs in general practice. By addressing these aims and objectives through a series of research questions, this thesis has sought to contribute to a greater understanding of the role, delivery and implementation of VGCs in UK general practice settings.

## **9.3 Summary of thesis research aims, methods used and key findings**

I believe that this is the first study to explore the role, delivery and implementation of VGCs in UK general practice settings. The overarching aims of this thesis were to, i) identify the evidence for VGCs across primary care general practice, including the current use, uptake, and delivery purposes, and ii) explore the experiences and perceptions of HCPs regarding VGCs. These research aims were addressed by completion of five detailed objectives, which were achieved through a

multimethod research design, using a series of complementary but distinct research methods. The five objectives of this thesis were:

1. To systematically review current best evidence for the uptake and delivery of VGCs nationally and internationally
2. To undertake an online cross-sectional survey of general practice staff to identify current uptake and use of VGCs
3. To explore the experiences of HCPs who have implemented/delivered or have been involved with VGCs
4. To establish the views of key stakeholders and PPIE regarding VGCs
5. To develop 'top tips' for the implementation and delivery of VGCs in primary care general practice

The following section describes the key research questions used to address the aims and objectives of the thesis. Key findings from each study are highlighted and summarised in Table 40.

Table 40: Thesis key findings

**Study 1 – Systematic review: What are the factors affecting uptake and delivery of VGCs for the management of long-term conditions in primary care general practice?**

- A range of terminology, formats and purposes were demonstrated to conceptualise and deliver virtual group-based care which are pragmatically and contextually applied
  - Delivery of VGCs require a bigger cultural shift from usual care practice, often driven by the motivations of HCPs but hindered by the significant time and workload associated with delivering the approach
  - Patients valued the access and social support networks developed within VGCs, reliant on facilitator strategies which aided sustained delivery in practice
  - An increased concern for health priorities for patients was developed as a result of VGCs, as long-term participation in VGCs led to increased lifestyle change and improvement in clinical outcomes
  - Socio-demographic adaptation, including digital inclusivity and required technological infrastructure, influenced uptake of the approach
-

### **Study 2 – Cross-sectional survey: What is the uptake and use of VGCs by HCPs across primary care general practice settings?**

- Pragmatic use of VGCs, including defining VGCs, the roles associated with the approach, how VGCs are delivered and the associated uptake
  - 61% of practices did not use group consultations prior to VGCs, often reliant on staff and patient motivations for VGCs. However, patient uptake was considered a key barrier to use
  - Workload and practice priorities were considered a barrier to the uptake and use, with the need for training, implementation support, protected time and workforce planning
  - Facilitation of VGCs relied on using existing and pre-existing networks to sustain VGCs, including facilitation skills and the characteristics of HCPs themselves
-



**Study 3- Semi-structured interviews: What are the experiences of HCPs implementing and demonstrating impact of VGCs across primary care general practice?**

- The context of implementation of VGCs at a macro, meso and micro level impacted the ways in which VGCs were conceptualised and delivered
- Many participants discussed differing uses and conceptualisations of VGCs which involved pragmatically applied resources, individual and group motivations and patient engagement
- Key consideration of the processes involved with VGCs, including the need to create an optimum group dynamic and ensuring adequate training and planning for the approach
- The ability to capture impact is challenging, resulting in a lack of research evidence and sustainability of the approach

### **9.3.1 What are the factors affecting uptake and delivery of VGCs for the management of long-term conditions in primary care general practice?**

To address the first aim of the thesis, *to identify the evidence for VGCs across primary care general practice, including the current use, uptake, and delivery purposes*, a systematic review of current best evidence for VGCs, nationally and internationally, was conducted (objective 1).

Chapter 3 presented the methods and results of a systematic review and narrative synthesis to identify factors affecting the uptake and delivery of VGCs for the management of LTCs in primary care general practice. This systematic review identified pragmatic and contextual application of VGCs, resulting in a range of terminology used to describe the approach and a variety of formats and purposes. The inability to understand the pragmatic context into which VGCs are delivered can cause a fragmentation in care delivery. Thus, delivery of VGCs required a 'culture shift' to understand newer ways of working which incorporated significant time and workload. This systematic review found that VGCs created an increased concern for health priorities for patients which developed as a result of long-term participation. Social support networks developed between patients aided uptake of the approach.

Notably, this review highlighted positive impacts of using VGCs for the management of LTCs, including improvements in HbA1c and emergency department visits (Tokuda et al., 2016); reduction in both systolic and diastolic blood pressure (Mirsky et al., 2022); and greater patient behaviour change (Mirsky et al., 2023).

Although, whilst these findings are significant for this thesis, this systematic review primarily highlighted the need for further research to be conducted due to the paucity of research evidence on VGCs in UK primary care, and variability in the strength and nature of this evidence. A limited understanding of the factors affecting uptake and delivery of VGCs for the management of LTCs from the literature led to further exploration of the uptake and use of VGCs by HCPs across UK general practices and the development of 'top tips' in relation to implementation of the approach in clinical practice.

### **9.3.2 What is the uptake and use of VGCs by HCPs across primary care general practice settings?**

The first aim of the thesis was further addressed through a cross-sectional survey of HCPs on the uptake and use of VGCs across UK primary care general practice. The analysis of the cross-sectional survey data (Chapter 5; Chapter 6) provided insights into the role of VGCs in UK general practices (objective 2). Combining both descriptive statistics and an inductive content analysis provided a comprehensive overview of the ways in which VGCs are employed and the associated uptake of the approach. In particular, the pragmatic use of VGCs was identified with a variety of conceptualisations, purposes and formats. Identifying various conceptualisations of the uptake and use of VGCs led to further exploration into the experiences of HCPs delivering VGCs in general practice. In addition, the cross-sectional survey highlighted the contextual drive for VGCs, as the majority of participants did not use group consultations prior to VGCs. However, consideration of patient engagement was a key barrier to uptake, and the workload involved to

initiate and sustain the approach was deemed challenging.

Sustainability of VGCs was facilitated by using existing and pre-existing networks.

These findings led to a further investigation of the experiences and perceptions of HCPs implementing VGCs (second aim) to aid clarification and provide a more in-depth exploration of the approach (objective 3). The pragmatic approach to the uptake and use of VGCs led to the development of contextually dependent 'top tips'.

This research question was supported by the involvement of key stakeholders and PPIE representatives, to understand their experiences and/or viewpoints surrounding the uptake and use of VGCs in primary care general practice (objective 4). The SAG and PPIE representatives helped to contextualise the study and provided useful insights into the operationalisation of VGCs, facilitation of the approach, practicalities regarding implementation, and sustainability of use (Chapter 5; Chapter 7).

### **9.3.3 What are the experiences of HCPs implementing and demonstrating impact of VGCs across primary care general practice?**

To address the first aim and additionally the second aim of the thesis, *to explore the experiences and perceptions of HCPs regarding VGCs in primary care general practice*, a semi-structured interview study was undertaken (objective 3). Individual interviews with HCPs were conducted to explore the implementation and impact of VGCs across UK general practices (Chapter 7; Chapter 8). These findings highlighted the barriers

and facilitators in implementing VGCs, heavily dependent on contextual factors at a macro, meso and micro level. This study additionally highlighted the variety of conceptualisations of virtual group-based care, often requiring pragmatic application of resources based on individual contexts. Key drivers of the approach included individual and group motivations, yet patient engagement was viewed as a barrier to implementation due to a lack of attendance and participation. Findings illustrated the need to consider the process of implementation, such as creating an optimum virtual group dynamic, and planning and training in the approach. Demonstrating an assessment of the impact of VGCs is a novel finding identified through this research question, with a lack of research evidence on VGCs to aid adoption and sustainability (Chapter 3). The need for an evidence base was highlighted as contradictory, yet, determining an added benefit was viewed as imperative for funding and implementation. The adaptability of VGCs aided sustainability of the approach, however, created increased disparity in understanding of the model and conceptualisation in practice. Thus, the need to develop 'top tips' which are HCP and practice context dependent was paramount.

A SAG and two PPIE meetings were held to support the development of this study and study results (objective 4). These meetings were held to further contextualise the study and provide useful insights in interpretation of research findings. Whilst patients were not included as participants in this study, understanding the viewpoints of patients is important to fully understand the barriers and facilitators to implementing VGCs into primary care, in particular, in terms of group dynamics, practice mechanisms and facilitation of the approach (Chapter 5; Chapter 7) (Ross

et al., 2018). Insights from PPIE meetings have been considered in this study and for further research projects (Chapter 7).

## **9.4 Overarching themes**

Overarching themes from this thesis were developed by synthesising and interpreting the key findings from each study in relation to the overall research question. Thesis study findings are presented in Table 40.

### **9.4.1 The role, delivery and implementation of VGCs needs to be responsive to individual contexts**

The role, delivery and implementation of VGCs in UK general practice is dependent on the contextual and pragmatic nature of the approach. The recent developments across primary care systems, including the rapid shift to virtual services as a subsequent impact of the COVID-19 pandemic, meant that VGCs have adapted according to contextual factors at a particular time (Baird & Maguire, 2020; Papoutsi & Shaw, 2021; Papoutsi et al., 2022). At the beginning of the pandemic, it is likely that participants may have not encountered VGCs, as a novel and emerging model of care (Baird & Maguire, 2016). This landscape continued to evolve during data collection and analysis, which may have led to increased understanding of the role of VGCs in primary care general practice.

When this research question was originally conceptualised, understanding of the contextual factors surrounding general practice at

that time were considered. However, these factors changed throughout the development of the thesis, which meant that the methods in which this research could be conducted needed to be adapted, thus requiring further exploration into the perceptions of HCPs. In addition, understanding the ways participants ‘made sense’ of the approach was contextually and pragmatically dependent (May & Finch, 2009; May et al., 2015).

In recognition of the changes witnessed across primary care systems at a national and practice level (NHSE, 2014; NHSE, 2016a; NHSE 2019a), NPT recommends the continued appraisal of a new set of practices, to understand how VGCs ‘fit’ with a particular context (May & Finch, 2009; May et al., 2015). In particular, understanding and making sense of a complex intervention, prior to implementation into practice, is of importance (May & Finch, 2009; May et al., 2015). This reflects the processes and mechanisms of social action within a particular context which enables or impedes implementation of an intervention (May & Finch, 2009; May et al., 2015). Moreover, the interplay between ‘context’ and the ‘innovation’ can be aligned to i-PARIHS, highlighting the non-linear nature and multi-factorial processes involved in implementing an intervention (Harvey & Kitson, 2016).

This thesis has shown the ways in which contextual factors have shaped the role, delivery and implementation of VGCs. The empirical chapters within this thesis have supported the use of VGCs in accordance with individual practice contexts, aligning to the importance of responding to the needs of local contexts highlighted by the *NHS Long Term Plan* (NHSE, 2019a) and the development of PCNs (Marcello et al., 2020). In addition, the use of implementation theory as

a theoretical lens of interpretation has aided a greater understanding of the ways in which implementation of complex interventions are understood in relation to particular general practice contexts (Harvey & Kitson, 2016; May & Finch, 2009; May et al., 2018).

The development of 'top tips' rather than recommendations for general practices, reflects the pragmatic and contextually dependent nature of implementing an intervention into practice (Braithwaite et al., 2018; Haynes & Loblay, 2024). The flexibility employed surrounding the use of 'tips', encourages practices to adapt processes and thinking according to their own contexts and does not infer the need to conform to each recommendation due to the Absorptive Capacity [ACAP] general practices hold (Cohen & Levinthal, 1989).

#### **9.4.2 The diversity in terminology relates to pragmatic and contextual factors**

Initially, this thesis determined the sole function of VGCs as a replacement for a 1:1 LTC review in general practice, supported by previous studies on face-to-face and virtually-based group consultations which found this to be the focus of the approach (Booth et al., 2015; Swaites et al., 2021; Tokuda et al., 2016). The word cloud produced within the contextual literature review (Chapter 2) illustrated the variety of terminology used to describe virtual group-based care approaches. On reflection, this initial identification of the variation in terminology used, led to careful consideration of the ways VGCs were used and delivered and how this would impact study results. Often the terminology used to describe VGCs implied different approaches to



virtual group-based care, yet this was not as clear-cut as the descriptive terminology implied. Whilst the identification of terminology used for VGCs was useful, it was not apparent how each approach differed in practice, which required further investigation. It also required the need to refine the definition of VGCs for this thesis.

After conducting a cross-sectional survey on the uptake and use of VGCs by HCPs in general practice, it was apparent that the diversity in terminology identified through this study, reflected the pragmatic and contextual factors at that particular time. This was not something considered initially due to the inability to determine the extent to which contextual factors influenced the role and scope of the intervention. The backlog and increased workload faced by general practices meant that VGCs were no longer solely used for LTC reviews but were used as a mechanism to reduce burnout, maintain contact with patients, and deliver group education (Montgomery et al., 2019). This led to increased variation in the terminology used to describe the approach and the components of the intervention. The overlap between VGC approaches was evident in the systematic review, with many studies needing additional clarification regarding the nature of the intervention to account for differences in practice-based and contextual factors (Paptousi et al., 2022).

In addition, the semi-structured interview study was further able to elaborate on the diversity of terminology identified by the cross-sectional survey study. Whilst various definitions were discussed, it was evident that definitions were grounded by practice priorities. I-PARIHS recognises the role of the 'recipient' at both an individual and collective

level, recognising the agency individuals and organisations have in constructing and consuming knowledge (Harvey & Kitson, 2016).

The development of 'top tips' therefore accounts for the diversity in approaches identified, supporting pragmatic use of 'tips' according to particular general practice contexts.

#### **9.4.3 The role of HCPs in VGCs**

This thesis supports the notion of a 'champion' of VGCs in determining the role, delivery and implementation of the approach. The 'champion' or 'advocate', as defined within this thesis, aligns with literature surrounding the importance of the 'champion' role for face-to-face group consultations (Barnes et al., 2020; Kowalski et al., 2018; Swaithes, et al., 2021). A 'champion' is often a HCPs who influences the implementation of VGCs into practices, recognising the agency HCPs have in determining the success of an intervention in general practice (Harvey & Kitson, 2016).

The ways in which HCPs have shaped how VGCs are conceptualised and delivered has been identified by this thesis. Examples of this include, aligning the approach to a particular professional discipline, i.e. health coach, or associating the approach with professional and personal interests in areas such as lifestyle medicine or health promotion. This suggests that implementation of an intervention is not solely determined by the practice itself but the individuals who facilitate implementation of VGCs. The importance of thus considering the role of the facilitator is significant. Facilitation can be understood in two ways, i) the facilitator role in the VGC itself, or ii) facilitation of the approach as a whole.

Considering the latter interpretation, the 'facilitation' construct of i-PARIHS (Harvey & Kitson, 2016) recognises the skills of the facilitator which enables individuals and practices to be receptive to change and aid successful implementation. This involves interaction with other general practice staff to facilitate implementation but also requires a recognition of context-specific issues which impact the implementation process. The value of the facilitator is being able to enable others to act by building encouraging relationships and enhancing learning.

In light of the findings in this thesis, it may be that the majority of participants were considered to be 'facilitators' of VGCs, due to their personal and professional interest in advocating for VGCs in primary care general practice. Participation in both the cross-sectional survey study and semi-structured interview study were motivated by the participants themselves. However, findings not only reflect support of the approach in practice but acknowledge the role HCPs have in evaluating and understanding the complexities surrounding implementing VGCs into general practice settings.

#### **9.4.4 Evidence on the impact of VGCs is inconclusive**

The findings within this thesis suggest that the evidence on the impact of VGCs still remains inconclusive. Whilst studies in the systematic review (Mirsky et al., 2022; Mirsky et al., 2023; Papoutsis et al., 2022; Tokuda, et al., 2016) highlight positive impacts of VGCs for LTC management, the need to consider the quality and strength of evidence is important to ascertain conclusions surrounding the viability of the approach. Therefore, further research on the impact of VGCs in UK

general practice is recommended to evaluate the effectiveness of implementation (Nuffield Department of Primary Care Health Sciences, 2024). The lack of published research evidence highlighted in the systematic review in both national and international primary care settings, warrants the need for further research on VGCs.

Determining the impact of VGCs remains problematic, as the semi-structured interview study recognised the inability for many participants to measure the 'hidden benefits' of VGCs, with limited understanding of the nature of quantitative and qualitative data. The time involved in delivering the approach, identified in both empirical studies, was reported as a huge challenge to evaluating the impact of VGCs, with little time for work associated with delivering the approach.

Acknowledging the ACAP of an organisation is therefore essential in determining the capacity for practices to demonstrate impact of VGCs (Cohen & Levinthal, 1989).

NPT recognises the value in 'reflexive monitoring' of an approach to aid implementation and sustainability, concerned with both the formal and informal evaluation or monitoring of practices and how these can influence future implementation (May et al., 2015). Recognising the significance of both informal and formal methods of evaluation is a consideration for practices to demonstrate impact at different levels. Without evidencing the impact of VGCs, using both subjective and objective methods of evaluation and research, the value of the approach is unknown and potential use in practice is undetermined.

## **9.5 Strengths of the thesis**

The multimethod nature of this thesis has several strengths not previously discussed in the three previous studies. By using more than one method, including both quantitative and qualitative approaches, results from each phase of the research can stand alone, or be interpreted together, to offer further expansion and explanation of findings, more depth and a richer investigation of VGCs in primary care general practice (Anguera et al., 2018; Creswell, 2009; Johnson & Onwuegbuzie, 2004).

This thesis was conducted in a systematic and transparent manner and reported a reflexive stance throughout the duration of the research. The strength of this multiphase thesis meant that each study was completed within its own timeframe and the study results were independently finalised, before viewing the thesis as a whole (Busetto et al., 2017). A reflexive approach was taken to ensure that my views and values did not influence the results (Ide & Beddoe, 2023; Peddle, 2022). All phases of data collection and analysis have been recorded and undertaken using systematic and rigorous methods.

The results presented in the thesis provide novel insights into the actual experiences and understanding of the role, delivery and implementation of VGCs and address gaps highlighted in the literature (Papoutsi et al., 2022), by considering organisational-level factors, individual motivations and contextual issues relevant to primary care. Consideration of stakeholders and PPIE throughout the research processes has helped to shape the research and improve research adoption (Concannon et al., 2012; Holcomb et al., 2022).

### **9.5.1 Systematic review and narrative synthesis**

To the candidate's knowledge, this systematic review, conducted as part of this thesis, is the first study to appraise and synthesise published research evidence on factors affecting the uptake and delivery of VGCs for the management of LTCs in primary care general practice.

Searches of published literature were comprehensive and systematic, using pre-determined search terms to aid transparency of the final findings. Multiple quality appraisal tools were used to assess potential studies, even though studies were not excluded alone based on lack of quality but to highlight the levels of evidence produced in relation to VGCs.

In addition, the review followed the narrative synthesis guidance recommended by Popay et al. (2006), which aided the robustness of the synthesis. This helped to facilitate the development of themes and insights related to the factors affecting uptake and delivery of VGCs for the management of LTCs in primary care general practice, which could have not been generated from the primary studies alone.

### **9.5.2 Cross-sectional survey**

This cross-sectional survey is the first study of the candidate's knowledge to explore the uptake and use of VGCs in primary care general practice. This study has been published in *Primary Healthcare* (Appendix 2) (Scott et al., 2023).

Data analysis was conducted using an approach to content analysis by Elo & Kyngäs (2008), to aid transparent and clear documentation of the

analysis process. Descriptive statistics were illustrated by the use of graphs and charts in Microsoft Excel to enhance readability and interpretation. Also, the cross-sectional survey followed the STROBE guidelines (von Elm et al., 2007) to ensure transparent documentation of results.

The use of multiple sampling techniques was also a strength of this study as it helped to increase diversity and spread of the sample, with the ability to cover various subgroups (Omair, 2014; Taherdoost, 2016). Also, multiple sampling techniques were used to help mitigate bias of using one sampling method. Although, using various sampling techniques increases the complexity of recruitment and analysis, as it requires more time to plan and time to conduct (Taherdoost, 2016).

### **9.5.3 Qualitative interviews**

The semi-structured nature of the qualitative interviews allowed for further exploration of the experiences of HCPs surrounding the implementation and impact of VGCs. The flexibility in topic guide allowed for iterative development, according to participant responses, ensuring that data captured was relevant to the research question. The multimethod approach taken meant that the results of this study were not informed by previous data sets, but the use of an inductive analysis aided a novel contribution to the evidence base. In addition, strengths of using multiple sampling techniques, similar to the cross-sectional survey methods, helped to gather a broad sample of participants, yet was considered to be more complex to plan recruitment methods (Taherdoost, 2016).

A further strength of the interview study is the use of Braun & Clarke's (2022) RTA, which allowed for a structured but flexible approach to data analysis and interpretation. In addition, the reflexive nature of the analysis, allowed me to ensure that my positionality was identified throughout the duration of the study. Using my interview reflexive diary and positionality statement helped to identify and recognise these biases and assumptions. Also, regular meetings with the supervisory team, throughout the analysis process, helped to contextualise results so an accurate account of the data was presented (Bryman, 2008).

Furthermore, interview findings were discussed with the LINK group to provide further insights and interpretation of the data, aiding the credibility of results (Appendix 49).

## **9.6 Limitations of the thesis**

A weakness of a multimethod approach, compared with a mixed-methods investigation, meant that the results were not integrated, in which they informed subsequent research methods and/or findings (Adu et al., 2022; Creswell, 2011). Taking a mixed-methods approach to this research question may have aided a deeper understanding of the research question due to the mixture of both quantitative and qualitative data, rather than using these data sets to obtain confirmatory insights (Adu et al., 2022). However, the aim of this thesis was not to integrate findings but to provide a comprehensive understanding of VGCs using a series of independent but complementary research methods.

The diversity of VGC approaches identified meant that it is a possibility that not all relevant studies or participants may have been identified. For



the empirical studies within this thesis, inclusion of a detailed description of the nature of the intervention was provided in participant information sheets to mitigate misunderstandings surrounding the approach. The candidate's contact information was also provided to aid clarification if needed.

Also, neither empirical studies researched participants that did not engage with VGCs. This was pragmatically decided *a priori*, in relation to the demands of the research question and the large proportions of HCPs who do not deliver VGCs in general practice.

Both the cross-sectional survey study and semi-structured interview study were conducted at different points during the pandemic, which may have influenced participant's responses, dependent on their length of experience in implementing and delivering VGCs. Each study was limited to just one point in time, in which the altered context of the pandemic may have influenced the role, delivery and implementation of VGCs of HCPs in general practice. This highlights the challenges of research in a fast-paced changing context (Pope et al., 2008). However, key findings from each study produced similar and confirmatory insights, reducing the likelihood of this influencing study results.

The systematic review highlighted a lack of published research evidence on the factors affecting the uptake and delivery of VGCs for the management of LTCs in primary care general practice. Four studies met the inclusion criteria for the systematic review, three of which were based internationally. However, despite the low number of studies included in the review, the narrative synthesis (Popay et al., 2006) explored sufficient ideas and themes that are relevant and contribute to the review. The

depth of analysis is a key strength of the review which has contributed valuable knowledge to the evidence base. The systematic review has highlighted an important gap for future research on VGCs in UK general practice settings.

The cross-sectional survey included a small number of participants (n=36) which may limit the transferability of results. Whilst general practices across the UK vary in terms of service provision and system design, these findings may be applicable to other general practices as contextual and pragmatic factors are likely to be comparable in other practices. The broad spread of participants across nine different areas of the UK also enhances the transferability of findings to other areas of the UK. However, none of the administrative roles including receptionists were identified through purposive, random and snowball sampling, and therefore possible insights may have been missed.

The main limitation of the qualitative interviews was the under-represented nature of diverse cultures within participants (Denzin, 2017), which can be considered reflective of the limited representation of diverse cultures in general practice settings. However, participants were interviewed in their professional roles about their experiences with VGCs and therefore identification of culture was not significant in addressing the research question, yet may have been a key confounding influence. The ethnicity of patient and practice populations was addressed in the interviews to gather a set of demographics of the participants involved. Future research studies focusing on the experiences of VGCs by patients must recognise the influence of culture in the engagement of general practice services.

Furthermore, the interview study had the potential for interviewer bias (Bowling, 2009), and response bias (Löhr et al., 2020; Silverio et al., 2022), which potentially could have shaped results. However, the positive and negative experiences of implementing VGCs suggest that participants gave an honest and accurate portrayal of their experiences. The sample also included those who were continuing to use VGCs and those who have previously used VGCs and were not sustained.

### **9.7 Thesis ‘top tips’ for VGCs across general practice and research**

Findings from this thesis demonstrate the pragmatic and contextual nature of VGCs, in which the approach is delivered and implemented according to practice, staff and patient motivations. This thesis has thus identified the need for ‘top tips’ for general practices to pragmatically adopt, considering barriers and facilitators to implementation are contextually dependent, and may change over time (Braithwaite et al., 2018; Haynes & Loblay, 2024). The following section presents the ‘top tips’ from the thesis findings, considering the implications of these ‘top tips’ clinically in UK general practice settings (Table 41). Figure 42 illustrates an infographic of the ‘top tips’.

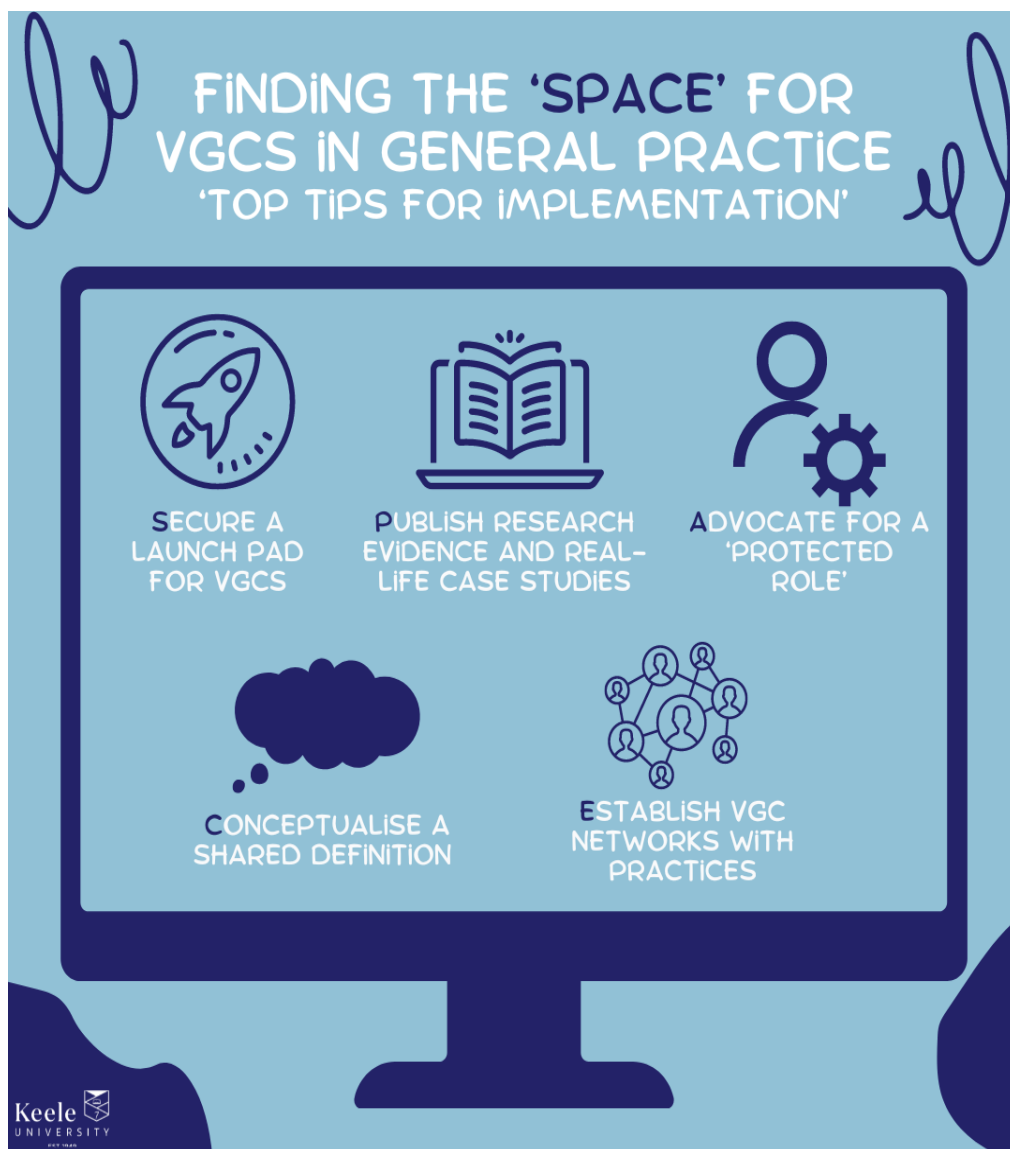


Figure 42: Finding the 'SPACE' for VGCs in general practice infographic

Table 41: Finding the 'SPACE' for VGCs in general practice: 'Top tips' for implementation

Finding the 'SPACE' for VGCs in general practice	
1	<b>'Top tip':</b> Secure a launchpad for VGCs, in terms of time, funding and resources
	<p><b>Evidence from key findings:</b></p> <p><u>Systematic Review</u></p> <ul style="list-style-type: none"> <li>The systematic review identified barriers to delivering VGCs due to 'the fragmentation of distanced care delivery'. A lack of resources, such as the technological infrastructure to support delivery of VGCs, created fragmentation of care delivery and difficulties with implementation. The inability to determine the required resources necessary for successful implementation was thus identified as a challenge.</li> </ul> <p><u>Cross-Sectional Survey</u></p> <ul style="list-style-type: none"> <li>The need for successful workforce planning was considered by several participants, in particular, greater practice investment and understanding the technology involved with the approach.</li> <li>A lack of facilitation and support was the main reason why practices stopped delivering VGCs due the inadequacy of resources, time and the additional workload involved.</li> </ul>

#### Semi-Structured Interviews

- *Determining the organisational resources required to implement VGCs was considered to be a pre-requisite for implementation. This involved funding, time, administration and technological resources. The inability to determine a launchpad for VGCs meant other services were prioritised or VGCs were not sustained.*
- *Having the 'right' facilitator was key in creating an optimum virtual group dynamic, necessary for successful delivery.*

#### **What does this mean clinically?**

Planning and investment in the necessary resources required to implement VGCs into practice requires careful consideration. Resources include, having the appropriate time allocated to plan and run VGCs, consideration of the workload involved in addition to previously established workload and backlog, roles involved in the approach and the technological infrastructure required.

Establishing a launchpad for VGCs helps to identify pragmatics associated with implementing the approach, to best achieve successful implementation into general practice.

2	<b>'Top tip':</b> Publish both research evidence and real-life case studies on VGCs
	<p><b>Evidence from key findings:</b></p> <p><u>Systematic Review</u></p> <ul style="list-style-type: none"> <li>• <i>A lack of published research evidence on VGCs, especially in the UK was demonstrated through the systematic review. The need to demonstrate impact and implementation of VGCs through both published research evidence and real-life case studies is therefore highlighted as a gap in the practice and research evidence base.</i></li> </ul> <p><u>Cross-Sectional Survey</u></p> <ul style="list-style-type: none"> <li>• <i>A lack of time surrounding implementation of VGCs and the time needed to innovate meant several participants described a reluctance to engage with the approach. This can be understood as a lack of time to demonstrate impact of VGCs by publishing evidence of VGCs, due to initial concerns regarding the limited capacity for staff and practices to run VGCs.</i></li> </ul> <p><u>Semi-Structured Interviews</u></p> <ul style="list-style-type: none"> <li>• <i>Several participants reported the value in using case-studies to aid implementation, often learning from others as a means of training.</i></li> </ul>



- *The inability to determine what constitutes impact created difficulty for several participants to evidence the approach. The want to determine a published evidence base for VGCs was reported as ambiguous, due to the inability to capture the hidden benefits of VGCs. Often, there was a distinction between quantitative and qualitative measures.*
- *Various evaluation methods were used, yet these results were not often published or used to demonstrate impact of the approach.*

#### **What does this mean clinically?**

Demonstrating the impact of VGCs through both published research evidence and individual practice case-studies can help other practices identify the barriers and challenges to the implementation of VGCs. This highlights the importance of both evidence-based practice and practice-based evidence in contributing to change in general practice service provision.

Obtaining published research or real-life experiences of the impact of VGCs will help to aid the viability of VGCs as an alternative model of consultation.

3	<b>'Top tip': Advocate for a 'protected role' for VGCs</b>
	<p><b>Evidence from key findings:</b></p> <p><u>Systematic Review</u></p> <ul style="list-style-type: none"> <li>• <i>The need to create a 'culture shift' was highlighted within the systematic review, in which studies described the cultural shift required to implement VGCs. This was often reported as a change in relational working and coordination between staff which often required a sense of responsibility for VGCs as additional to pre-existing roles. This responsibility often meant that VGCs were not implemented due to the time and workload associated with the approach.</i></li> </ul> <p><u>Cross-Sectional Survey</u></p> <ul style="list-style-type: none"> <li>• <i>The cross-sectional survey identified a lack of roles for VGCs, with several participants running VGCs additional to their previously established roles and responsibilities. The largest number of participants were general practitioners. The survey participants constituted of clinical roles, yet responses described these roles as not only undertaking 'the clinician role' in a VGC but also facilitator and coordinator roles. Ambiguity surrounding where VGCs 'sit' in a clinicians daily practice was reported. A lack of investment was described in staff who are able to run VGCs.</i></li> <li>• <i>Many participants described that VGCs were not continued if the person running VGCs left.</i></li> <li>• <i>Roles for VGCs were often reported as HCP dependent and having the necessary attributes to run VGCs.</i></li> </ul>

#### Semi-Structured Interviews

- *Having an individual 'advocate' for VGCs was considered to facilitate implementation. This role was often reported as being coherent with pre-existing clinical roles.*
- *A protected role was often viewed as time-consuming due to understanding newer ways of working at a time of huge pressure in general practice. A lack of capacity in already existing professional roles meant initiating VGCs into practice was considered a challenge.*
- *Ensuring that whole team buy-in, in addition to an individual role, was central to implementation of the approach, as if the HCPs running VGCs had left, VGCs would not be continued.*

#### **What does this mean clinically?**

Advocating for a 'protected role' for VGCs, implemented at a practice or PCN level helps to aid the implementation of VGCs due to the time and workload involved in initiating and sustaining the approach. Yet, this role requires full team buy-in to aid uptake.

A 'protected role' for VGCs is able to aid the conceptualisation of the approach, manage workload and time involved, the processes required and demonstrate impact.

4	<b>'Top tip':</b> Conceptualise a shared definition of VGCs
	<p><b>Evidence from key findings:</b></p> <p><u>Systematic Review</u></p> <ul style="list-style-type: none"> <li><i>The systematic review described various conceptualisations of VGCs, demonstrating fluidity and contextuality of the approach. However, a lack of a shared definition surrounding 'establishing the 'right' delivery format' highlighted the difficulties in operationalising the approach for implementation. Having a shared definition that is pragmatically and contextually applied can therefore benefit a shared understanding to aid implementation into practice.</i></li> </ul> <p><u>Cross-Sectional Survey</u></p> <ul style="list-style-type: none"> <li><i>Sense-making of VGCs aided several participants in understanding the role of VGCs for patients and clinicians alike. This often involved working with others to demonstrate how VGCs are run.</i></li> <li><i>Various definitions of the scope and role of VGCs in practice led to inconsistencies in conceptualisation i.e. education group, support group etc. This ambiguity in definition was reported as individual or practice dependent, often reliant on organisational priorities and funding.</i></li> </ul>

#### Semi-Structured Interviews

- *The context of VGCs was described by many participants as influencing implementation on a macro, meso and micro level. These internal (the culture of general practice; patient characteristics) and external (the influence of the COVID-19 pandemic) influences have conceptualised VGCs according to practice need and patient demand. Therefore, VGCs are reported as contextually and pragmatically responsive, defined in relation to individual practice needs.*
- *Fluidity in definition was reported by many participants to facilitate VGCs, as individuals are able to implement VGCs according to practice need. However, a shared definition was considered necessary within teams to enhance understanding and conceptualisation of the approach.*

#### **What does this mean clinically?**

Implementation of VGCs is dependent on a coherent definition, which is pragmatically and contextually dependent. Whilst VGCs are not universally conceptualised, the purpose of the approach in addressing individual practice priorities and patient demand helps to aid implementation. A lack of internal coherence within practices creates barriers to understanding the purpose of VGCs and the ways in which the approach can be delivered and implemented.

Establishing a coherent but pragmatically dependent definition aids the recognition of VGCs as an alternative model of care.

5	<b>'Top tip':</b> Establish a network of practices using VGCs
	<p><b>Evidence from key findings:</b></p> <p><u>Systematic Review</u></p> <ul style="list-style-type: none"> <li>• <i>The need to seek an 'human connection' online was identified by studies in the systematic review as an additional benefit of VGCs. Whilst this involved clinicians maintaining a virtual rapport with patients and peer interaction between patients themselves, this finding also highlights the importance of networking and establishing virtual connections due to the remoteness of the approach for clinicians implementing VGCs into practice. Thus, seeking a 'human connection' online can be understood in the context of the clinicians themselves.</i></li> </ul> <p><u>Cross-Sectional Survey</u></p> <ul style="list-style-type: none"> <li>• <i>The survey highlighted that training and organisational and practice support was most valuable in helping VGCs get up and running. This involved collaboration with internal members of staff, as well as cooperation with other practices running VGCs.</i></li> <li>• <i>Engaging with formal training was considered as a necessary requirement for the delivery of VGCs and understanding the scope and role of the approach.</i></li> </ul>

#### Semi-Structured Interviews

- *Several participants described using 'experts' in VGCs to help train others in the implementation of the approach. Train the trainer models were viewed as beneficial, reliant on connecting with others already running VGCs.*

#### **What does this mean clinically?**

Establishing a network of practices using VGCs can aid implementation due to the value of learning from others and the need for formal training. This helps to identify the barriers and challenges associated with the approach, and help practices overcome them with real-life case studies.

The value of both formal and informal networking helps to establish worked examples of ways in which VGCs can be implemented, according to practice and patient context.

## **9.8 Narrative interpretation of ‘top tips’**

This section provides a narrative interpretation of the ‘top tips’ for implementation, supported by the key findings from each study within this thesis.

### **9.8.1 Secure a launchpad for VGCs, in terms of time, funding and resources**

The three studies in this thesis identified the need for practices or individuals wanting to run VGCs in practice to secure a launchpad prior to implementation. This launchpad was considered to be either a funding platform, often external to the practice, time allocated to run VGCs, or the resources required to deliver the approach, such as the appropriate technological infrastructure or facilitator role. The systematic review highlighted the challenge of not having the technological infrastructure available to run VGCs which created a fragmentation to distanced care delivery. The impact of the COVID-19 pandemic meant that practices were ‘forced’ to use digital technologies at an increased pace (Baird & Maguire, 2020), and therefore little consideration surrounding the technological support needed to implement and deliver VGCs.

To mitigate this, the cross-sectional survey highlighted the benefits of successful workforce planning and greater practice investment.

However, the cross-sectional survey found that often participants would stop delivering VGCs due to the inadequacy of resources, time and the additional workload involved. In particular, having the time to run VGCs was highlighted as a key barrier to the uptake and use of the approach.



Thus, securing a launchpad may identify some potential problems, prior to implementation of the approach. The need to consider the organisational resources as a pre-requisite to implementation was therefore described by several participants in the semi-structured interview study. The inability to determine a launchpad for VGCs often resulted in a lack of sustainability of the approach.

The need to 'secure a launchpad for VGCs' is therefore a key consideration in the implementation of VGCs, providing a platform for practices to increase the chance of successful adoption, implementation and sustainability across UK general practices.

### **9.8.2 Publish both research evidence and real-life case studies on VGCs**

This thesis has highlighted the limited evidence base for VGCs in UK general practice, in which the studies within this thesis have provided novel and confirmatory insights into the role, delivery and implementation of the approach. The lack of a published research evidence base, both nationally and internationally, was identified through the systematic review, with the need for further research to be conducted. Whilst a number of case studies supporting effective use and delivery of VGCs is beneficial for practices to emulate and learn from, the impact these case studies have in demonstrating wide-spread impact is minimal due to differences in context.

However, the cross-sectional survey highlighted that publishing research on VGCs, inclusive of case studies, is problematic, due to the time-consuming nature of VGCs themselves and the lack of time to

evaluate the approach. This was supported by several participants in the semi-structured interview study, in which there was a want to demonstrate impact of VGCs by publishing evaluation data, but this was often difficult due the inability to determine what constitutes as 'impact' of the approach. Several participants described a juxtaposition between quantitative data which is tangible and qualitative data which is *'just kind of patient's words'* (P11\_HWC).

Therefore, publishing both research evidence and real-life case studies on VGCs is beneficial for future implementation and the associated impact of the approach. However, in some general practice settings, this may be difficult due to the inability to support research and evaluation.

### **9.8.3 Advocate for a 'protected role' for VGCs**

Advocating for a 'protected role' for VGCs was identified as a potential way to mitigate challenges with time, workload and responsibility for VGCs. A 'protected role' can be defined as a role with the sole purpose of leading or running VGCs. Several participants in both the cross-sectional survey study and the semi-structured interview study described the responsibility of VGCs to be additional to a previously established role. Roles or individual attributes which were considered to align with the nature of VGCs, such as health coaches, were considered suitable. However, a lack of sustainability was identified in both empirical studies, due to the increased responsibility placed on individuals to run VGCs, coupled with the lack of capacity in general practice. A lack of sustainability was also reported in the cross-sectional

survey, as if the individual running VGCs left, the approach would not be sustained.

To address the challenge of where VGCs 'sit' in general practice, several participants in the semi-structured interview study highlighted the need for an 'advocate', thus considered to be a 'protected role' for VGCs. However, unlike the 'champion' role, termed by Swaithes et al. (2021), the role of the 'advocate' seems to extend further than merely aiding engagement and buy-in of the approach, but has emancipatory value stemming from nursing practice to aid use of the approach for the benefits of patients and HCPs alike. Although, establishing a 'protected role' was seen as time-consuming, due to the need to understand newer ways of working at a time of increased pressures in general practice.

The findings from the semi-structured interview study, not only supported the idea of an 'advocate' of VGCs, but also ensure this role is backed by whole team engagement.

Therefore, the ability to advocate for a 'protected role' is contextually dependent according to practice capacity. Having a launchpad to invest in a 'protected role' can help to aid implementation of the approach into practice.

#### **9.8.4 Conceptualise a shared definition of VGCs**

Conceptualisation of VGCs was reported as a common finding across all three studies in this thesis. The inability to determine a single definition of VGCs echoes the need for practices to be responsive to the various conceptualisation's and uses of the approach. The systematic

review highlighted a number of definitions of VGCs, despite focusing on the use of VGCs for the management of LTCs in general practice. The inability to determine a single definition of the approach, created difficulties in 'establishing the 'right' delivery format' for practices.

This finding was echoed by the results of the cross-sectional survey, which demonstrate pragmatic and contextual definitions and use of VGCs. Often, particular conceptualisations of VGCs were supported if they aligned with organisational priorities and funding. However, the cross-sectional survey highlighted the value in sense-making of VGCs, which aided the understanding of the role of VGCs for patients and clinicians alike. Sense-making often meant learning from others how VGCs are run and delivered (May & Finch, 2009; May et al., 2015).

The semi-structured interview study recognised the importance of contextual factors which influenced particular uses and conceptualisations of VGCs. This was reported at a macro level, i.e. the influence of the COVID-19 pandemic; a meso level, i.e. the culture of general practice, and a micro level, i.e. patient characteristics. Like the cross-sectional survey, participants in the semi-structured interview study felt definitions of VGCs were tailored to organisational need.

Therefore, this thesis has highlighted the need to conceptualise a shared definition which is contextually and pragmatically dependent to each practice or PCN. Whilst the fluidity of definition enhances the adaptability of the approach, having a shared definition internal to individual practices or PCNs aids understanding and successful implementation. Ambiguity arises when conceptualisation is misunderstood and not aligned to practice priorities.

### **9.8.5 Establish a network of practices using VGCs**

Key findings from each study within this thesis alluded to the importance of establishing a network of practices using VGCs. Whilst the systematic review highlighted that seeking a 'human connection' was significant for patients, this finding can be understood in the context of the clinicians themselves. The cross-sectional survey study thus found that both training and organisational support of VGCs helped the uptake and use of the approach, in particular, cooperation with other practices running the approach. Formal training was considered to be as beneficial as networking with other practices running VGCs. In addition, the semi-structured interview study highlighted the need for 'experts' who run VGCs to help train others in implementing the approach. Particular training models, such as trainer the trainer, were viewed as beneficial.

Therefore, establishing a network of practices using VGCs can not only enhance the implementation of the approach but can also aid the sustainability of VGCs, as practices are able to learn and engage with others who have already faced and overcome barriers to implementation. It is recommended that VGCs are implemented at a primary care network [PCN] level to aid the development of a network of practices using VGCs.

## **9.9 Implications for clinical practice, research and my role**

This thesis has identified implications for the role, delivery and implementation of VGCs in primary care. The following section presents the implications of the results of thesis for clinical practice, research and my role as a future clinical academic, followed by a discussion of the mobilisation of thesis findings, and finally, the thesis conclusion.

### **9.9.1 Implications for clinical practice**

The findings from this thesis have highlighted the need for pragmatic and contextually-based considerations for the implementation and delivery of VGCs. I feel that the implementation of VGCs is best situated across a PCN, rather than at practice level, facilitated through the additional roles and reimbursement scheme [ARRS], due to a wider range of practices involved, a greater number of patients and the need for collaboration of services to meet the demands of local contexts. The context into which VGCs were implemented (Chapter 2) highlights the need for collaborative working at an organisational level. However, a consideration of the future uncertainty of PCN's and the ever-changing landscape of primary care (NHS Confederation, 2022; Primary Care Contracting, 2023), necessitates adaptability of VGCs to aid sustainability and successful implementation.

The findings from this thesis suggest that nurses are seen to be key advocates for implementation, due to the ability to provide holistic care for patients, considered to be of value in VGCs (Chapter 8). In particular, the semi-structured interviews with HCPs highlighted that nurses are seen to be the most suitable clinical staff to deliver VGCs,

due to their involvement in LTC reviews. In addition, two of the studies included in the systematic review (Papoutsis et al., 2022; Tokuda et al., 2016) used nurses to deliver the intervention. The cross-sectional survey (n=12) recorded that the second largest group of respondents were advanced clinical/nursing practitioners (n=7) and GPNs (n=5), and nurses were the largest group of participants in the semi-structured interviews (n=4), compared to other clinical roles.

The role of the enhanced practice nurse, as part of the ARRS, is therefore seen to be best suited to deliver and implement VGCs across a PCN (HEE, 2021b; NHSE, 2024a). Enhanced practice nurses are required to engage with research, innovation and have a post-graduate qualification at level 7 or above, relevant to their area of enhanced practice (HEE, 2021b; NHSE, 2024a), and thus would be equipped with the ability to use the '*SPACE*' approach to deliver VGCs into primary care.

As the role of the enhanced practice nurse is currently funded through ARRS, the ability to '*secure a launchpad for VGCs*' is possible through this scheme, as practices do not have to internally fund the role. As an additional funded role to primary care, the enhanced practice nurse is able to '*advocate for a 'protected role' for VGCs*', in which this role is 'protected' in the sense that enhanced practice nurses offer additional services to already established roles and systems. The need to work across a PCN aids the ability to '*establish a network of practices using VGCs*', which enhances implementation across a wider area of practice. The wider collaboration across a PCN further provides a foundation to '*conceptualise a shared definition of VGCs*', which is contextually applied and relevant to local populations, facilitated by the enhanced

practice nurse role. In addition, the requirement to engage with research will help to '*publish both research evidence and real-life case studies on VGCs*', which will subsequently aid the ability to demonstrate impact of the approach.

Whilst it is acknowledged that other ARRS roles have facilitated VGCs or broader applications of the approach, this thesis focuses on the use of VGCs as alternative to routine, clinical care in general practice.

Routine, clinical care, such as LTC reviews, are primarily conducted by clinical staff such as GPNs. Although other ARRS roles, such as health and well-being coaches have facilitated VGCs, this does not reflect the approach to clinical care described in this thesis as a VGC. The varying definitions of VGCs make it difficult to draw comparisons between VGCs conducted by health and well-being coaches and VGCs used a clinical consultation in general practice. Therefore, the role of the enhanced practice nurse was considered as a way to deliver and implement VGCs.

However, it is important to consider restrictions on ARRS roles, such as the enhanced practice nurse, which may hinder their ability to deliver VGCs, such as, specific training needs, additional to usual consultation skills; varying populations across a PCN with different medical conditions and health concerns; management of a larger group of patients, and the use of technology and confidentiality concerns across multiple practice locations.

It is also recommended that VGCs are used in clinical practice as an alternative to routine care, or if appropriate, as an additional consultation. The viability of using VGCs as a replacement to routine



care is unknown, due to the challenges of implementing the intervention and sustaining the approach over a period of time. Further considerations are centred around the viability of VGCs to manage particular health conditions, and the suitability for patients and practices alike. It is recommended that VGCs are appropriate for certain patients under certain circumstances, due to the flexibility in duration of appointment, mode of attendance, confidentiality concerns and accessibility (Booth et al., 2015).

The inability to ascertain clinical improvements thus limits the possibility of using VGCs as a replacement to clinical reviews in general practice at present. This indicates that further research needs to evidence the clinical impact on patient outcomes using VGCs. Reflections on the clinical implications of each 'top tip' have additionally been considered (Table 41).

The pragmatic and contextually dependent 'top tips' also helps to aid implementation of VGCs into practice, as the uptake of research findings in clinical practice can often appear as unpredictable (Braithwaite et al., 2018; Eccles et al., 2005). The choice of 'top tips' rather than recommendations, removes the rigidity of assuming all recommendations must be followed to achieve successful implementation. The National Institute for Health and Care Excellence [NICE] guidelines on producing recommendations (2012; 2016) highlight that recommendations should be specific about the exact intervention being recommended and the group of people for whom it is recommended for. The variability in the contextual and conceptual landscape of VGCs therefore negates standardised, 'blanket'

implementation and warrants a pragmatic approach to recommendations.

Thus, by definition, a 'tip' is '*a useful piece of advice*' (Collins Dictionary, 2024), which reflects the pragmatic approach taken in this thesis.

Pragmatism posits that research must point to actionable outcomes, concerned with the appropriateness and practical consequences of research knowledge (Campbell et al., 2021; Eccles et al., 2005; Glasgow & Riley, 2013). 'Tips' are considered to be short, practical pieces of advice aimed at aiding HCPs to implement VGCs into practice. Stakeholder opinions, consisting of both HCPs and patients, further recognised the contextuality of VGCs, lending to more pragmatic approach to recommendations in clinical practice. In addition, the ways in which HCPs engage with knowledge has thus been considered.

Consideration of the ways in which HCPs engage with research findings has also been of great importance (Curtis et al., 2016; Defeyter et al., 2009). This led to the development of an infographic to illustrate the 'top tips' for digestible comprehension, as the 'picture superiority effect' recognises that information displayed in picture or visual format is more remembered than information displayed as words (Defeyter et al., 2009). In addition, consideration of the number of 'tips' recommended for general practices was important, due to 'information overload' and the ability to understand and assimilate information with a lack of capacity in general practice settings (Arnold et al., 2023; Shah et al., 2019).

### **9.9.2 Implications for research**

This thesis has raised three important considerations for future research on VGCs. The first implication relates to the value of patients in understanding the role of VGCs in general practice. The second implication involves the role of VGCs for the management of LTCs. The third implication focuses on the appropriate research methodology used to conduct further research on VGCs.

Whilst this study addressed many of the gaps in the literature, with regards to the demonstrated uptake and use of VGCs and the experiences of HCPs implementing VGCs and the associated impact, the thesis has raised more questions than it has answered. The paucity of evidence on the role, delivery and implementation of VGCs highlights a potential avenue for future research on the topic, in particular, the experiences of patients using VGCs.

Inclusion of patients can help to aid a greater holistic understanding of the barriers and facilitators of delivering and implementing VGCs in general practice, in relation to those using the approach (Ross et al., 2018). Whilst this thesis did not include patient participants, patient representation was achieved as part of stakeholder engagement and PPIE meetings. These patient insights generated questions related to the practicalities surrounding VGCs and the suitability for patient populations. Thus, the need to consider patient populations which use VGCs is significant for the research evidence base. A community of practice is recommended by Swaithes et al. (2023) to bring stakeholders that may not otherwise work together, offering a platform to integrate the voices and knowledge of all recipients.

Also, conducting further research on the viability of VGCs for the management of LTCs has been highlighted by the paucity of research evidence identified by the systematic review. It may be beneficial to update this systematic review of VGCs to manage LTCs in general practice, to additionally include studies post-pandemic, which may demonstrate further use of the approach as an alternative to clinical practice.

In terms of methodology, a consideration for future research studies is the use of a realist methodology. A realist evaluation is able to evaluate and provide evidence for the adoption of evidence-based models of care, understanding the interacting contextual elements and mechanisms which influenced the ways in which an intervention is implemented (Nielsen et al., 2022). In particular, a realist evaluation identifies how a research intervention is implemented and works in clinical practice, for whom, under what circumstances, how and with what resource implications (De Souza, 2022; Pawson & Tilley, 1997; Pawson et al., 2005). This thesis has highlighted the need to consider research methodologies which account for contextual differences which may impact research findings and explanations. Findings from this thesis highlight the need for more work on realist conditions to demonstrate the workability of VGCs is therefore needed. The development of 'top tips' for implementation aids the workability of this approach into practice.

The pragmatic nature of the research also lends itself to consideration of an implementation strategy. This will help to aid identification of the actual challenges and barriers faced in the implementation of the approach and how these challenges were subsequently overcome. A

study by Ross et al. (2018) have provided a worked example of an implementation strategy used to implement a digital health intervention into primary care, which can be emulated in light of VGCs.

### **9.9.3 Implications for my role**

Not only has this thesis had implications for clinical practice and research, but this thesis has also led me to question, '*what next?*'.

Should I be successful, this PhD will provide a platform to develop my career as a clinical academic, a dual role combining a clinical career with a research career (Ketcherside et al., 2017; Shoghi et al., 2019).

My interest in pursuing a clinical future off the back of academic attainment has been supported by the IAU and the School of Nursing and Midwifery, who will act as a future host for my research career, in conjunction with navigating a clinical role as part of local primary care networks. The supervisory team backs this vision, in particular, the lead supervisor [AF], who is working nationally to support nurses to develop clinical academic roles. In addition, potential post-doctoral funding opportunities for nurses, midwives and allied health professionals [AHPs] is offered by the School for Primary Care Research [SPCR] and the Society for Academic Primary Care [SAPC], which may enable further research and professional development opportunities.

My interest in VGCs and newer ways of working in primary care general practice is also supported by an application to conduct a mixed methods evaluation of group consultations in Devon, in which I will be employed as a research assistant on the project.

### 9.10 Mobilisation of thesis findings

Consideration of the ways in which these thesis findings can be mobilised has been of great importance throughout this study (Ward, 2017). The ACAP (Cohen & Levinthal, 1989; Vasconcelos et al., 2019) of general practice implies that, despite the development of key and novel insights, the ability to recognise, assimilate and apply this knowledge in practice is challenging. Developing 'top tips' which can be used in clinical practice recognising the diverse nature of general practice and the ACAP these organisations hold (Cohen & Levinthal, 1989). Therefore, the need for contextually dependent 'tips' rather than recommendations was favoured, as practices are able to flexibly employ 'tips' according to their organisational goals and priorities. If 'top tips' are produced, it does not mean that practices will necessarily be able to implement all of them, but point to actionable outcomes (Campbell et al., 2021; Eccles et al., 2005; Glasgow & Riley, 2013).

Findings from the three studies should be disseminated via professional social media sites, national nursing organisational bodies, nursing conferences and academic publications. The cross-sectional survey has already been published in *Primary Healthcare* (Appendix 2) (Scott et al., 2023). Findings should also be mobilised through the IAU networks, including patients and the public, clinical collaborations and knowledge mobilisation systems to aid a greater understanding surrounding the implementation of knowledge into practice (Glasgow & Riley, 2013).

In addition, Swaithes et al. (2024) have produced a toolkit to optimise knowledge mobilisation of the implementation of evidence-based guidelines into primary care, which identifies the importance of early

evaluation and sustainability planning to ensure research and innovations are relevant to local contexts, thus aids translatability into practice.

### **9.11 Conclusion**

This thesis took a multimethod approach to explore the role, delivery and implementation of VGCs in primary care general practice and has developed ‘top tips’ to aid possible implementation into practice. The findings have highlighted the pragmatic and contextual nature of the approach, influencing how VGCs are delivered and implemented in real-world clinical settings. Using implementation theory as a theoretical lens of interpretation has aided a greater understanding of the barriers and facilitators associated with implementation of complex interventions (Haynes & Loblay, 2024). Identification of these barriers has led to the development of ‘top tips’, which can be used to guide general practices in using and implementing VGCs. Further research is needed to understand the role of VGCs in real-life clinical settings, taking into account contextual and practice factors, which may enhance or impede implementation of VGCs. In particular, acknowledging the experiences of patients involved in VGCs will help to aid a greater understanding of the factors associated with the role, delivery and implementation of the approach. Recognising the contextually dependent nature of VGCs is necessary to identify how an intervention can be best implemented, finding the ‘space’ for VGCs in UK general practice settings as an alternative model of care.

# References

---



## References

---

- AccuRx. (2023). *A blueprint for recovering access*.  
<https://drive.google.com/file/d/1DiRvgOmkwghCE-PO2nnHUCcwT1o5ozZr/view?pli=1>
- Adu, J., Owusu, M. F., Martin-Yeboah, E., Pino Gavidia, L. A., & Gyamfi, S. (2022). A discussion of some controversies in mixed methods research for emerging researchers. *Methodological Innovations*, 15(3), 321-330. <https://doi.org/10.1177/20597991221123398>
- Al-Ababneh, M. M. (2020). Linking ontology, epistemology and research methodology. *Science & Philosophy*, 8(1), 75-91.
- Al-Badri, M., Kilroy, C. L., Shahar, J. I., Tomah, S., Gardner, H., Sin, M., Votta, J., Phillips-Stoll, A., Price, A., Beaton, J., Davis, C., Rizzotto, J. A., Dhaver, S., & Hamdy, O. (2022). In-person and virtual multidisciplinary intensive lifestyle interventions are equally effective in patients with type 2 diabetes and obesity. *Therapeutic Advances in Endocrinology and Metabolism*, 13, 20420188221093220. <https://doi.org/10.1177/20420188221093220>
- Alderwick, H., & Ham, C. (2017). Sustainability and transformation plans in the NHS in England: What do they say and what happens. *British Medical Journal*, 356, 1541.
- Alkouri, O., Khader, Y., Al-Bashaireh, A., Al Marzouqi, A., Zyoud, A., Jarrah, M., Khassawneh, B., Khamaiseh, K., & Schultz, T. (2023). Development of a telemedicine group educational program for patients with heart failure: A delphi

study. *Heliyon*, 9(3),

e14287.

<https://doi.org/10.1016/j.heliyon.2023.e14287>

Allemang, B., Sitter, K., & Dimitropoulos, G. (2022). Pragmatism as a paradigm for patient-oriented research. *Health Expectations: An International Journal of Public Participation in Health Care and Health Policy*, 25(1), 38–47.

Althubaiti, A. (2016). Information bias in health research: Definition, pitfalls, and adjustment methods. *Journal of Multidisciplinary Healthcare*, 9, 211–217.

Alvesson, M., & Skoldberg, K. (2009). *Reflexive methodology: New vistas for qualitative research* (2nd ed.). SAGE.

Ando, H., Cousins, R., & Young, C. (2014). Achieving saturation in thematic analysis: Development and refinement of a codebook. *Comprehensive Psychology*, 3.

Anguera, M. T., Blanco-Villaseñor, A., Losada, J. L., Sánchez-Algarra, P., & Onwuegbuzie, A. J. (2018). Revisiting the difference between mixed methods and multimethods: Is it all in the name?. *Quality & Quantity*, 52, 2752-2770.

Archibald, M. M., Ambagtsheer, R. C., Casey, M. G., & Lawless, M. (2019). Using zoom videoconferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods*, 18, 1-8.

Arizmendi, B. J., Gress-Smith, J. L., Krieg, C., & Waddell, J. (2023).

Adapting group CBT-I for telehealth-to-home with military veterans in primary care. *Journal of Primary Care & Community Health*, 14. doi:10.1177/21501319221143722

Arnold, M., Goldschmitt, M., & Rigotti, T. (2023). Dealing with

information overload: A comprehensive review. *Frontiers in Psychology*, 14, 1122200.

<https://doi.org/10.3389/fpsyg.2023.1122200>

Asprey, A., Paterson, C., & White, A. (2012). 'All in the same boat': A

qualitative study of patient's attitudes and experiences in group acupuncture clinics. *Acupuncture Medicine*, 30, 163-169.

Aungst, H., Ruhe, M., Stange, K. C., Allan, T. M., Borawski, E. A.,

Drummond, C. K., Fischer, R. L., Fry, R., Kahana, E.,

Lalumandier, J. A., Mehlman, M., Moore, S. M., PHAB Staff and

Writing Committee, & PHAB Cleveland Advisory Committee

(2012). Boundary spanning and health: Invitation to a learning community. *London Journal of Primary Care*, 4(2), 109–115.

<https://doi.org/10.1080/17571472.2012.11493346>

Austrom, M. G., Geros, K. N., Hemmerlein, K., McGuire, S. M., Gao, S.,

Brown, S. A., Callahan, C. M., & Clark, D. O. (2015). Use of a

multiparty web based videoconference support group for family

caregivers: Innovative practice. *Dementia (London, England)*, 14(5), 682–690.

<https://doi.org/10.1177/1471301214544338>

Ayoub, W. T., Newman, E. D., Blosky, M. A., Stewart, W. F., & Wood, G. C. (2009). Improving detection and treatment of osteoporosis: Redesigning care using the electronic medical record and shared medical appointments. *Osteoporosis International: A Journal Established as Result of Cooperation Between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*, 20(1), 37–42.  
<https://doi.org/10.1007/s00198-008-0635-x>

Azar, K. M., Aurora, M., Wang, E. J., Muzaffar, A., Pressman, A., & Palaniappan, L. P. (2015). Virtual small groups for weight management: An innovative delivery mechanism for evidence-based lifestyle interventions among obese men. *Translational Behavioral Medicine*, 5(1), 37–44.  
<https://doi.org/10.1007/s13142-014-0296-6>

Baird, B. (2020). *How has general practice responded to the Covid-19 (coronavirus) outbreak?*. The Kings Fund.  
<https://www.kingsfund.org.uk/blog/2020/04/covid-19-general-practice>

Baird, B., Charles, A., Honeyman, M., Maguire, D., & Das, P. (2016). *Understanding pressures in general practice*. The Kings Fund.  
[https://www.kingsfund.org.uk/sites/default/files/field/field\\_publication\\_file/Understanding-GP-priorities-Kings-Fund-May-2016.pdf](https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/Understanding-GP-priorities-Kings-Fund-May-2016.pdf)

Baird, B., & Maguire, D. (2020). *Understanding factors that enabled digital service change in general practice during the COVID-19 pandemic*. The Kings Fund.

<https://www.kingsfund.org.uk/sites/default/files/2021-02/Understanding%20factors%20that%20enabled%20digital%20service%20change%20in%20general%20practice%20during%20the%20Covid-19%20pandemic.pdf>

Baird, B., & Wickens, C. (2024). *GP contract 2024/2025 explained: Funding, incentives and the workforce*. The Kings Fund.  
<https://www.kingsfund.org.uk/insight-and-analysis/long-reads/gp-contract-2024-25-explained#:~:text=Overall%20funding%20in%20the%202024/25%20GP%20contract.%20In%202024/25,%20the>

Baldwin, A. (2014). Putting the philosophy into PhD. *Working Papers in Health Sciences*, 1,10.

Banbury, A., Parkinson, L., Nancarrow, S., Dart, J., Gray, L. C., & Buckley, J. (2016). Delivering patient education by group videoconferencing into the home: Lessons learnt from the telehealth literacy project. *Journal of Telemedicine and Telecare*, 22(8), 483–488.  
<https://doi.org/10.1177/1357633X16674359>

Banks, J., Farr, M., Salisbury, C., Bernard, E., Northstone, K., Edwards, H., & Horwood, J. (2018). Use of an electronic consultation system in primary care: A qualitative interview study. *British Journal of General Practice*, 68(666), 1-8.

Baqir, W., Gray, W. K., Blair, A., Haining, S., & Birrell, F. (2020). Osteoporosis group consultations are as effective as usual care:

Results from a non-inferiority randomized trial. *Lifestyle Medicine*, 1(1), e3.

Barnes, P. A., Staab, E. M., Campbell, A., Schaefer, C., Quinn, M. T., & Baig, A. A. (2020). Organizational factors influencing the early implementation process of diabetes group visits by five midwestern community health centers: A multisite case study analysis. *Population Health Management*, 23(4), 297–304. <https://doi.org/10.1089/pop.2019.0110>

Barnett-Page, E., & Thomas, J. (2009). Methods for the synthesis of qualitative research: A critical review. *BMC Medical Research Methodology*, 9, 59, 1-11.

Bartley, K. B., & Haney, R. (2010). Shared medical appointments: Improving access, outcomes, and satisfaction for patients with chronic cardiac diseases. *Journal of Cardiovascular Nursing*, 25(1), 13-19.

Bauer, M. S., Damschroder, L., Hagedorn, H., Smith, J., & Kilbourne, A. M. (2015). An introduction to implementation science for the non-specialist. *BMC Psychology*. 16;3(1), 32.

Bauer, M. S., Krawczyk, L., Tuozzo, K., Frigand, C., Holmes, S., Miller, C. J., Abel, E., Osser, D. N., Franz, A., Brandt, C., Rooney, M., Fleming, J., Smith, E., & Godleski, L. (2018). Implementing and sustaining team-based telecare for bipolar disorder: Lessons learned from a model-guided, mixed methods analysis. *Telemedicine Journal and E-health : The Official*

*Journal of the American Telemedicine Association*, 24(1), 45–53. <https://doi.org/10.1089/tmj.2017.0017>

Baynham, D., & Hudson, M. (2020). *Technology in the NHS - Rollout of video consultation across general practice*. <https://healthtech.blog.gov.uk/2020/03/26/rollout-of-video-consultation-across-general-practice/>

Bazeley, P. (2006). The contribution of computer software to integrating qualitative and quantitative data analyses. *Research in the Schools*, 13(1), 64-74.

Beany, P., Hatfield, R., Hughes, A., Schmid, M., & Chambers, R. (2019). Creating digitally ready nurses in general practice. *Nursing Management*. doi: 10.7748/nm.2019.e1840

Beck, A., Scott, J., Williams, P., Robertson, B., Jackson, D., Gade, G., & Cowan, P. (1997). A randomized trial of group outpatient visits for chronically ill older HMO members: The cooperative health care clinic. *Journal of the American Geriatrics Society*, 45(5), 543–549. <https://doi.org/10.1111/j.1532-5415.1997.tb03085.x>

Bendassolli, P. F. (2013). Theory building in qualitative research: Reconsidering the problem of induction. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 14(1).

Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, 2, 8-14.

- Bergelson, I., Tracy, C., & Takacs, E. (2022). Best practices for reducing bias in the interview process. *Current Urology Reports*, 23(11), 319–325. <https://doi.org/10.1007/s11934-022-01116-7>
- Bergström, A., Ehrenberg, A., Eldh, A. C., Graham, I. D., Gustafsson, K., Harvey, G., Hunter, S., Kitson, A., Rycroft-Malone, J., & Wallin, L. (2020). The use of the PARIHS framework in implementation research and practice-a citation analysis of the literature. *Implementation Science : IS*, 15(1), 68. <https://doi.org/10.1186/s13012-020-01003-0>
- Bernell, S., & Howard, S. W. (2016). Use your words carefully: What is a chronic disease?. *Frontiers in Public Health*, 4, 159. <https://doi.org/10.3389/fpubh.2016.00159>
- Bhattacharjee, A. (2012). *Social science research: Principles, methods, and practices*. Open University Press.
- Birken, S. A., Powell, B. J., Shea, C. M., Haines, E. R., Alexis Kirk, M., Leeman, J., Rohweder, C., Damschroder, L., & Presseau, J. (2017). Criteria for selecting implementation science theories and frameworks: Results from an international survey. *Implementation Science : IS*, 12(1), 124. <https://doi.org/10.1186/s13012-017-0656-y>
- Birrell, F., Brady, L., & Jones, T. (2018). Group consultations: Benefits and implementation strategies. *Practice Nursing*, 29(10), 484-488.



Birrell, F., Collen, D., & Gray, M. (2023). Scaling group consultations—the fourth healthcare revolution: A call to action to save primary care. *Lifestyle Medicine*, e80.

Birrell, F., Lawson, R., Sumego, M., Lewis, J., Harden, A., Taveira, T., Stevens, J., Manson, A., Pepper, L., & Ickovics, J. (2020). Virtual group consultations offer continuity of care globally during Covid-19. *Lifestyle Medicine*, 1, 17.

Bisno, D. I., Reid, M. W., Fogel, J. L., Pyatak, E. A., Majidi, S., & Raymond, J. K. (2022). Virtual group appointments reduce distress and improve care management in young adults with type 1 diabetes. *Journal of Diabetes Science and Technology*, 16(6), 1419–1427. <https://doi.org/10.1177/19322968211035768>

Bisno, D. I., Reid, M. W., Pyatak, E. A., Flores Garcia, J., Salcedo-Rodriguez, E., Torres Sanchez, A., Fox, D. S., Hiyari, S., Fogel, J. L., Marshall, I., Bachmann, G., & Raymond, J. K. (2023). Virtual peer groups reduce hba1c and increase continuous glucose monitor use in adolescents and young adults with type 1 diabetes. *Diabetes Technology & Therapeutics*, 25(9), 589–601. <https://doi.org/10.1089/dia.2023.0199>

Blackburn, S., McLachlan, S., Jowett, S., Kinghorn, P., Gill, P., Higginbottom, A., Rhodes, C., Stevenson, F., & Jinks, C. (2018). The extent, quality and impact of patient and public involvement in primary care research: A mixed methods study. *Research Involvement and Engagement*, 4, 16. <https://doi.org/10.1186/s40900-018-0100-8>

- Blatgé, H., Shanmugam, S., Slattery, B., Lewis, O., & Nicol, Z. (2024). Patient perception of group consultations for knee osteoarthritis and influence of area-level deprivation: A service evaluation in a physiotherapy musculoskeletal setting. *Musculoskeletal Care*, 22(1), e1870.
- Blickem, C., Kennedy, A., Jariwala, P., Morris, R., Bowen, R., Vassilev, I., Brooks, H., Blakeman, T., & Rogers, A. (2014). Aligning everyday life priorities with people's self-management support networks: An exploration of the work and implementation of a needs-led telephone support system. *BMC Health Services Research*, 14, 262.
- Bloor, M., Frankland, J., Thomas, M., & Robson, K. (2001). *Focus groups in social research*. SAGE.
- Blumberg, B., Cooper, D. R., & Schindler, P. S. (2005). *Business research methods*. McGraw Hill.
- Boaz, A., Hanney, S., Borst, R., O'Shea, A., & Kok, M. (2018). How to engage stakeholders in research: Design principles to support improvement. *Health Research Policy and Systems*, 16(60), 1-9.
- Boote, J., Baird, W., & Sutton, A. (2011). Public involvement in the systematic review process in health and social care: A narrative review of case examples. *Health Policy*, 102, 105-116.
- Booth, A., Cantrell, A., Preston, L., Chambers, D., & Goyder, E. (2015). What is the evidence for the effectiveness, appropriateness and feasibility of group clinics for patients with chronic conditions? A

systematic review. *Health Services and Delivery Research*, 3(46), 1-94.

Booth, A., Sutton, A., & Papaioannou, D. (2016). *Systematic approaches to a successful literature review*. SAGE.

Bourke, B. (2014). Positionality: Reflecting on the research process. *The Qualitative Report*, 19(18), 1-9.

Bowling, A. (2005). Mode of questionnaire administration can have serious effects on data quality. *Journal of Public Health*, 27(3), 281-291.

Bowling, A. (2009). *Research methods in health: Investigating health and health services*. Open University Press.

Bradley, M., Craig, G., & Redmoor Health ELC Partnership (2021a). *Video group clinic case study - general practice: Adults living with asthma*. <file:///C:/Users/ellee/Downloads/VGC-case-study-asthma-Aughton-.pdf>

Bradley, M., Craig, G., & Redmoor Health ELC Partnership (2021b). *Video group clinic case study - general practice: Adults living with cancer*. [file:///C:/Users/ellee/Downloads/VGC-case-study-Aughton-surgery-cancer%20\(1\).pdf](file:///C:/Users/ellee/Downloads/VGC-case-study-Aughton-surgery-cancer%20(1).pdf)

Bradshaw, C., Atkinson, S., & Doody, O. (2017). Employing a qualitative description approach in health care research. *Global Qualitative Nursing Research*, 4.

Braithwaite, J., Churrua, K., Long, J. C., Ellis, L. A., & Herkes, J. (2018). When complexity science meets implementation science: A

theoretical and empirical analysis of systems change. *BMC Medicine*, 16, 63.

Bramer, W. M., de Jonge, G. B., Rethlefsen, M. L., Mast, F., & Kleijnen, J. (2018). A systematic approach to searching: An efficient and complete method to develop literature searches. *Journal of the Medical Library Association : JMLA*, 106(4), 531–541. <https://doi.org/10.5195/jmla.2018.283>

Bramer, W. M., Rethlefsen, M. L., Kleijnen, J., & Franco, O. H. (2017). Optimal database combinations for literature searches in systematic reviews: A prospective exploratory study. *Systematic Reviews*, 6(1), 245. <https://doi.org/10.1186/s13643-017-0644-y>

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101.

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589-597.

Braun, V., & Clarke, V. (2021a). One size fits all? What counts as quality practice in (reflexive) thematic analysis?. *Qualitative Research in Psychology*, 18(3), 328-352.

Braun, V., & Clarke, V. (2021b). To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative Research in Sport, Exercise and Health*, 13(2), 201-216.

Braun, V., & Clarke, V. (2022a). *Doing reflexive TA*. Retrieved February 10, 2024, from [doing-reflexive-ta/](#).

Braun, V., & Clarke, V. (2022b). *Thematic analysis – A practical guide*. SAGE.

Braun, V., & Clarke, V. (2023). Toward good practice in thematic analysis: Avoiding common problems and be(com)ing a *knowing* researcher. *International Journal of Transgender Health*, 24(1), 1-6.

Briscoe, S., & Cooper, C. (2014). The British nursing index and CINAHL: A comparison of journal title coverage and the implications for information professionals. *Health Information and Libraries Journal*, 31(3), 195-203.

British Computer Society. (2014). *Digital skills from the employers' perspective*. <https://www.bcs.org/content-hub/digital-skills-from-the-employers-perspective/>.

British Medical Association. (2023). *Pressures in general practice data analysis*. Retrieved November 27, 2023, from <https://www.bma.org.uk/advice-and-support/nhs-delivery-and-workforce/pressures/pressures-in-general-practice-data-analysis>.

British Society of Lifestyle Medicine. (2024). *Virtual group consultations*. Retrieved June 25, 2024, from <https://bslm.org.uk/vgc>

Bronson, D. L., & Maxwell, R. A. (2004). Shared medical appointments: Increasing patient access without increasing physician hours. *Cleveland Clinic Journal of Medicine*, 71(5), 369-377).

Brown, J. D., Hales, S., Evans, T. E., Turner, T., Sword, D. O., O'Neil, P. M., Ballentine, S., Lovelace, O., & DuBose-Morris, R. A. (2020). Description, utilisation and results from a telehealth primary care weight management intervention for adults with obesity in South Carolina. *Journal of Telemedicine and Telecare*, 26(1-2), 28–35.  
<https://doi.org/10.1177/1357633X18789562>

Bryman, A. (2004). *Social research methods* (2<sup>nd</sup> ed.). Oxford University Press.

Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, 6(1), 97-113.

Bryman, A. (2008). *Social research methods* (3<sup>rd</sup> ed.). Oxford University Press.

Burke, R. E., Ferrara, S. A., Fuller, A. M., Kelderhouse, J. M., & Ferrara, L. R. (2011). The effectiveness of group medical visits on diabetes mellitus type 2 (dm2) specific outcomes in adults: A systematic review. *JBIM Library of Systematic Reviews*, 9(23), 833–885. <https://doi.org/10.11124/01938924-201109230-00001>

Busetto, L., Luijkx, K., Calciolari, S., González-Ortiz, L. G., & Vrijhoef, H. J. M. (2017). The development, description and appraisal of an emergent multimethod research design to study workforce

changes in integrated care interventions. *International Journal of Integrated Care*, 17(1), 1–11.

Busetto, L., Wick, W., & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and Practice*, 2(14). <https://doi.org/10.1186/s42466-020-00059-z>.

Butler, R., Griffey, J., Mayles, C., Parbery-Gray, L., & Rockett, L. (2022). Adapting provision of structured diabetes education from face-to-face to virtual during the COVID-19 pandemic. *Journal of Diabetes Nursing*, 26(10), 227.

Byrne, D. (2021). A worked example of Braun and Clarke's approach to reflexive thematic analysis. *Quality and Quantity*, 56, 1391–1412.

Cahan, E. M., Hernandez-Boussard, T., Thadaney-Israni, S., & Rubin, D. L. (2019). Putting the data before the algorithm in big data addressing personalised healthcare. *NPJ Digital Medicine*, 2(78), 1–6.

Calvo-Paniagua, J., Díaz-Arribas, M. J., Valera-Calero, J. A., Gallardo-Vidal, M. I., Fernández-de-Las-Peñas, C., López-de-Uralde-Villanueva, I., Del Corral, T., & Plaza-Manzano, G. (2022). A tele-health primary care rehabilitation program improves self-perceived exertion in COVID-19 survivors experiencing post-COVID fatigue and dyspnea: A quasi-experimental study. *PloS One*, 17(8), e0271802. <https://doi.org/10.1371/journal.pone.0271802>

- Campbell, K. A., Orr, E., Durepos, P., Nguyen, L., Li, L., Whitmore, C., Gehrke, P., Graham, L., & Jack, S. (2021). Reflexive thematic analysis for applied qualitative health research. *Qualitative Report*, 26(6), 2011-2028. <https://doi.org/10.46743/2160-3715/2021.5010>
- Campbell, M., Thomson, H., Katikireddi, S. V., & Sowden, A. (2016). Reporting of narrative synthesis in systematic reviews of public health interventions: A methodological assessment. *The Lancet*, 388(2), 34.
- Campo, R. A., Bluth, K., Santacroce, S. J., Knapik, S., Tan, J., Gold, S., Philips, K., Gaylord, S., & Asher, G. N. (2017). A mindful self-compassion videoconference intervention for nationally recruited posttreatment young adult cancer survivors: Feasibility, acceptability, and psychosocial outcomes. *Supportive Care in Cancer : Official Journal of the Multinational Association of Supportive Care in Cancer*, 25(6), 1759–1768. <https://doi.org/10.1007/s00520-017-3586-y>
- Car, J., Koh, G. C. H., Foong, P. S., & Wang, J. (2020). Video consultations in primary and specialist care during the covid-19 pandemic and beyond. *British Medical Journal*, 371, 1-6.
- Care Quality Commission. (2023). *The health and care workforce*. Retrieved November 27, 2023, from <https://www.cqc.org.uk/publications/major-report/state-care/2022-2023/workforce>
- Carr, D. (2000). *Professionalism and ethics in teaching*. Routledge.



Centre for Evidenced-Based Medicine. (2021). *Oxford centre for evidence-based medicine: Levels of evidence* (March 2009). Retrieved February 4, 2021, from <https://www.cebm.ox.ac.uk/resources/levels-of-evidence/oxford-centre-for-evidence-based-medicine-levels-of-evidence-march-2009>

Centre for Reviews and Dissemination. (2009). *Systematic reviews: CRD's guidance for undertaking reviews in healthcare*. Retrieved January 11, 2022, from, [https://www.york.ac.uk/media/crd/Systematic\\_Reviews.pdf](https://www.york.ac.uk/media/crd/Systematic_Reviews.pdf).

Chambers, R., Hughes, A., Beaney, P., & Schmid, M. (2018). *You too can be a digital practice nurse champion*. <http://www.clinitecs.uk/wp-content/uploads/PN-june-2018essentialsv3.pdf>

Chambers, R., & Schmid, M. (2018). Making technology-enabled health care work in general practice. *British Journal of General Practice*, 68(668), 108-109.

Charles, A., & Ewbank, L. (2020). *The road to renewal: Five priorities for health and care*. The Kings Fund. <https://www.kingsfund.org.uk/publications/covid-19-road-renewal-health-and-care>.

Charmaz. K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. SAGE.

Charmaz, K., & Thornberg, R. (2020). The pursuit of quality in grounded theory. *Qualitative Research in Psychology*, 18(3), 305-327.

Check, J., & Schutt, R. K. (2012). *Research methods in education*. SAGE.

Checkland, K., Harrison, S., & Marshall, M. (2007). Is the metaphor of 'barriers to change' useful in understanding implementation? Evidence from general medical practice. *Journal of Health Services Research & Policy*, 12(2), 95–100.  
<https://doi.org/10.1258/135581907780279657>

Checkland, K., McDermott, I., Coleman, A., Warwick-Giles, L., Bramwell, D., Allen, P., & Peckham, S. (2018). Planning and managing primary care services: Lessons from the NHS in England. *Public Money & Management*, 38(4), 261-270.

Clay, H., & Stern, R. (2015). *Making time in general practice*. Primary Care Foundation & NHS Alliance.  
<https://thehealthcreationalliance.org/wp-content/uploads/2018/11/Making-Time-in-General-Practice-FULL-REPORT-06-10-15.pdf>

Cleveland Clinic. (2021). *Endocrinologists convert to telemedicine virtually overnight during COVID-19 pandemic*.  
<https://consultqd.clevelandclinic.org/endocrinologists-convert-to-telemedicine-virtually-overnight-during-covid-19-pandemic/>

Coates, J., Gething, F., & Johnson, M. I. (2017). Shared medical appointments for managing pain in primary care settings?. *Pain Management*, 7(4), 223-227.

Cochrane Consumer Network. (2021). *Cochrane and systematic reviews*. Retrieved on January 15, 2021, from

<https://consumers.cochrane.org/cochrane-and-systematic-reviews>.

Cohen, L. B., Taveira, T. H., Khatana, S. A., Dooley, A. G., Pirraglia, P. A., & Wu, W. C. (2011). Pharmacist-led shared medical appointments for multiple cardiovascular risk reduction in patients with type 2 diabetes. *The Diabetes Educator*, 37, 801–12.

Cohen, W. M., & Levinthal, D. A. (1989). Innovation and learning: The two faces of R & D. *The Economic Journal*, 99(397), 569-596.  
<https://doi.org/10.2307/2233763>

Cole, R. E., Boyer, K. M., Spanbauer, S. M., Sprague, D., & Bingham, M. (2013). Effectiveness of prediabetes nutrition shared medical appointments: Prevention of diabetes. *The Diabetes Educator*, 39(3), 344-353.

Coleman, E. A., Grothaus, L. C., Sandhu, N., & Wagner, E. H. (2015). Chronic care clinics: A randomised controlled trial of a new model of primary care for frail older adults. *Journal of the American Geriatrics Society*, 47(7), 775-783.

Collins, B. (2016). *New care models: Emerging innovations in governance and organisational form*.  
[https://www.kingsfund.org.uk/sites/default/files/field/field\\_publication\\_file/New\\_care\\_models\\_Kings\\_Fund\\_Oct\\_2016.pdf](https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/New_care_models_Kings_Fund_Oct_2016.pdf).

Collins Dictionary. (2024). *Definition of 'tip'*. Retrieved on September, 25, 2024, from  
<https://www.collinsdictionary.com/dictionary/english/tip>

Concannon, T. W., Grant, S., Welch, V., Petkovic, J., Selby, J., Crowe, S., Synnot, A., Greer-Smith, R., Mayo-Wilson, E., Tambor, E., Tugwell, P., & Multi Stakeholder Engagement (MuSE) Consortium (2019). Practical guidance for involving stakeholders in health research. *Journal of General Internal Medicine*, 34(3), 458–463. <https://doi.org/10.1007/s11606-018-4738-6>

Concannon, T. W., Meissner, P., Grunbaum, J. A., McElwee, N., Guise, J. M., Santa, J., Conway, P. H., Daudelin, D., Morrato, E. H., & Leslie, L. K. (2012). A new taxonomy for stakeholder engagement in patient-centered outcomes research. *Journal of General Internal Medicine*, 27(8), 985–991. <https://doi.org/10.1007/s11606-012-2037-1>

Craig, G. (2017). Group consultations: Better for patients, better for nurses?. *Practice Nurse*, 47(4), 15-18.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). SAGE.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). SAGE.

Creswell, J. W. (2011). *Controversies in mixed methods research*. SAGE.

Creswell, J. W. (2015). *A concise introduction to mixed methods research*. SAGE.

- Creswell, J. W., & Plano Clark, V. L. (2007). *Choosing a mixed methods design*. SAGE.
- Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research*. SAGE.
- Critical Appraisal Skills Programme. (2024). *CASP checklists*. Retrieved April 25, from, <https://casp-uk.net/casp-tools-checklists/>
- Cummings, C. L. (2017). Cross-sectional design. In M. Allen (Ed.), *The SAGE Encyclopedia of Communication Research Methods*. SAGE Publications.
- Curtis, K., Fry, M., Shaban, R. Z., & Considine, J. (2016). Translating research findings to clinical nursing practice. *Journal of Clinical Nursing*, 26(5-6), 862-872. <https://doi.org/10.1111/jocn.13586>
- Dabalen, A., Etang, A., Hoogeveen, J., Mushi, E., Schipper, Y., & von Engelhardt, J. (2016). *Mobile phone panel surveys in developing countries: A practical guide for microdata collection*. <https://doi.org/10.1596/978-1-4648-0904-0>
- Darwin Holmes, A. G. (2020). Researcher positionality – A consideration of its influence and place in qualitative research – A new researchers guide. *Shanlax International Journal of Education*, 8(4).
- Davies, C. A. (1999). *Reflexive ethnography: A guide to researching selves and others*. Routledge.
- Davies, H. T., Powell, A. E., & Nutley, S. M. (2015). Mobilising knowledge to improve UK health care: Learning from other

countries and other sectors – a multimethod mapping study. *Health Services and Delivery Research*, 3(27), 1–190.

De Souza, D. E. (2022). A critical realist approach to systems thinking in evaluation. *Evaluation*, 28(1), 72-90.  
<https://doi.org/10.1177/13563890211064639>

Deakin, M. (2022). NHS workforce shortages and staff burnout are taking a toll. *British Medical Journal*, 377, doi: <https://doi.org/10.1136/bmj.o945>.

Defeyter, M. A., Russo, R., & McPartin, P. L. (2009). The picture superiority effect in recognition memory: A developmental study using the response signal procedure. *Cognitive Development*, 24(3), 265-273.

DeJonckheere, M., & Vaughn, L. M. (2019). Semistructured interviewing in primary care research: A balance of relationship and rigour. *Family Medicine and Community Health*, 7(2), e000057.  
<https://doi.org/10.1136/fmch-2018-000057>

Delichatsios, H. K., Hauser, M. E., Burgess, J. D., & Eisenberg, D. M. (2015). Shared medical appointments: A portal for nutrition and culinary education in primary care-a pilot feasibility project. *Global Advances in Health and Medicine*, 4(6), 22–26.  
<https://doi.org/10.7453/gahmj.2015.060>

Denzin, N. K. (2017). *The research act: A theoretical introduction to sociological methods*. Routledge.  
<https://doi.org/10.4324/9781315134543>

Denzin, N. K., & Lincoln, Y. S. (2005). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp.1-32) (3rd ed). SAGE.

Department of Health. (2011). *Dismantling the NHS national programme for IT*. <https://www.gov.uk/government/news/dismantling-the-nhs-national-programme-for-it>

Department of Health and Office for Health Improvement and Disparities. (2021). *New era of public health to tackle inequalities and level up the UK*. <https://www.gov.uk/government/news/new-era-of-public-health-to-tackle-inequalities-and-level-up-the-uk>

Department of Health and Social Care. (2021). *Integration and innovation: Working together to improve health and social care for all*. <https://www.gov.uk/government/publications/working-together-to-improve-health-and-social-care-for-all/integration-and-innovation-working-together-to-improve-health-and-social-care-for-all-html-version>

Department of Health and Social Care. (2022a). *Integrated care partnership (ICP): Engagement summary*. <https://www.gov.uk/government/publications/integrated-care-partnerships-engagement-findings/integrated-care-partnership-icp-engagement-summary>

Department of Health and Social Care and NHS England. (2022a). *A plan for digital health and social care*.

<https://www.gov.uk/government/publications/a-plan-for-digital-health-and-social-care/a-plan-for-digital-health-and-social-care>

Department of Health and Social Care and NHS England. (2022b). *Data saves lives: Reshaping health and social care with data*.  
<https://www.gov.uk/government/publications/data-saves-lives-reshaping-health-and-social-care-with-data/data-saves-lives-reshaping-health-and-social-care-with-data>

Dey, I. (1993). *Qualitative data analysis: A user friendly guide for social sciences*. Routledge.

Dhaver, S., Al-Badri, M., Salah, T., Kilroy, C., Shahar, J., Johnson, C., Votta, J., Mitchell, C., Beaton, J., Khater, A., Kibaa, K., McCarragher, R., Davis, C., & Hamdy, O. (2023). Hybrid model of intensive lifestyle intervention is potentially effective in patients with diabetes & obesity for post-COVID era. *Frontiers in Endocrinology*, 13, 1050527.  
<https://doi.org/10.3389/fendo.2022.1050527>

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method*. John Wiley & Sons.

Dinh, T., Staab, E. M., Nuñez, D., Zhu, M., Wan, W., Schaefer, C. T., Campbell, A., Quinn, M., & Baig, A. A. (2023). Evaluating effects of virtual diabetes group visits in community health centers during the covid-19 pandemic. *Journal of Patient Experience*, 10, 23743735231199822.  
<https://doi.org/10.1177/23743735231199822>



Dodds, S., & Hess, A. C. (2021). Adapting research methodology during COVID-19: Lessons for transformative service research. *Journal of Service Management*, 32(2), 203-217.

Domecq, J. P., Prutsky, G., Elraiyah, T., Wang, Z., Nabhan, M., Shippee, N., Brito, J. P., Boehmer, K., Hasan, R., Firwana, B., Erwin, P., Eton, D., Sloan, J., Montori, V., Asi, N., Dabrh, A. M., & Murad, M. H. (2014). Patient engagement in research: A systematic review. *BMC Health Services Research*, 14, 89. <https://doi.org/10.1186/1472-6963-14-89>

Doorley, S. L., Ho, C. J., Echeverria, E., Preston, C., Ngo, H., Kamal, A., & Cunningham, C. O. (2017). Buprenorphine shared medical appointments for the treatment of opioid dependence in a homeless clinic. *Substance Abuse*, 38(1), 26-30.

Drabble, L., Trocki, K. F., Salcedo, B., Walker, P. C., & Korcha, R. A. (2016). Conducting qualitative interviews by telephone: Lessons learned from a study of alcohol use among sexual minority and heterosexual women. *Qualitative Social Work : QSW- Research and Practice*, 15(1), 118–133.

Drake, C., Rader, A., Clipper, C., Haney, M., Bulgin, D., Cameron, B., Kinard, T., Sangvai, D., Tomso, S., & Snyderman, R. (2023). Adaptation to telehealth of personalised group visits for late stage diabetic kidney disease. *Kidney* 360, 4(12), 1708-1716. doi: 10.34067/kid.0000000000000301.

Duan, Y., Iaconi, A., Wang, J., Perez, J. S., Song, Y., Chamberlain, S. A., Shrestha, S., Choroschun, K., Hoben, M., Beeber, A.,

Anderson, R. A., Cummings, G. G., Lanham, H. J., Norton, P. G., Estabrooks, C. A., & Berta, W. (2022). Conceptual and relational advances of the PARIHS and i-PARIHS frameworks over the last decade: A critical interpretive synthesis. *Implementation Science : IS*, 17(1), 78. <https://doi.org/10.1186/s13012-022-01254-z>

Dunn, P., Fraser, C., Williamson, S., & Alderwick, H. (2022). *Integrated care systems: What do they look like*. The Health Foundation. <https://www.health.org.uk/publications/long-reads/integrated-care-systems-what-do-they-look-like>

Durlak, J. A., & DuPre, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology*, 41, 327-350.

Eccles, M., Grimshaw, J., Walker, A., Johnston, M., & Pitts, N. (2005). Changing the behaviour of healthcare professionals: The use of theory in promoting the uptake of research findings. *Journal of Clinical Epidemiology*, 58(2), 107-112.

Edelman, D., Fredrickson, S. K., Melnyk, S. D., Coffman, C. J., Jeffreys, A. S., Datta, S., Jackson, G. L., Harris, A. C., Hamilton, N. S., Stewart, H., Stein, J., & Weinberger, M. (2010). Medical clinics versus usual care for patients with both diabetes and hypertension: A randomized trial. *Annals of Internal Medicine*, 152(11), 689–696. <https://doi.org/10.7326/0003-4819-152-11-201006010-00001>

Edelman, D., Gierisch, J. M., McDuffie, J. R., Oddone, E., & Williams, J.

W., Jr. (2015). Shared medical appointments for patients with diabetes mellitus: A systematic review. *Journal of General Internal Medicine*, 30(1), 99–106.

Egger, G., Dixon, J., Meldrum, H., Binns, A., Cole, M. A., Ewald, D., &

Stevens, J. (2015). Patients' and providers' satisfaction with shared medical appointments. *Australian Family Physician*, 44(9), 674–679.

Egger, G., Stevens, J., Ganora, C., & Morgan, B. (2018). Programmed

shared medical appointments: A novel procedure for chronic disease management. *Australian Journal of General Practice*, 47(1/2), 71-75.

Egger, G., Stevens, J., Volker, N., & Egger, S. (2019). Programmed

shared medical appointments for weight management in primary care: 'An exploratory study in translational research'. *Australian Journal of General Practice*, 48(10), 681-688.

ELC Works. (2024a). *The ELC programme*. Retrieved January 21, 2022, from <https://elcworks.co.uk/>.

ELC Works. (2024b). *Supporting people with type 2 diabetes in primary care – Corwen Practice*. Retrieved April 17, 2024, from <https://www.elcworks.co.uk/wp-content/uploads/2022/12/Corwen-Practice-BCUHB-diabetes-video-group-clinics.pdf>

ELC Works. (2024c). *General Practice: Young people living with asthma*. Retrieved April 17, 2024, from

<https://www.elcworks.co.uk/wp-content/uploads/2022/12/young-people-asthma-West-London-.pdf>

ELC Works. (2024d). *General Practice: Supporting adults living with pain at Richford Gate Practice*. Retrieved April 17, 2024, from [https://www.elcworks.co.uk/wp-content/uploads/2022/12/chronic-pain-vg\\_57357707.pdf](https://www.elcworks.co.uk/wp-content/uploads/2022/12/chronic-pain-vg_57357707.pdf)

ELC Works. (2024e). *General Practice: Supporting adults who are shielding to improve wellbeing*. Retrieved April 18, 2024, from [https://www.elcworks.co.uk/wp-content/uploads/2022/12/VGC-case-study\\_Richford-Gate-wellbeing-reviews-shielding-people-.pdf](https://www.elcworks.co.uk/wp-content/uploads/2022/12/VGC-case-study_Richford-Gate-wellbeing-reviews-shielding-people-.pdf)

ELC Works. (2024f). *General Practice: Maintaining services and responding to COVID*. Retrieved April 18, 2024, from <https://www.elcworks.co.uk/wp-content/uploads/2022/12/Woodley-Surgery-children-with-anxiety.pdf>

E-Learning for Healthcare. (2021). *Video group clinics*. Retrieved March 12, 2021, from <https://www.e-lfh.org.uk/programmes/video-group-clinics/>

Elmore, N., Burt, J., Abel, G., Maratos, F. A., Montague, J., Campbell, J., & Roland, M. (2016). Investigating the relationship between consultation length and patient experience: A cross-sectional study in primary care. *British Journal of General Practice*, 66(653), e896-e903.

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE Open*, 4(1), 1-10.  
<https://doi.org/10.1177/2158244014522633>

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62, 107-115.

Elsevier. (2016). *EMBASE*. Retrieved February 4, 2021, from <https://www.elsevier.com/en-gb/solutions/embase-biomedical-research>.

Eriksen, M. B., & Frandsen, T. F. (2018). The impact of patient, intervention, comparison, outcome (PICO) as a search strategy tool on literature search quality: A systematic review. *Journal of the Medical Library Association: JMLA*, 106(4), 420–431.

Esmail, L., Moore, E., & Rein, A. (2015). Evaluating patient and stakeholder engagement in research: Moving from theory to practice. *Journal of Comparative Effectiveness Research*, 4(2), 133-45.

Fife, S. T., & Gossner, J. D. (2024). Deductive qualitative analysis: Evaluating, expanding, and refining theory. *International Journal of Qualitative Methods*, 23.  
<https://doi.org/10.1177/16094069241244856>

Finch, T. (2008). Teledermatology for chronic disease management: coherence and normalization. *Chronic Illness*, 4(2), 127-134.

- Finch, T. L., Mair, F. S., O'Donnell, C., Murray, E., & May, C. R. (2012). From theory to 'measurement' in complex interventions: methodological lessons from the development of an e-health normalisation instrument. *BMC Medical Research Methodology*, 12, 69.
- Fink, A. (2005). *Conducting research literature reviews: From the Internet to paper* (2nd ed.). SAGE.
- Fischer, C. T. (2009). Bracketing in qualitative research: Conceptual and practical matters. *Psychotherapy Research: Journal of the Society for Psychotherapy Research*, 19(4-5).
- Fisher, M. J., & Marshall, A. P. (2008). Understanding descriptive statistics. *Australian Critical Care*, 22, 93-97.
- Fossey, E., Harvey, C., Mcdermott, F., & Davidson, L. (2002). Understanding and evaluating qualitative research. *Australian and New Zealand Journal of Psychiatry*, 36(6), 717-732.
- Fraser, C., & Fisher, R. (2021). *How has the COVID-19 pandemic impacted primary care?*. The Health Foundation. <https://www.health.org.uk/news-and-comment/charts-and-infographics/how-has-the-covid-19-pandemic-impacted-primary-care>.
- Fujimori, M., Shirai, Y., Asai, M., Kubota, K., Katsumata, N., & Uchitomi, Y. (2014). Effect of communication skills training program for oncologists based on patient preferences for communication when receiving bad news: A randomized controlled trial. *Journal of Clinical Oncology*, 32(20), 2166-72.

FutureNHS. (n.d). *Home*. Retrieved September, 24, 2024, from [https://future.nhs.uk/connect.ti/home/grouphome?done=OBJChangesSaved&sm\\_newemail=](https://future.nhs.uk/connect.ti/home/grouphome?done=OBJChangesSaved&sm_newemail=)

FutureNHS. (2021a). *VGC implementation toolkit*. Retrieved March, 15, 2021, from <https://future.nhs.uk/DigitalPC/view?objectId=21327632>

FutureNHS. (2021b). *Video group clinics: Template session planner*. Retrieved March 15, 2021, from <https://future.nhs.uk/DigitalPC/view?objectId=75971013>

Gabbay, J., & le May, A. (2010). *Practice-based evidence for healthcare: Clinical mindlines* (1st ed.). Routledge.

Gagliardi, A. R., Berta, W., Kothari, A., Boyko, J., & Urquhart, R. (2016). Integrated knowledge translation (IKT) in health care: A scoping review. *Implementation Science*, 11, 38.

Gale, N. K., Health, G., Cameron. E., Rashid, S., & Redwood, S. (2013). Using the framework method for analysis of qualitative data in multi-disciplinary health research. *BMC Medical Research Methodology*, 13, 117.

Gandhi, D., & Craig, G. (2019). An evaluation of the suitability, feasibility, and acceptability of group consultations in Brigstock Medical Practice. *Journal of Medicines Optimisation*, 5, 39-44.

Ganetsky, V. S., Long, J. A., Mitra, N., Chaiyachati, K. H., & Kaufman, S. T. (2020). Impact of a multidisciplinary, endocrinologist-led shared medical appointment model on diabetes-related

outcomes in an underserved population. *Diabetes Spectrum: A Publication of the American Diabetes Association*, 33(1), 74–81.  
<https://doi.org/10.2337/ds19-0026>

Gbrich, C. (2007). *Qualitative data analysis: An introduction*. SAGE.

Geertz, C. (1973). *The interpretation of cultures*. Basic Books.

Gentry, M. T., Lapid, M. I., Clark, M. M., & Rummans, T. A. (2019). Evidence for telehealth group-based treatment: A systematic review. *Journal of Telemedicine and Telecare*, 25(6), 327–342.  
<https://doi.org/10.1177/1357633X18775855>

Gibson, H., Huang, D., Hayhoe, B. W. J., & El-Osta, A. (2022). A virtual group consultation model of care for menopause treatment. *NEJM Catalyst*, 3(6). doi: 10.1056/CAT.22.0041

Gilburt, H. (2016). *Supporting integration through new roles and working across boundaries*. The Kings Fund.  
[https://assets.kingsfund.org.uk/f/256914/x/02eb7413e1/supporting\\_integration\\_through\\_new\\_roles\\_2016.pdf](https://assets.kingsfund.org.uk/f/256914/x/02eb7413e1/supporting_integration_through_new_roles_2016.pdf).

Gill, J., Johnson, P., & Clark, M. (2010). *Research methods for managers*. SAGE.

Gill, P. J., Roberts, N. W., Wang, K. Y., & Heneghan, C. (2014). Development of a search filter for identifying studies completed in primary care. *Family Practice*, 28, 1-7.

Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: Interviews and focus groups. *British Dental Journal*, 204, 291–295.



- Gillam, S. (2017). Sustainability or transformation? Without additional funding, STPs are unlikely to deliver both. *British Journal of General Practice*, 67(664), 496-497.
- Gillespie, A., Glăveanu, V., & de Saint Laurent, C. (2024). *Pragmatism and methodology: Doing research that matters with mixed methods*. Cambridge University Press.
- Gillman, M. (2018). *Digital Marginalisation*. British Computer Society.  
<https://www.bcs.org/content-hub/digital-marginalisation/>.
- Given, L. M. (2008). *The SAGE encyclopaedia of qualitative research methods*. SAGE.
- Glaser, B. G., & Strauss A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Aldine de Gruyter.
- Glaser, B., & Strauss, A. (1999). *Discovery of grounded theory: Strategies for qualitative research* (1<sup>st</sup> ed). Routledge.  
<https://doi.org/10.4324/9780203793206>
- Glasgow, R. E., & Riley, W. T. (2013). Pragmatic measures: What they are and why we need them. *American Journal of Preventive Medicine*, 45(2), 237–243.  
<https://doi.org/10.1016/j.amepre.2013.03.010>
- Gorski, P. S. (2013). What is critical realism? And why should you care?. *Contemporary Sociology*, 42(5), 658–670.
- Gough, D., Thomas, J., & Oliver, S. (2012). Clarifying differences between review designs and methods. *Systematic reviews*, 1, 28. <https://doi.org/10.1186/2046-4053-1-28>

Graham, F., Martin, H., Lecouturier, J., O'Donnell, A., Tang, M. Y., Jackson, K., Sniehotta, F. F., & Kaner, E. (2022). Shared medical appointments in English primary care for long-term conditions: A qualitative study of the views and experiences of patients, primary care staff and other stakeholders. *BMC Primary Care*, 23(180), 1-13.

Graham, F., Tang, M. Y., Jackson, K., Martin, H., O'Donnell, A., Ogunbayo, O., Sniehotta, F. F., & Kaner, E. (2021). Barriers and facilitators to implementation of shared medical appointments in primary care for the management of long-term conditions: A systematic review and synthesis of qualitative studies. *BMJ Open*, 11(8), e046842.

Graneheim, U. H., Lindgrem, B., & Lundman, B. (2017). Methodological challenges in qualitative content analysis: A discussion paper. *Nurse Education Today*, 56, 29-34.

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures, and measures to achieve trustworthiness. *Nurse Education Today*, 24(2), 105-112.

Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal*, 26, 91-108.

Gray, D. P., Freeman, G., Johns, C., & Roland, M. (2020). Covid-19: A fork in the road for general practice. *British Medical Journal*, 370.

Greco, C. M., Gaylord, S. A., Faurot, K., Weinberg, J. M., Gardiner, P., Roth, I., Barnhill, J. L., Thomas, H. N., Dhamne, S. C., Lathren, C., Baez, J. E., Lawrence, S., Neogi, T., Lasser, K. E., Castro, M. G., White, A. M., Simmons, S. J., Ferrao, C., Binda, D. D., Elhadidy, N., Eason, K. M., McTigue, K. M., & Morone, N. E. (2021). The design and methods of the OPTIMUM study: A multisite pragmatic randomized clinical trial of a telehealth group mindfulness program for persons with chronic low back pain. *Contemporary Clinical Trials*, 109, 106545. <https://doi.org/10.1016/j.cct.2021.106545>

Green, J., & Thorogood, N. (2018). *Qualitative methods for health research* (4<sup>th</sup> ed.). SAGE.

Greene, J. C. (2015). Preserving distinctions within the multimethod and mixed methods research merger. In S.N Hesse-Biber & R. B. Johnson (Ed.), *The Oxford Handbook of Multimethod and Mixed Methods Research Inquiry* (pp. 606–615). Oxford University Press.

Greenhalgh, T., Koh, G. C. H., & Car, J. (2020). Covid-19: A remote assessment in primary care. *British Medical Journal*, 368.

Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: Systematic review and recommendations. *The Milbank Quarterly*, 82(4), 581-629.

Greenhalgh, T., & Rosen, R. (2021). Remote by default general practice: Must we, should we, dare we?. *British Journal of General Practice*, 71(705), 149-150.

Greenhalgh, T., Rosen, R., Shaw, S. E., Byng, R., Faulkner, S., Finlay, T., Grundy, E., Husain, L., Hughes, G., Leone, C., Moore, L., Papoutsis, C., Pope, C., Rybczynska-Bunt, S., Rushforth, A., Wherton, J., Wieringa, S., & Wood, G. W. (2021). Planning and evaluating remote consultation services: A new conceptual framework incorporating complexity and practical ethics. *Frontiers in Digital Health*, 3, 726095.

Greenhalgh, T., Shaw, S., Wherton, J., Vijayaraghavan, S., Morris, J., Bhattacharya, S., Hanson, P., Campbell-Richards, D., Ramoutar, S., Collard, A., & Hodgkinson, I. (2018). Real-world implementation of video outpatient consultations at macro, meso, and micro levels: Mixed-method study. *Journal of Medical Internet Research*, 20(4), e150. <https://doi.org/10.2196/jmir.9897>

Greenhalgh, T., Wherton, J., Papoutsis, C., Lynch, J., Hughes, G., A'Court, C., Hinder, S., Fahy, N., Procter, R., & Shaw, S. (2017). Beyond adoption: A new framework for theorizing and evaluating nonadoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies. *Journal of Medical Internet Research*, 19(11), e367. <https://doi.org/10.2196/jmir.8775>

Grey, D. E. (2014). *Doing research in the real world*. SAGE.

Group Consultations Ltd. (n.d). *Group consultations – Frequently asked questions*. Retrieved May 20, 2022, from <https://www.groupconsultations.com/wp-content/uploads/2018/10/primary-care-group-consultations-faq-1018.pdf>

Group Consultations Ltd. (2016). *Final evaluation of Croydon group consultations report*. <https://www.groupconsultations.com/wp-content/uploads/2020/08/final-evaluation-of-croydon-group-consultations-report-020317.pdf>

Grut, M., de Wildt, G., Clarke, J., Greenfield, S., & Russell, A. (2023). Primary health care during the COVID-19 pandemic: A qualitative exploration of the challenges and changes in practice experienced by GPs and GP trainees. *PloS One*, 18(2), e0280733. <https://doi.org/10.1371/journal.pone.0280733>

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Ed.), *Handbook of qualitative research* (pp. 105–117). SAGE.

Guterman, T. C. (2019). Basics of statistics for primary care research. *Family Medicine and Community Health*, 7(2), e000067.

Hall, L. H., Johnson, J., Watt, I., & O'Connor, D. B. (2019). Association of GP wellbeing and burnout with patient safety in UK primary care: A cross-sectional survey. *British Journal of General Practice*, 69(684), e507-e514.

Halliday, M., Mill, D., Johnson, J., & Lee, K. (2021). Let's talk virtual! Online focus group facilitation for the modern researcher.

*Research in Social and Administrative Pharmacy*, 57(4), 301–312.

Halloway, K., Labbato, C., Davis, M. H., & Yackzan, S. (2022). Virtual group therapy within a shared medical appointment: Innovative care delivery in behavioral oncology. *Clinical Journal of Oncology Nursing*, 26(5), 475–478.  
<https://doi.org/10.1188/22.CJON.475-478>

Hanks, R. G., Eloi, H., & Stafford, L. (2019). Understanding how advanced practice registered nurses function as patient advocates. *Nursing Forum*, 54(2), 213–219.

Hansen, M. P., Stewart, S. L., Ensign, C., Puckett, C. M., & Caviness, S. (2023). Virtual group appointments improve outcomes in veterans with heart failure during a global pandemic: A quality improvement project. *Creative Nursing*, 29(2), 223–228.  
<https://doi.org/10.1177/10784535231195490>

Harvey, G., & Kitson, A. (2015). *Implementing evidence-based practice in healthcare: A facilitation guide*. Taylor & Francis.

Harvey, G., & Kitson, A. (2016). PARIHS revisited: From heuristic to integrated framework for the successful implementation of knowledge into practice. *Implementation Science*, 11,1.

Hayhoe, B., Verma, A., & Kumar, S. (2017). Shared medical appointments - a promising response to escalating demand for healthcare. *British Medical Journal*, 358, 4034

Haynes, A., & Loblay, V. (2024). Rethinking barriers and enablers in qualitative health research: Limitations, alternatives, and enhancements. *Qualitative Health Research*, 0(0). doi:[10.1177/10497323241230890](https://doi.org/10.1177/10497323241230890)

Haynes, S. C., Rudov, L., Nauman, E., Hendryx, L., Angove, R.S.M., & Carton, T. (2018). Engaging stakeholders to develop a patient-centred research agenda. *Medical Care*, 56, 27-32.

Health Education England. (2018). *Improving digital literacy*. Royal College of Nursing.

Health Education England. (2019a). *The Topol review - preparing the healthcare workforce to deliver the digital future*. <https://topol.hee.nhs.uk/the-topol-review/>

Health Education England. (2019b). *The digital readiness programme*. <https://www.hee.nhs.uk/our-work/digital-readiness>

Health Education England. (2021a). *NHS Digital Academy*. <https://digital-transformation.hee.nhs.uk/digital-academy/>

Health Education England. (2021b). *Primary care and general practice nursing career and core capabilities framework*. <https://www.skillsforhealth.org.uk/wp-content/uploads/2022/05/Primary-Care-and-GPN-Framework-May22.pdf>

Hennink, M., & Kaiser, B. N. (2022). Sample sizes for saturation qualitative research: A systematic review of empirical tests. *Social Science & Medicine*, 292, 114523.

- Hensen, B., Mackworth-Young, C. R. S., Simwinga, M., Abdelmagid, N., Banda, J., Mavodzam C., Doyle, A. M., Bonnell, C., & Weiss, H. A. (2021). Remote data collection for public health research in a COVID-19 era: Ethical implications, challenges and opportunities. *Health Policy and Planning*, 36(2), 360-368.
- Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (editors). (2023). *Cochrane Handbook for Systematic Reviews of Interventions* (version 6.4). Retrieved April 9, from, [www.training.cochrane.org/handbook](http://www.training.cochrane.org/handbook).
- Hildebrand, D. L. (2011). Pragmatic democracy: Inquiry, objectivity, and experience. *Metaphilosophy*, 42(5), 589-604.
- Hodgson, E. (2019). *Introducing group consultations for cancer care reviews*.  
[https://www.england.nhs.uk/atlas\\_case\\_study/introducing-group-consultations-for-cancer-care-reviews/](https://www.england.nhs.uk/atlas_case_study/introducing-group-consultations-for-cancer-care-reviews/)
- Holcomb, J., Ferguson, G. M., Sun, J., Walton, G. H., & Highfield, L. (2022). Stakeholder engagement in adoption, implementation, and sustainment of an evidence-based intervention to increase mammography adherence among low-income women. *Journal of Cancer Education: The Official Journal of the American Association for Cancer Education*, 37(5), 1486-1495.
- Holden, M. T., & Lynch, P. (2004). Choosing the appropriate methodology: Understanding research philosophy. *The Marketing Review*, 4(4), 397-409.



- Holloway, I., & Todres, L. (2003). The status of method: Flexibility, consistency, and coherence. *Qualitative Research*, 3, 345-357.
- Hong, Q. N., Pluye, P., Fábregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M-P, Griffith, F., Nacolau, B., O’Cathain, A., Rousseau, M-C., & Vedel, I. (2018). *Mixed methods appraisal tool (MMAT)*. Retrieved March 4, 2024, from [http://mixedmethodsappraisaltoolpublic.pbworks.com/w/file/attachment/127916259/MMAT\\_2018\\_criteria-manual\\_2018-08-01\\_ENG.pdf](http://mixedmethodsappraisaltoolpublic.pbworks.com/w/file/attachment/127916259/MMAT_2018_criteria-manual_2018-08-01_ENG.pdf)
- Horrell, B., Stephens, C., & Breheny, M. (2015). Online research with informal caregivers: Opportunities and challenges. *Qualitative Research in Psychology*, 12, 258–271.
- Horsley, T., Dingwall, O. & Sampson, M. (2011). Checking reference lists to find additional studies for systematic reviews. *The Cochrane Database of Systematic Reviews*, (8), MR000026. <https://doi.org/10.1002/14651858.MR000026.pub2>
- House of Commons Library. (2023). *NHS key statistics: England*. <https://commonslibrary.parliament.uk/research-briefings/cbp-7281/#:~:text=The%20waiting%20list%20for%20hospital%20treatment%20rose%20to,treatment%20target%20has%20not%20been%20met%20since%202016.>
- Hsieh, H-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288.

- Huddleston, L., Turner, J., Eborall, H., Hudson, N., Davis, M., & Martin, G. (2020). Application of normalisation process theory in understanding implementation processes in primary care settings in the UK: A systematic review. *BMC Family Practice*, 21, 52.
- Hunter, A., & Brewer, J. (2015). Designing multimethod research. In S. N. Hesse-Biber & R. B. Johnson (Ed.), *The oxford handbook of multimethod and mixed methods research inquiry* (pp.185-205). Oxford University Press.
- Hunter, S. C., Kim, B., Mudge, A., Hall, L., Young, A., McRae, P., & Kitson, A. L. (2020). Experiences of using the i-PARIHS framework: A co-designed case study of four multi-site implementation projects. *BMC Health Services Research*, 20(1), 573.
- Hutton, C., & Gunn, J. (2007). Do longer consultations improve the management of psychological problems in general practice? A systematic literature review. *BMC Health Services Research*, 7, 1-15.
- Ide, Y., & Beddoe, L. (2023). Challenging perspectives: Reflexivity as a critical approach to qualitative social work research. *Qualitative Social Work*, 0(0).
- Imison, C., Castle-Clarke, S., & Watson, R. (2016). *Reshaping the workforce to deliver the care patients need*. Nuffield Trust.

- Jaber, R., Braksmajer, A., & Trilling, J. (2006). Group visits for chronic illness care: Models, benefits and challenges. *Family Practice Management, 13*(1), 37–40.
- Jackson, M., Jones, D., Dyson, J., & Macleod, U. (2019). Facilitated group work for people with long-term conditions: A systematic review of benefits from studies of group-work interventions. *British Journal of General Practice, 69*(682), e363–e372.
- James, H. M., Papoutsis, C., Wherton, J., Greenhalgh, T., & Shaw, S. E. (2021). Spread, scale-up, and sustainability of video consulting in health care: Systematic review and synthesis guided by the NASSS framework. *Journal of Medical Internet Research, 23*(1), 1-15.
- Jensen, M. N., & Fage-Butler, A. M. (2016). Antenatal group consultations: Facilitating patient-patient education. *Patient Education and Counselling, 99*(12), 1999-2004.
- Jinks, C., Carter, P., Rhodes, C., Taylor, R., Beech, R., Dziedzic, K., Blackburn, S., Hughes, R., & Ong, B. N. (2016). Patient and public involvement in primary care research - an example of ensuring its sustainability. *Research Involvement and Engagement, 2*, 1. <https://doi.org/10.1186/s40900-016-0015-1>
- Joffe, H., & Yardley, L. (2004). Content and thematic analysis. In H. Joffe & L. Yardley (Ed.), *Research methods for clinical and health psychology* (pp.56-68). SAGE.

- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14–26.
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, 1(2), 112–133.
- Johnson, T. P. (2014). *Snowball sampling: Introduction*. Retrieved April 25, 2024, from <https://onlinelibrary.wiley.com/doi/abs/10.1002/9781118445112.stat05720>
- Jones, T., Darzi, A., Egger, G., Ickovics, J., Noffsinger, E., Ramdas, K., Stevens, J., Sumego, M., & Birrell, F. (2019). Process and systems: A systems approach to embedding group consultations in the NHS. *Future Healthcare Journal*, 6(1), 8–16. <https://doi.org/10.7861/futurehosp.6-1-8>
- Juarez-Reyes, M., Mui, H. Z., Kling, S. M. R., & Brown-Johnson, C. (2021). Accessing behavioral health care during COVID: Rapid transition from in-person to teleconferencing medical group visits. *Therapeutic Advances in Chronic Disease*. 12. doi:10.1177/2040622321990269
- Kaffash, J. (2024a). *The 2024/25 GP contract in England at a glance*. <https://www.pulsetoday.co.uk/analysis/2024-25-gp-contract/the-2024-25-gp-contract-in-england-at-a-glance/>

Kaffash, J. (2024b). *2024/25 contract: What it means for GPs and practices*. <https://www.pulsetoday.co.uk/analysis/2024-25-gp-contract/2024-25-contract-what-it-means-for-gps-and-practices/>

Kahlert, J., Gribsholt, S. B., Gammelager, H., Dekkers, O. M., & Luta, G. (2017). Control of confounding in the analysis phase - an overview for clinicians. *Clinical Epidemiology*, 9, 195–204.

Karuna, C., Palmer, V., Scott, A., & Gunn, J. (2021). Prevalence of burnout among GPs: A systematic review and meta-analysis. *British Journal of General Practice*, 72(718), e316-e324.

Katula, J. A., Dressler, E. V., Kittel, C. A., Harvin, L. N., Almeida, F. A., Wilson, K. E., Michaud, T. L., Porter, G. C., Brito, F. A., Goessl, C. L., Jasik, C. B., Sweet, C. M. C., Schwab, R., & Estabrooks, P. A. (2022). Effects of a digital diabetes prevention program: An RCT. *American Journal of Preventive Medicine*, 62(4), 567–577. <https://doi.org/10.1016/j.amepre.2021.10.023>

Keary, E., Byrne, M., & Lawton, A. (2012). How to conduct a literature review. *The Irish Psychologist*, 38(9-10), 239-245.

Keele University. (2024a). *Evidence based practice group for general practice nursing*. Retrieved May 19, 2022, from [https://www.keele.ac.uk/iau/evidenceintopracticegroups/practice\\_nursing/#creating-your-own--ebp-group-for-nurses](https://www.keele.ac.uk/iau/evidenceintopracticegroups/practice_nursing/#creating-your-own--ebp-group-for-nurses)

Keele University. (2024b). *Lay involvement in knowledge mobilisation*. Retrieved January 21, 2022, from, <https://www.keele.ac.uk/medicine/research/impactacceleratoru>

[nit/patientandpublicinvolvementandengagementinimplementation/layinvolvementinknowledgemobilisation/](#).

Keele University. (2024c). *What does a rug member do?*. Retrieved January 21, 2022 from, <https://www.keele.ac.uk/medicine/research/ppie/whatisppie/whatdoesarugmemberdo/>.

Kennedy, A. (2014). Understanding continuing professional development: The need for theory to impact on policy and practice. *Professional Development in Education*, 40(5), 688–697. <https://doi.org/10.1080/19415257.2014.955122>

Kerbel, D., & Craig, G. (2021). *Video group clinic case study - general practice: Supporting people living with long COVID in video group clinics*. Retrieved March 22, 2021, [file:///C:/Users/ellee/Downloads/VC-case-study-Long-Covid-Saffron-%20\(1\).pdf](file:///C:/Users/ellee/Downloads/VC-case-study-Long-Covid-Saffron-%20(1).pdf)

Kesmodel, U. S. (2018). Cross-sectional studies - what are they good for?. *Acta Obstetricia et Gynecologica Scandinavica*, 97(4), 388–393. <https://doi.org/10.1111/aogs.13331>

Ketcherside, M., Rhodes, D., Powelson, S., Cox, C., & Parker, J. (2017). Translating interprofessional theory to interprofessional practice. *Journal of Professional Nursing*, 33(5), 370-377.

Khan, N. (2024). Are we seeing more complex patients and, if so, why?. *British Journal of General Practice*, 74(741), 177-178.

Khan, N., Jones, D., Grice, A., Alderson, S., Bradley, S., Carder, P., Drinkwater, J., Edwards, H., Essang, B., Richards, S., & Neal, R. (2020). A brave new world: The new normal for general practice after the COVID-19 pandemic. *BJGP Open*, 4(3), 1-4.

Khodyakov, D., Grant, S., Meeker, D., Booth, M., Pacheco-Santivanez, N., & Kim, K. K. (2017). Comparative analysis of stakeholder experiences with an online approach to prioritizing patient-centred research topics. *Journal of the American Medical Informatics Association*, 24(3), 537–543.

King, N. (2004). Using templates in the thematic analysis of text. In C. Cassell & G. Symon (Ed.), *Essential Guide to Qualitative Methods in Organizational Research* (pp. 256-270). SAGE Publications Ltd, <https://doi.org/10.4135/9781446280119>

Kirchherr, J., & Charles, K. (2018). Enhancing the sample diversity of snowball samples: Recommendations from a research project on anti-dam movements in southeast asia. *PLoS ONE*, 13, e0201710.

Kirsh, S. R., Aron, D. C., Johnson, K. D., Santurri, L. E., Stevenson, L. D., Jones, K. R., & Jagosh, J. (2017). A realist review of shared medical appointments: How, for whom, and under what circumstances do they work?. *BMC Health Services Research*, 17(1), 1-13.

Kitson, A. L., & Harvey, G. (2016). Methods to succeed in effective knowledge translation in clinical practice. *Journal of Nursing Scholarship*, 48, 294-302.

- Kitzinger, J. (1994). The methodology of focus groups: The importance of interaction between research participants. *Sociology of Health & Illness*, 16(1), 103-121.
- Kitzinger, J. (1995). Qualitative research: Introducing focus groups. *British Medical Journal*, 311(7000), 299-302.
- Kondracki, N. L., & Wellman, N. S. (2002). Content analysis: Review of methods and their applications innutrition education. *Journal of Nutrition Education and Behaviour*, 34, 224-230.
- Kowalski, C. P., Veaser, M., & Heisler, M. (2018). Formative evaluation and adaptation of pre-and early implementation of diabetes shared medical appointments to maximize sustainability and adoption. *BMC Family Practice*, 19(1), 109. <https://doi.org/10.1186/s12875-018-0797-3>
- Krippendorff, K. (2018). *Content analysis: An introduction to its methodology*. SAGE.
- Kuek, A., & Hakkennes, S. (2020). Healthcare staff digital literacy levels and their attitudes towards information systems. *Health Informatics Journal*, 592-612.
- Kwan, B. M., Rementer, J., Richie, N., Nederveld, A. L., Phimphasone-Brady, P., Sajatovic, M., Nease, D. E., Jr, & Waxmonsky, J. A. (2020). Adapting diabetes shared medical appointments to fit context for practice-based research (PBR). *Journal of the American Board of Family Medicine : JABFM*, 33(5), 716–727. <https://doi.org/10.3122/jabfm.2020.05.200049>



Lau, R., Stevenson, F., Ong, B. N., Dziedzic, K., Eldridge, S., Everitt, H., Kennedy, A., Kontopantelis, E., Little, P., Qureshi, N., Rogers, A., Treweek, S., Peacock, R., & Murray, E. (2014). Addressing the evidence to practice gap for complex interventions in primary care: A systematic review of reviews protocol. *BMJ Open*, 4(6), e005548. <https://doi.org/10.1136/bmjopen-2014-005548>

Lau, R., Stevenson, F., Ong, B. N., Dziedzic, K., Treweek, S., Eldridge, S., Everitt, H., Kennedy, A., Qureshi, N., Rogers, A., Peacock, R., & Murray, E. (2015). Achieving change in primary care--effectiveness of strategies for improving implementation of complex interventions: Systematic review of reviews. *BMJ Open*, 5(12), e009993. <https://doi.org/10.1136/bmjopen-2015-009993>

Lau, R., Stevenson, F., Ong, B. N., Dziedzic, K., Treweek, S., Eldridge, S., Everitt, H., Kennedy, A., Qureshi, N., Rogers, A., Peacock, R., & Murray, E. (2016). Achieving change in primary care—causes of the evidence to practice gap: Systematic reviews of reviews. *Implementation Science*, 11(40), 1-39.

Lavoie, J. G., Wong, S. T., Chongo, M., Browne, A. J., MacLeod, M. L., & Ulrich, C. (2013). Group medical visits can deliver on patient-centred care objectives: Results from a qualitative study. *BMC Health Services Research*, 13, 155. <https://doi.org/10.1186/1472-6963-13-155>

Lawrence, P., Roger, S., Lane, L., & Eisner, R. (2000). Participatory multiple objective decision-making processes: Emerging

approaches with new challenges. *Watershed Management and Operations Management*, 1-11.

Laycock, A., Harvey, G., Percival, N., Cunningham, F., Bailie, J., Matthews, V., Copley, K., Patel, L., & Bailie, R. (2018). Application of the i-PARIHS framework for enhancing understanding of interactive dissemination to achieve wide-scale improvement in indigenous primary healthcare. *Health Research Policy and Systems*, 16(1), 117. <https://doi.org/10.1186/s12961-018-0392-z>

LeCompte, M. D., & Goetz, J. P. (1982). Problems of reliability and validity in ethnographic research. *Review of Educational Research*, 52, 31-60.

Leung L. (2015). Validity, reliability, and generalizability in qualitative research. *Journal of Family Medicine and Primary Care*, 4(3), 324–327.

Levitt, H. M., Morrill, Z., Collins, K. M., & Rizo, J. L. (2021). The methodological integrity of critical qualitative research: Principles to support design and research review. *Journal of Counseling Psychology*, 68(3), 357-370.

Lin, Y., Saper, R., & Patil, S. J. (2022). Long COVID shared medical appointments: Lifestyle and mind-body medicine with peer support. *The Annals of Family Medicine*, 20 (4), 383. <https://doi.org/10.1370/afm.2817>

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE.

Lindgren, B., Lundman, B., & Grandeheim, U. (2020). Abstraction and interpretation during the qualitative content analysis process. *International Journal of Nursing Studies*, 108.

Lingard, L. (2019). Beyond the default colon: Effective use of quotes in qualitative research. *Perspectives on Medical Education*, 8(6), 360–364.

Lloyds Bank. (2018). *UK consumer digital index 2018*.  
[https://www.lloydsbank.com/assets/media/pdfs/banking\\_with\\_us/whats-happening/LB-Consumer-Digital-Index-2018-Report.pdf](https://www.lloydsbank.com/assets/media/pdfs/banking_with_us/whats-happening/LB-Consumer-Digital-Index-2018-Report.pdf)

Lobe, B., Morgan, D. L., & Hoffman, K. (2022). A systematic comparison of in-person and video-based online interviewing. *International Journal of Qualitative Methods*, 21.  
<https://doi.org/10.1177/16094069221127068>

Löhr, K., Weinhardt, M., & Sieber, S. (2020). The “world café” as a participatory method for collecting qualitative data. *International Journal of Qualitative Methods*, 19, 1–15.

Long, K. M., McDermott, F., & Meadows, G. N. (2018). Being pragmatic about healthcare complexity: Our experiences applying complexity theory and pragmatism to health services research. *BMC Medicine*, 16, 94.

Lovas, N. (2020). *Market research basics: Finding demographic data*. Retrieved March 16, 2022, from  
<https://guides.lib.unc.edu/market-research-tutorial/demographics>

- Lucas, P. J., Baird, J., Arai, L., Law, C., & Roberts, H. M. (2007). Worked examples of alternative methods for the synthesis of qualitative and quantitative research in systematic reviews. *BMC Medical Research Methodology*, 7, 4.
- Lum, H. D., Dukes, J., Daddato, A. E., Juarez-Colunga, E., Shanbhag, P., Kutner, J. S., Levy, C. R., & Sudore, R. L. (2020). Effectiveness of advance care planning group visits among older adults in primary care. *Journal of the American Geriatrics Society*, 68(10), 2382–2389. <https://doi.org/10.1111/jgs.16694>
- Lum, H. D., Sudore, R. L., Matlock, D. D., Juarez-Colunga, E., Jones, J., Nowels, M., Schwartz, R. S., Kutner, J. S., & Levy, C. R. (2017). A group visit initiative improves advance care planning documentation among older adults in primary care. *Journal of the American Board of Family Medicine : JABFM*, 30(4), 480–490. <https://doi.org/10.3122/jabfm.2017.04.170036>
- Lunny, C., Brennan, S. E., McDonald, S., & McKenzie, J. E. (2017). Toward a comprehensive evidence map of overview of systematic review methods: Paper 1 - purpose, eligibility, search and data extraction. *Systematic Reviews*, 6(1), 231.
- Lunny, C., Brennan, S. E., McDonald, S., & McKenzie, J. E. (2018). Toward a comprehensive evidence map of overview of systematic review methods: Paper 2 - risk of bias assessment; synthesis, presentation and summary of the findings; and assessment of the certainty of the evidence. *Systematic Reviews*, 7(1), 159.

Lynch, E. A., Mudge, A., Knowles, S., Kitson, A. L., Hunter, S. C., & Harvey, G. (2018). "There is nothing so practical as a good theory": A pragmatic guide for selecting theoretical approaches for implementation projects. *BMC Health Services Research*, 18(1), 857.

Lynch, M. (2022). *Video group clinics (VGCs): Evaluation outcomes, links to Welsh approach to improving health and next steps*. Retrieved from <https://www.elcworks.co.uk/wp-content/uploads/2022/12/Wales-VGC-Outpatients-Evaluation-Presentation-v3-281022.pdf>

Maarouf, H. (2019). Pragmatism as a supportive paradigm for the mixed research approach: Conceptualising the ontological, epistemological, and axiological stances of pragmatism. *International Business Research*, 12(9), 1. [10.5539/ibr.v12n9p1](https://doi.org/10.5539/ibr.v12n9p1)

Mackie, L., & Holender, A. (2020). Group consultations – the future of general practice?. *Cambridge Medical Journal*, 1-4.

Mahajan, U. V., Sharma, N., Maynard, M., Kang, L., Labak, C. M., Raghavan, A., Sajatovic, M., Hoffer, A., Shammassian, B. H., Wright, J. M., Zhou, X., & Wright, C, H. (2022). Inpatient virtual shared medical appointments to improve health literacy, increase patient self-efficacy, and reduce provider burnout in acute cerebrovascular pathology patients and their caregivers: A pilot study. *Neurological Focus*, 52(6), E12.

- Mahase, E. (2021). General practice needs rescue package to prevent burnout and preserve care, warns RCGP. *British Medical Journal*, 374.
- Maheshwari, O., Burrell, E., Tomori, C., Phillip, A., Eadie, H., Kotler, M., & Cheek, J. (2022). Effectiveness and accessibility of virtual cognitive behavioural therapy skills group medical visits during COVID-19. *British Columbia Medical Journal*, 64(9), 383-389.
- Maier, C., Bennett Thatcher, J., Grover, V., & Dwivedi, Y. K. (2023). Cross-sectional research: A critical perspective, use cases, and recommendations for IS research. *International Journal of Information Management*, 70, 102625. <https://doi.org/10.1016/j.ijinfomgt.2023.102625>
- Majeed, A., Maile, E. J., & Coronini-Cronberg, S. (2020). *Covid-19 is magnifying the digital divide*. BMJ Opinion. <https://blogs.bmj.com/bmj/2020/09/01/covid-19-is-magnifying-the-digital-divide/>
- Malterud, K., Siersma, V. K., & Guassora, A. D. (2016). Sample size in qualitative interview studies: Guided by information power. *Qualitative Health Research*, 26(13), 1753-1760.
- Marcello, M., Checkland, K., Hammond, J., Lau, Y-S., & Sutton, M. (2020). Variability in size and characteristics of primary care networks in England: Observational study. *British Journal of General Practice*, 70(701), e899-e905.
- Marshall, M., Howe, A., Howsam, G., Mulholland, M., & Leach, J. (2020). COVID-19: A danger and an opportunity for the future of

general practice. *British Journal of General Practice*, 70(695), 207-271.

Marziali, E., & Garcia, L. J. (2011). Dementia caregivers' responses to 2 Internet-based intervention programs. *American Journal of Alzheimer's Disease and Other Dementias*, 26(1), 36–43. <https://doi.org/10.1177/1533317510387586>

Mash, R. J., & Cairncross, J. (2023). Piloting of virtual group education for diabetes in Cape Town: An exploratory qualitative study. *South African Family Practice : Official Journal of the South African Academy of Family Practice/Primary Care*, 65(1), e1–e7. <https://doi.org/10.4102/safp.v65i1.5635>

Mathew, R. (2021). Digital access has opened the floodgates to patient demand. *British Medical Journal*, 373, 1246. <https://www.bmj.com/content/373/bmj.n1246>.

Mathie, E., Wilson, P., Poland, F., McNeilly, E., Howe, A., Staniszewska, S., Cowe, M., Munday, D., & Goodman, C. (2014). Consumer involvement in health research: A UK scoping and survey. *International Journal of Consumer Studies*, 38, 35-44. <https://doi.org/10.1111/ijcs.12072>

Maxwell, J. A. (2011). Paradigms or toolkits? Philosophical and methodological positions as heuristics for mixed methods research. *Mid-Western Educational Researcher*, 24(2), 27-30.

May, C. (2006). A rational model for assessing and evaluating complex interventions in health care. *BMC Health Services Research*, 6(7), 1-11. doi:10.1186/1472-6963-6-86

- May, C. R., Cummings, A., Girling, M., Bracher, M., Mair, F. S., May, C. M., Murray, E., Myall, M., Rapley, T., & Finch, T. (2018). Using normalization process theory in feasibility studies and process evaluations of complex healthcare interventions: A systematic review. *Implementation Science : IS*, 13(1), 80. <https://doi.org/10.1186/s13012-018-0758-1>
- May, C. R., & Finch, T. (2009). Implementing, embedding, and integrating practices: An outline of normalization process theory. *Sociology*, 43(3), 535–554.
- May, C. R., Johnson, M., & Finch, T. (2016). Implementation, context and complexity. *Implementation Science*, 11, 141.
- May, C. R., Mair, F., Finch, T., MacFarlane, A., Dowrick, C., Treweek, S., Rapley, T., Ballini, L., Ong, B. N., Rogers, A., Murray, E., Elwyn, G., Légaré, F., Gunn, J., & Montori, V. M. (2009). Development of a theory of implementation and integration: Normalization process theory. *Implementation Science : IS*, 4, 29. <https://doi.org/10.1186/1748-5908-4-29>
- May, C. R., Rapley, T., Mair, F. S., Treweek, S., Murray, E., Ballini, L., Macfarlane, A., Girling, M., & Finch, T. (2015). *Normalisation process theory on-line users' manual toolkit and NoMAD instrument*. Retrieved May 23, 2024, from <https://normalization-process-theory.northumbria.ac.uk/>
- May, S. G., Cheng, P. H., Tietbohl, C. K., Trujillo, L., Reilly, K., Frosch, D. L., & Lin, G. A. (2014). Shared medical appointments to screen for geriatric syndromes: Preliminary data from a quality



improvement initiative. *Journal of the American Geriatrics Society*, 62(12), 2415-2419.

McDermut, W., Miller, I. W., & Brown, R. A. (2001). The efficacy of group psychotherapy for depression: A meta-analysis and review of the empirical research. *Clinical Psychology: Science and Practice*, 8, 98-116.

McEvoy, R., Ballini, L., Maltoni, S., O'Donnell, C. A., Mair, F. S., & MacFarlane, A. (2014). A qualitative systematic review of studies using the normalization process theory to research implementation processes. *Implementation Science*, 9(1), 2.

McMillan, J. H., & Schumacher, S. (2006). *Research in education: Evidence-based inquiry* (6th ed.). Allyn and Bacon.

Mehrotra, A., Ray, K., Brockmeyer, D. M., Barnett, M. L., & Bender, J. A. (2020). *Rapidly converting to "virtual practices": Outpatient care in the era of Covid-19*. <https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0091>

Meiser, B., Schofield, P. R., Trevena, L., Wilde, A., Barlow-Stewart, K., Proudfoot, J., Peate, M., Dobbins, T., Christensen, H., Sherman, K. A., Karatas, J., & Mitchell, P. B. (2013). Cluster randomized controlled trial of a psycho-educational intervention for people with a family history of depression for use in general practice. *BMC Psychiatry*, 13, 325. <https://doi.org/10.1186/1471-244X-13-325>

Melton, L., Brewer, B., Kolva, E., Joshi, T., & Bunch, M. (2017). Increasing access to care for young adults with cancer: Results

of a quality-improvement project using a novel telemedicine approach to supportive group psychotherapy. *Palliative and Supportive Care*, 15(2), 176-180.  
<https://doi.org/10.1017/S1478951516000572>

Miles, M. B., & Huberman, A. M. (1984). *Qualitative data analysis*. SAGE.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. SAGE.

Miller, R. (2017). English general practice: Once, twice, three times a hybrid. *Journal of Primary Health Care*, 9(3), 204–7.

Mills, J., & Birks, M. (2014). *Qualitative research: A practical guide*. SAGE.

Mirsky, J., Brodney, S., Boratyn, V., & Thorndike, A. N. (2023). Lifestyle medicine virtual group visits: Patient attendance and perceived benefits. *American Journal of Lifestyle Medicine*, 0(0).  
[doi:10.1177/15598276231208164](https://doi.org/10.1177/15598276231208164)

Mirsky, J., Bui, T. X. V., Grady, C. B., Pagliaro, J. A., & Bhatt, A. (2022). Hypertension control and medication titration associated with lifestyle medicine virtual group visits and home blood pressure monitoring. *American Journal of Lifestyle Medicine*, 0(0).  
[doi:10.1177/15598276221108060](https://doi.org/10.1177/15598276221108060)

Mitchell, K. M., & Clarke, A. M. (2018). Five steps to writing more engaging qualitative research. *International Journal of*

- Moin, T., Damschroder, L. J., AuYoung, M., Maciejewski, M. L., Havens, K., Ertl, K., Vasti, E., Weinreb, J. E., Steinle, N. I., Billington, C. J., Hughes, M., Makki, F., Youles, B., Holleman, R. G., Kim, H. M., Kinsinger, L. S., & Richardson, C. R. (2018). Results from a trial of an online diabetes prevention program intervention. *American Journal of Preventive Medicine*, 55(5), 583–591. <https://doi.org/10.1016/j.amepre.2018.06.028>
- Montgomery, A., Panagapoulou, E., Esmail, A., Richards, T., & Maslach, C. (2019). Burnout in healthcare: The case for organisational change. *British Medical Journal*, 366, 14774.
- Moore, E., Paré, C., Carde, E., & Pagé, M. G. (2024). Virtual group psychotherapy for chronic pain: Exploring the impact of the virtual medium on participants' experiences. *Pain Medicine*, 25(2), 131–138. <https://doi.org/10.1093/pm/pnad130>
- Morgan, D. L. (1993). Qualitative content analysis: A guide to paths not taken. *Qualitative Health Research*, 3(1), 112–121.
- Morgan, D. L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1(1), 48–76
- Morgan, D. L., David, M., & Krueger, R. A. (1998). *The focus group guidebook*. SAGE.

- Morse, J. M. (2015). Issues in qualitatively-driven mixed-method designs: walking through a mixed method project. In S. N. Hesse-Biber & R. B. Johnson (Ed.), *The Oxford Handbook of Multimethod and Mixed Methods Research Inquiry* (pp.206-222). Oxford University Press.
- Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods*, 1(2), 13-22.  
<https://doi.org/10.1177/160940690200100202>
- Morton, K. L., Atkin, A. J., Corder, K., Suhrcke, M., Turner, D., & Van Sluijs, E. M. F. (2017). Engaging stakeholders and target groups in prioritising a public health intervention: The creating active school environments (CASE) online delphi study. *BMJ Open*, 7.
- Mroz, G., Papoutsis, C., & Greenhalgh, T. (2021). 'From disaster, miracles are wrought': A narrative analysis of UK media depictions of remote GP consulting in the COVID-19 pandemic using Burke's pentad. *Medical Humanities*, 47(30), 292-301.
- Mroz, G., Papoutsis, C., Rushforth, A., & Greenhalgh, T. (2021). Changing media depictions of remote consulting in COVID-19: Analysis of UK newspapers. *British Journal of General Practice*, 71(702), 1-9.
- Mudge, A. M., McRae, P., Lee-Steere, K., & Cahill, M. (2017). Eat walk engage: Improving outcomes for hospitalised elders. *Innovation*

in *Aging*, 1(Suppl 1), 964.  
<https://doi.org/10.1093/geroni/igx004.3477>

Mulrow, C. D. (1994). Rationale for systematic reviews. *British Medical Journal*, 309(6954), 597-599.

Murphy, M., Scott, L. J., Salisbury, C., Turner, A., Scott, A., Denholm, R., Lewis, R., Iyer, G., Macleod, J., & Horwood, J. (2021). Implementation of remote consulting in UK primary care following the COVID-19 pandemic: A mixed method longitudinal study. *British Journal of General Practice*, 74(704), e166-177.

Murray, E., Treweek, S., Pope, C., MacFarlane, A., Ballini, L., Dowrick, C., Finch, T., Kennedy, A., Mair, F., O'Donnell, C., Ong, B. N., Rapley, T. Rodgers, A., & May, C. (2010). Normalisation process theory: A framework for developing, evaluating and implementing complex interventions. *BMC Medicine*, 8, 63.  
<https://doi.org/10.1186/1741-7015-8-63>

National Institute of Health and Care Excellence. (2012). *The guidelines manual*. <https://www.nice.org.uk/process/pmg6/resources/the-guidelines-manual-pdf-2007970804933>

National Institute of Health and Care Excellence. (2016). *Writing for NICE: A guide to help you write more clearly*.  
<https://www.nice.org.uk/corporate/ecd2/resources/writing-for-nice-a-guide-to-help-you-write-more-clearly-pdf-1124009059525>

National Institute of Health and Care Excellence. (2019). *Evidence standards framework for digital health technologies*.

<https://www.nice.org.uk/Media/Default/About/what-we-do/our-programmes/evidence-standards-framework/digital-evidence-standards-framework.pdf>

National Institute for Health Research. (2020). *Group clinics may be better than individual consultations for some elements of diabetes care*. <https://evidence.nihr.ac.uk/alert/group-clinics-may-be-better-than-individual-consultations-for-some-elements-of-diabetes-care/>

Nederveld, A., Phimphasone-Brady, P., Gurfinkel, D., Waxmonsky, J. A., Kwan, B. M., & Holtrop, J. S. (2023). Delivering diabetes shared medical appointments in primary care: Early and mid-program adaptations and implications for successful implementation. *BMC Primary Care*, 24(1), 52. <https://doi.org/10.1186/s12875-023-02006-8>

Nelson, S., & Craig, G. (2019). How group consultations are changing respiratory care. *Practice Nursing*, 30(3), 136-139.

Newcastle University. (2024). *Can shared medical appointments in general practice support people living with chronic obstructive pulmonary disease in the North East and North Cumbria region of England*. Retrieved April 9, 2024, from <https://www.isrctn.com/ISRCTN88389291>

NHS Confederation. (2022). *Primary care networks: Three years on*. <https://www.nhsconfed.org/publications/pcns-three-years#:~:text=To%20remedy%20the%20rollercoaster%20of%2>

Other%20past%20three,health%20practitioner%20role%20and  
%20further%20support%20for%20transformation.

NHS Confederation. (2024). *Assessing the impact and success of the additional roles reimbursement scheme.*  
[https://www.nhsconfed.org/system/files/2024-02/Assessing-  
impact-success-ARRS-FNL.pdf](https://www.nhsconfed.org/system/files/2024-02/Assessing-impact-success-ARRS-FNL.pdf)

NHS Data Model and Dictionary. (2024). *Long term physical health condition.* Retrieved September 20, 2024, from  
[https://www.datadictionary.nhs.uk/nhs\\_business\\_definitions/lon  
g\\_term\\_physical\\_health\\_condition.html?hl=long%20term%20Cc  
ondition](https://www.datadictionary.nhs.uk/nhs_business_definitions/long_term_physical_health_condition.html?hl=long%20term%20Condition)

NHS Digital. (2020). *Appointments in general practice: May 2020.*  
Retrieved March 15, 2021, from [https://digital.nhs.uk/data-and-  
information/publications/statistical/appointments-in-general-  
practice/may-2020](https://digital.nhs.uk/data-and-information/publications/statistical/appointments-in-general-practice/may-2020)

NHS Digital. (2021a). *Primary care network workforce.* Retrieved March 4, 2021, from [https://digital.nhs.uk/data-and-  
information/publications/statistical/primary-care-network-  
workforce/31-december-2020](https://digital.nhs.uk/data-and-information/publications/statistical/primary-care-network-workforce/31-december-2020)

NHS Digital. (2021b). *Quality outcomes framework 2021.* Retrieved January 25, 2021, from <https://qof.digital.nhs.uk/>,

NHS Digital. (2021c). *Appointments in general practice.* Retrieved May 3, 2022, from [https://digital.nhs.uk/data-and-  
information/publications/statistical/appointments-in-general-  
practice](https://digital.nhs.uk/data-and-information/publications/statistical/appointments-in-general-practice)

NHS Digital. (2023). *Shaping the future of technology in general practice*. Retrieved November 5, 2023, from <https://digital.nhs.uk/blog/transformation-blog/2023/shaping-the-future-of-technology-in-general-practice>

NHS England. (2014). *Five year forward view*. Retrieved March 4, 2021, from <https://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf>

NHS England. (2016a). *General practice forward view*. Retrieved March 3, 2021, from <https://www.england.nhs.uk/wp-content/uploads/2016/04/gpfv.pdf>

NHS England. (2016b). *Staffordshire and Stoke on Trent STP*. Retrieved March 9, 2021, from <https://www.england.nhs.uk/integratedcare/how-did-we-get-here/view-stps/staffordshire-and-stoke-on-trent/>

NHS England. (2016c). *Reducing pressure in general practice: Group consultations for diabetes in Slough*. <https://www.england.nhs.uk/publication/reducing-pressure-in-general-practice-group-consultations-for-diabetes-in-slough/>

NHS England. (2017a). *Next steps on the NHS five year forward view*. Retrieved May 13, 2021, from <https://www.england.nhs.uk/publication/next-steps-on-the-nhs-five-year-forward-view/>



NHS England. (2017b). *General practice – developing confidence, capability and capacity: Ten point action plan for general practice nursing*. Retrieved March 9, 2021 from, <https://www.england.nhs.uk/wp-content/uploads/2018/01/general-practice-nursing-ten-point-plan-v17.pdf>

NHS England. (2019a). *The NHS long term plan*. Retrieved February 23, 2021, from <https://www.longtermplan.nhs.uk/wp-content/uploads/2019/08/nhs-long-term-plan-version-1.2.pdf>.

NHS England. (2019b). *Investment and evolution: A five-year framework for GP contract reform to implement The NHS long term plan*. Retrieved February 23, 2021, from <https://www.england.nhs.uk/wp-content/uploads/2019/01/gp-contract-2019.pdf>.

NHS England. (2019c). *Digital inclusion guide for health and social care*. Retrieved March 15, 2021, from <https://digital.nhs.uk/about-nhs-digital/our-work/digital-inclusion>

NHS England. (2020). *Using online consultations in primary care: Implementation toolkit*. Retrieved March 15, 2021, from <https://www.england.nhs.uk/wp-content/uploads/2020/01/online-consultations-implementation-toolkit-v1.1-updated.pdf>

NHS England. (2021). *Improving access: Group consultations in Slough*. Retrieved March 15, 2021, from <https://www.england.nhs.uk/gp/case-studies/diabetes-slough/>

NHS England. (2023a). *Delivery plan for recovering access to primary care*. Retrieved November 27, 2023, from <https://www.england.nhs.uk/long-read/delivery-plan-for-recovering-access-to-primary-care-2/>

NHS England. (2023b). *Primary care service development funding and general practice IT funding guidance 2023/24*. Retrieved November 27, 2023, from <https://www.england.nhs.uk/long-read/primary-care-service-development-funding-and-general-practice-it-funding-guidance-2023-24/>

NHS England. (2023c). *NHS long term workforce plan*. Retrieved November 27, 2023, from <https://www.england.nhs.uk/wp-content/uploads/2023/06/nhs-long-term-workforce-plan-v1.2.pdf>

NHS England. (2023d). *Changes to the GP contract in 2023/24*. Retrieved November 27, 2023, from <https://www.england.nhs.uk/long-read/changes-to-the-gp-contract-in-2023-24/>.

NHS England. (2024a). *Network contract DES contract specification 2024/25 – PCN requirements and entitlements*. <https://www.england.nhs.uk/publication/network-contract-des-contract-specification-2024-25-pcn-requirements-and-entitlements/>

NHS England. (2024b). *Arrangements for the GP contract in 2024/25*. Retrieved April 15, from <https://www.england.nhs.uk/long-read/arrangements-for-the-gp-contract-in-2024-25/>

NHS England. (2024c). *Group consultations: Together, patients are stronger*. <https://www.england.nhs.uk/gp/case-studies/group-consultations-together-patients-are-stronger/>

NHS England and NHS Improvement. (2020). *Integrating care: Next Steps to building strong and effective integrated care systems across England*. Retrieved June 29, 2022, from <https://www.england.nhs.uk/publication/integrating-care-next-steps-to-building-strong-and-effective-integrated-care-systems-across-england/>

NHS England and NHS Improvement (2021a). *Integrated care systems: Design framework*. Retrieved June 29, 2022 from <https://www.england.nhs.uk/wp-content/uploads/2021/06/B0642-ics-design-framework-june-2021.pdf>

NHS England and NHS Improvement. (2021b). *Core20Plus5: An approach to reducing health inequalities*. Retrieved June 29, 2022, from <https://www.england.nhs.uk/publication/core20plus5-an-approach-to-reducing-health-inequalities-supporting-information/>

NHS England and NHS Improvement and the Local Government Association. (2021). *Thriving places: Guidance on the development of place-based partnerships as part of statutory integrated care systems*. Retrieved June 29, 2022 from <https://www.england.nhs.uk/wp->

[content/uploads/2021/06/B0660-ics-implementation-guidance-on-thriving-places.pdf](#)

NHS England Quality and Outcomes Framework. (2024). *QOF 2022-23 results*. Retrieved January 25, 2023, from <https://qof.digital.nhs.uk/>

NHS Finances. (2021). *The NHS budget and how it has changed*. The Kings Fund. <https://www.kingsfund.org.uk/projects/nhs-in-a-nutshell/nhs-budget>

NHS Providers. (2020). *State of the provider sector 2020: Survey findings*. <https://cdn.ps.emap.com/wp-content/uploads/sites/3/2020/10/State-of-the-NHS-provider-sector-October-2020.pdf>

NHSX. (2021). *Who we are*. Retrieved March 15, 2021, from <https://www.nhsx.nhs.uk/about-us/who-we-are/>

Nielsen, S. B., Lemire, S., & Tangsig, S. (2022). Unpacking context in realist evaluations: Findings from a comprehensive review. *Evaluation*, 28(1), 91-112. <https://doi.org/10.1177/13563890211053032>

Nilsen, P. (2015). Making sense of implementation theories, models and frameworks. *Implementation Science* : 15, 53. <https://doi.org/10.1186/s13012-015-0242-0>

Nilsen, E. S., Myrhaug, H. T., Johansen, M., Oliver, S., & Oxman, A. D. (2006). Methods of consumer involvement in developing healthcare policy and research, clinical practice guidelines and

patient information material. *The Cochrane Database of Systematic Reviews*, (3).

Noffsinger, E. B. (1999a). Increasing efficiency, accessibility, and quality of care through drop-in group medical appointments. *Group Practice Journal*, 48, 12-18.

Noffsinger, E. B. (1999b). Will drop-in group medical appointments (DIGMAs) work in practice. *Permanente Journal*, 3, 58-67.

Noffsinger, E. B. (2009). *Running group visits in your practice*. Springer.

Noffsinger, E. B., & Scott, J. C. (2000). Understanding today's group visit models. *Permanente Journal*, 4, 99-112.

Northern, A., Troughton, J., Hadjiconstantinou, M., Brough, C., Schreder, S., Stribling, B., Khunti, K., & Davies, M. (2021). The role of digital diabetes education (MyDESMOND) during the COVID-19 pandemic. *Diabetes & Primary Care*, 23(4), 97.

Nowell, L. (2015). Pragmatism and integrated knowledge translation: Exploring the compatibilities and tensions. *Nursing Open*, 2, 141-148.

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1). <https://doi.org/10.1177/1609406917733847>

Nuffield Department of Primary Care Health Sciences. (2024). *TOGETHER 2 study: Evaluating video and hybrid group consultations in general practice: Mixed methods, participatory*

study. University of Oxford. Retrieved April 9, 2024, from <https://www.phc.ox.ac.uk/research/groups-and-centres/interdisciplinary-research-in-health-sciences/together-2>

Núñez, D., Marino-Núñez, D., Staab, E. M., Dinh, T., Zhu, M., Wan, W., Schaefer, C. T., Campbell, A., Quinn, M. T., & Baig, A. A. (2022). Adapting in-person diabetes group visits to a virtual setting across federally qualified health centers. *Frontiers in Health Services*, 2, 961073. <https://doi.org/10.3389/frhs.2022.961073>

Ochieng N, T., Wilson, K., Derrick, C. J., & Mukherjee, N. (2018). The use of focus group discussion methodology: Insights from two decades of application in conservation. *Methods in Ecology and Evolution*, 9, 20–32.

Oeppen, R. S., Shaw, G., & Brennan, P. A. (2020). Human factors recognition at virtual meetings and video conferencing: How to get the best performance from yourself and others. *British Journal of Oral and Maxillofacial Surgery*, 58(6), 643-646.

Office for National Statistics. (2019). *Exploring the UK's digital divide*. <https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/articles/exploringtheuksdigitaldivide/2019-03-04#how-does-digital-exclusion-vary-with-age>

Office for National Statistics. (2020). *Internet access – households and individuals, Great Britain: 2020*. <https://www.ons.gov.uk/peoplepopulationandcommunity/house>

- Olayinka Ladehi, E. (2018). Multi-stakeholder engagement in health services research. *Journal of Comparative Effectiveness Research*, 7(6), 517-521. DOI: 10.2217/cer-2018-0026
- Omair, A. (2014). Sample size estimation and sampling techniques for selecting a representative sample. *Saudi Commission Journal of Health Specialities*, 2, 142-147. doi:10.4103/1658-600X.142783
- Onwuegbuzie, A. J. (2002). Positivists, post-positivists, post-structuralists, and post-modernists: Why can't we all get along? Towards a framework for unifying research paradigms. *Education*, 122(2), 513-530.
- Page, J., Broady, T., Kumar, S., & de Leeuw, E. (2022). Exploratory visuals and text in qualitative research interviews: How do we respond?. *International Journal of Qualitative Methods*, 21. <https://doi.org/10.1177/16094069221110302>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., McGuinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V. A., Whiting, P., & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *British Medical Journal*, 372, n71.

- Page, M. J., Shamseer, L., & Tricco, A. C. (2018). Registration of systematic reviews in PROSPERO: 30,000 records and counting. *Systematic Reviews*, 7(1), 32. <https://doi.org/10.1186/s13643-018-0699-4>
- Palys, T. (2008). Purposive sampling. In L. M. Given (Ed.), *The Sage Encyclopaedia of Qualitative Research Methods Vol 2*. (pp. 697-698). SAGE.
- Papoutsis, C., Colligan, G., Hagell, A., Hargreaves, D., Marshall, M., Vijayaraghavan, S., Greenhalgh, T., & Finer, S. (2019). Promises and perils of group clinics for young people living with diabetes: A realist review. *Diabetes Care*, 42(5), 705–712.
- Papoutsis, C., Hargreaves, D., Colligan, G., Hagell, A., Patel, A., Campbell-Richards, A., Viner, R. M., Vijayaraghavan, S., Marshall, M., Greenhalgh, T., & Finer, S. (2017). Group clinics for young adults with diabetes in an ethnically diverse, socioeconomically deprived setting (TOGETHER study): Protocol for a realist review, co-design and mixed methods, participatory evaluation of a new care model. *BMJ Open*, 7, 1-9.
- Papoutsis, C., Hargreaves, D., Hagell, A., Hounsome, N., Skirrow, H., Muralidhara, K., Colligan, G., Ferrey, A., Vijayaraghavan, S., Greenhalgh, T., & Finer, S. (2022). Implementation and delivery of group consultations for young people with diabetes in socioeconomically deprived, ethnically diverse settings. *BMC Medicine*, 20(1), 459. <https://doi.org/10.1186/s12916-022-02654-0>



Papoutsis, C., Hargreaves, D., Hagell, A., Hounscome, N., Skirrow, H., Muralidhara, K., Colligan, G., Vijayaraghavan, S., Greenhalgh, T., & Finer, S. (2022). *Group clinics for young adults living with diabetes in an ethnically diverse, socioeconomically deprived population: Mixed-methods evaluation*. National Institute for Health and Care Research.

Papoutsis, C., & Shaw, S. (2021). Video group consultations in general practice during the Covid-19 pandemic: Hype or reality?. <https://www.phc.ox.ac.uk/news/blog/video-group-consultations-in-general-practice-during-the-covid-19-pandemic-hype-or-reality?ref=image>.

Papoutsis, C., Shaw, S., & Greenhalgh, T. (2022). Implementing video group consultations in general practice during COVID-19: A qualitative study. *British Journal of General Practice*, 72(720), e483-e491.

Parker, A., & Tritter, J. (2006). Focus group method and methodology: Current practice and recent debate. *International Journal of Research & Method in Education*, 29, 23–37.

Parry, D., Salsberg, J., & Macaulay, A. C. (2009). *A guide to researcher and knowledge-user collaboration in health research*. [https://cihr-irsc.gc.ca/e/documents/Guide\\_to\\_Researcher\\_and\\_KU\\_Collaboration.pdf](https://cihr-irsc.gc.ca/e/documents/Guide_to_Researcher_and_KU_Collaboration.pdf)

Pastore, L. M., Rossi, A. M., & Tucker, A. L. (2014). Process improvements and shared medical appointments for

cardiovascular disease prevention in women. *Journal of the American Association of Nurse Practitioners*, 26(10), 555–561.  
<https://doi.org/10.1002/2327-6924.12071>

Patel, P. (2021). Successful use of virtual shared medical appointments for a lifestyle-based diabetes reversal program. *American Journal of Lifestyle Medicine*, 15(5), 506–509.  
<https://doi.org/10.1177/15598276211008396>

Patel, P., Boswell, C., & Eldridge, J. A. (2023). Telehealth vs. in-person shared medical appointments for an intensive therapeutic lifestyle change programme for patients with type 2 diabetes and pre-diabetes. *American Journal of Lifestyle Medicine*, 0(0).  
doi:[10.1177/15598276231189707](https://doi.org/10.1177/15598276231189707)

Patel, T. A., Johnston, C. A., Cardenas, V. J., & Vaughan, E. M. (2020). Utilizing telemedicine for group visit provider encounters: A feasibility and acceptability study. *International Journal of Diabetes & Metabolic Syndrome*, 1(1), 1–6.

Patton, M. Q. (2002). *Qualitative research and evaluation methods*. SAGE.

Pawson, R., Greenhalgh, T., Harvey, G., & Walshe, K. (2005). Realist review: A new method of systematic review designed for complex policy interventions. *Journal of Health Service Research Policy*, 1, 21–34.

Pawson, R. & Tilley, N. (1997). *Realistic evaluation*. SAGE.

Peat, G., Rodriguez, A., & Smith, J. (2019). Interpretative phenomenological analysis applied to healthcare research. *Evidence Based Nursing*, 22(1), 7-9.

Peat, J. (2002). *Health science research: A handbook of quantitative methods*. SAGE.

Peddle, M. (2022). Maintaining reflexivity in qualitative nursing research. *Nursing Open*, 9(6), 2908-2914. <https://doi.org/10.1002/nop2.999>

Pilbeam, C., Antheierens, S., Vanderslott, S., Tonkin-Crine, S., & Wanat, M. (2022). Methodological and ethical considerations when conducting qualitative interview research with healthcare professionals: Reflections and recommendations as a result of a pandemic. *International Journal of Qualitative Methods*, 21.

Pizzuti, A. G., Patel, K. H., McCreary, E. K., Heil, E., Bland, C. M., Chinaeke, E., Love, B. L., & Bookstaver, P. B. (2020). Healthcare practitioners' views of social media as an educational resource. *PloS One*, 15(2), e0228372. <https://doi.org/10.1371/journal.pone.0228372>

Polit, D. F., & Beck, C. T. (2006). The content validity index: Are you sure you know what's being reported? Critique and recommendations. *Research in Nursing & Health*, 29(5), 489–497.

Polit, D. F., & Beck, C. T. (2010). *Essentials of nursing research: Appraising evidence for nursing practice* (7th ed.). Lippincott Williams & Wilkins.

- Polit, D. F., Beck, C. T., & Hungler, B. P. (2001). *Essentials of nursing research: Methods, appraisal, and utilization* (5th ed.). Lippincott Williams & Wilkins.
- Ponto, J. (2015). Understanding and evaluating survey research. *Journal of the Advanced Practitioner in Oncology*, 6(2), 168–171.
- Ponto, J. A., Ellington, L., Mellon, S., & Beck, S. L. (2010). Predictors of adjustment and growth in women with recurrent ovarian cancer. *Oncology Nursing Forum*, 37(3), 357–364.
- Popay, J., Roberts, H., Sowden, A., Petticrew, M., Arai, L., Rodgers, M., Britten, N., Roen, K., & Duffy, S. (2006). *Guidance on the conduct of narrative synthesis in systematic reviews*. Retrieved January 10, 2022, from, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.178.3100&rep=rep1&type=pdf>
- Pope, C., May, A., & Gabbay, J. (2008). Chasing chameleons, chimeras and caterpillars: Evaluating an organizational innovation in the national health service. In L. McKee, E. Ferlie, & P. Hyde. (Ed.), *Organizing and reorganizing: Power and change in health care organizations*. (pp. 112-122). Palgrave Macmillan. [https://doi.org/10.1057/9780230583207\\_9](https://doi.org/10.1057/9780230583207_9)
- Pope, C., van Royen, P., & Baker, R. (2002). Qualitative methods in research on healthcare quality. *Quality and Safety in Health Care*, 11(2), 148-152.

Pourhoseingholi, M. A., Baghestani, A. R., & Vahedi, M. (2012). How to control confounding effects by statistical analysis. *Gastroenterology and Hepatology from Bed to Bench*, 5(2), 79–83.

Powell, R. L., & Biernacki, P. J. (2019). Shared medical appointments in preoperative joint replacement: Assessing patient and healthcare member satisfaction. *Journal for Healthcare Quality : Official Publication of the National Association for Healthcare Quality*, 41(5), 329–336.  
<https://doi.org/10.1097/JHQ.0000000000000205>

Pratt, J. H. (1907). The class method of treating consumption in the homes of the poor. *Journal of the American Medical Association*, 49, 755-759.

Primary Care Contracting. (2023). *What next for primary care networks*.  
<https://www.pcc-cic.org.uk/what-next-for-primary-care-networks/>

Prime Minister's Office. (2018). *PM speech on the NHS: 18 June 2018*.  
<https://www.gov.uk/government/speeches/pm-speech-on-the-nhs-18-june-2018>

Public Health England. (2019). *PHE strategy 2020 to 2025*. Retrieved April 27, 2021, from  
<https://www.gov.uk/government/publications/phe-strategy-2020-to-2025>

Punch, K. F. (2005). *Introduction to social research – quantitative & qualitative approaches*. SAGE.

Queen's Nursing Institute. (2020). *General practice nurse survey analysis* 2020. <https://www.qni.org.uk/wp-content/uploads/2021/01/GPN-Survey-Report-1.pdf>.

Queen's Nursing Institute. (2023). *Nursing in the digital age 2023: Using technology to support patients in the home*. <https://qni.org.uk/wp-content/uploads/2023/02/Nursing-in-the-Digital-Age-2023.pdf>

Ramanathan, R. (2008). *The role of organisational change management in offshore outsourcing of information technology services*. Universal Publishers.

Ramdas, K., & Darzi, A. (2017). Adopting innovations in care delivery – the case of shared medical appointments. *The New England Journal of Medicine*. 376, 1105-1107.

Ramdas, K., & Swaminathan, S. (2021). Patients could share virtual medical appointments for better access to telemedicine. *Nature Medicine*, 27, 14–16.

Raymond, J. K., Berget, C. L., Driscoll, K. A., Ketchum, K., Cain, C., & Fred Thomas, J. F. (2016). CoYoT1 clinic: Innovative telemedicine care model for young adults with type 1 diabetes. *Diabetes Technology & Therapeutics*, 18(6), 385–390. <https://doi.org/10.1089/dia.2015.0425>

Redmoor Health. (2024). *Video group clinics*. Retrieved June 25, 2024, from <https://www.redmoorhealth.co.uk/video-group-clinics/>

- Reed, S. C., Partridge, A. H., & Nekhlyudov, L. (2015). Shared medical appointments in cancer survivorship care: A review of the literature. *Journal of Oncology Practice*, 11(1), 6-11.
- Reid, M. W., Krishnan, S., Berget, C., Cain, C., Thomas, J. F., Klingensmith, G. J., & Raymond, J. K. (2018). CoYoT1 clinic: Home telemedicine increases young adult engagement in diabetes care. *Diabetes Technology & Therapeutics*, 20(5), 370–379. <https://doi.org/10.1089/dia.2017.0450>
- Renjith, V., Yesodharan, R., Noronha, J. A., Ladd, E., & George, A. (2021). Qualitative methods in health care research. *International Journal of Preventive Medicine*, 12(1), 20.
- Rethlefsen, M. L., Kirtley, S., Waffenschmidt, S., Ayala, A. P., Moher, D., Page, M. J., & Koffel, J. B. (2021). PRISMA-S: An extension to the PRISMA Statement for reporting literature searches in systematic reviews. *Systematic Reviews*, 10(1), 39.
- Ridge, D., Bullock, L., Causer, H., Fisher, T., Hider, S., Kingstone, T., Gray, L., Riley, R., Smyth, N., Silverwood, V., Spiers, J., & Southam, J. (2023). Imposter participants' in online qualitative research, a new and increasing threat to data integrity?. *Health Expectations*, 26, 941-944.
- Ritchie, J., & Lewis, J. (2003). *Qualitative research practice: A guide for social science students and researchers*. SAGE.
- Ritchie, N. D., Gurfinkel, D., Sajatovic, M., Carter, M., Glasgow, R. E., Holtrop, J. S., Waxmonsky, J. A., & Kwan, B. M. (2023). A multi-method study of patient reach and attendance in a pragmatic trial

of diabetes shared medical appointments. *Clinical Diabetes*, 41(4), 526-538.

Robson, C. (2002). *Real world research: A resource for social scientists and practitioner-researchers* (2nd ed.). Blackwell Publishers Ltd.

Ross, J., Stevenson, F., Dack, C., Pal, K., May, C., Michie, S., Barnard, M., & Murray, E. (2018). Developing an implementation strategy for a digital health intervention: An example in routine healthcare. *BMC Health Services Research*, 18(1), 794. <https://doi.org/10.1186/s12913-018-3615-7>

Roy, J., Jain, R., Golamari, R., Vunnam, R., & Sahu, N. (2020). COVID-19 in the geriatric population. *International Journal of Geriatric Psychiatry*, 35, 1437-1441.

Royal College of General Practitioners. (2018). *Spotlight on the 10 high impact actions*. <https://www.rcgp.org.uk/-/media/Files/Primary-Care-Development/RCGP-spotlight-on-the-10-high-impact-actions-may-2018.ashx?la=en>

Royal College of Nursing. (n.d). *Improving digital literacy*. Health Education England.

Rubinger, L., Gazendam, A., Ekhtiari, S., Nucci, N., Payne, A., Johal, H., Khanduja, V., & Bhandari, M. (2020). Maximizing virtual meetings and conferences: A review of best practices. *International Orthopaedics*, 44(8), 1461–1466.



- Ruppar, T. (2020). Meta-analysis: How to quantify and explain heterogeneity?. *European Journal of Cardiovascular Nursing*, 19(7), 646-652.
- Rushton, S. (2023). Group consultations for menopause: A way forward if we can encourage women to join?. *Post Reproductive Health*, 29(3), 614-648.
- Russell-Westhead, M., O'Brien, N., Goff, I., Coulson, E., Pape, J. & Birrell, F. (2020). Mixed methods study of a new model of care for chronic disease: Co-design and sustainable implementation of group consultations into clinical practice. *Rheumatology Advances in Practice*, 4(1), rkaa003.
- Sadikot, S. M., Das, A. K., Wilding, J., Siyan, A., Zargar, A. H., Saboo, B., Aravind, S. R., Sosale, B., Kalra, S., Vijayakumar, G., Manojan, K. K., Maheshwari, A., Panda, J. K., Banerjee, S., Chawla, R., Vasudevan, S. P., Sundar, O. S. S., & Kesavadev, J. (2017). Consensus recommendations on exploring effective solutions for the rising cost of diabetes. *Diabetes & Metabolic Syndrome*, 11(2), 141–147.
- Sadur, C. N., Moline, N., Costa, M., Michalik, D., Mendlowitz, D., Roller, S., Watson, R., Swain, B. E., Selby, J. V., & Javorski, W. C. (1999). Diabetes management in a health maintenance organization: Efficacy of care management using cluster visits. *Diabetes Care*, 22(12), 2011–2017. <https://doi.org/10.2337/diacare.22.12.2011>

- Safdar, N., Abbo, L. M., Knobloch, M. J., & Seo, S. K. (2016). Research methods in healthcare epidemiology: Survey and qualitative research. *Infection Control and Hospital Epidemiology*, 37(11), 1272–1277.
- Salmon, P., Peters, S., Rogers, A., Gask, L., Clifford, R., Iredale, W., Dowrick, C., & Morriss, R. (2007). Peering through the barriers in GPs' explanations for declining to participate in research: The role of professional autonomy and the economy of time. *Family Practice*, 24(3), 269-275.
- Sanchez, I. (2011). Implementation of a diabetes self-management education program in primary care for adults using shared medical appointments. *The Diabetes Educator*, 37(3), 381–391. <https://doi.org/10.1177/0145721711401667>
- Sandelowski, M. (1993). Rigor or rigor mortis: The problem of rigor in qualitative research revisited. *ANS: Advances in Nursing Science*, 16(2), 1–8.
- Sandelowski, M. (2014). Unmixing mixed-methods research. *Research in Nursing & Health*, 37(1), 3–8. <https://doi.org/10.1002/nur.21570>
- Sandelowski, M., Voils, C. I., & Knafl, G. (2009). On quantitizing. *Journal of Mixed Methods Research*, 3(3), 208–222. <https://doi.org/10.1177/1558689809334210>
- Saunders, B., Chudyk, A., Protheroe, J., Cooper, V., Bartlam, B., Birkinshaw, H., Foster, N. E., & Hill, J. C. (2022). Risk-based stratified primary care for common musculoskeletal pain

presentations: qualitative findings from the STarT MSK cluster randomised controlled trial. *BMC Primary Care*, 23(1), 326. <https://doi.org/10.1186/s12875-022-01924-3>

Saunders, B., Foster, N. E., Hill, J. C., Sowden, G., Evans, N. Bishops, A., Stynes, S., Dziedzic, K., Campbell, L., Rankin, G., Salmon, P., & Wynne-Jones, G. (2022). First contact practitioners' (FCPs) and general practitioners perceptions towards FCPs delivering vocational advice to patients with musculoskeletal conditions: A qualitative investigation of the implementation potential of the I-SWAP initiative. *Journal of Occupational Rehabilitation*, 32, 147-155.

Saunders, B., Konstantinou, K., Artus, M., Foster, N. E., & Bartlam, B. (2020). Patients' and clinicians' perspectives on a 'fast-track' pathway for patients with sciatica in primary care: Qualitative findings from the SCOPiC stratified care trial. *BMC Musculoskeletal Disorders*, 21, 469.

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., & Jinks, C. (2018). Saturation in qualitative research: Exploring its conceptualization and operationalization. *Quality & Quantity*, 52(4), 1893–1907. <https://doi.org/10.1007/s11135-017-0574-8>

Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research methods for business students* (4th ed.). Pearson Education Limited.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5<sup>th</sup> ed.). Pearson Education Limited.

- Savin-Baden, M., & Major, C. H. (2013). *Qualitative research: The essential guide to theory and practice*. Routledge.
- Savolainen, J., Casey, P. J., McBrayer, J. P., & Schwerdtle, P. N. (2023). Positionality and its problems: Questioning the value of reflexivity statements in research. *Perspectives on Psychological Science*, 18(6), 1331-1338. <https://doi.org/10.1177/17456916221144988>
- Schroeder, D., Luig, T., Finch, T.L., Beesoon, S., & Campbell-Scherer, D. L. (2022). Understanding implementation context and social processes through integrating normalization process theory (NPT) and the consolidated framework for implementation research (CFIR). *Implementation Science Communications*, 3, 13.
- Scott, E., Swaithe, L., Wynne-Jones, G., & Finney, A. (2021). Embedding group consultations into practice: Perceptions of the general practice workforce. *Practice Nurse*, 12-16.
- Scott, E., Swaithe, L., Wynne-Jones, G., & Finney, A. (2023). Describing the use and uptake of video group consultations in general practice by healthcare professionals during the COVID-19 pandemic. *Primary Healthcare*, 34(2). doi: 10.7748/phc.2023.e1801
- Scott, J., Gade, G., McKenzie, M., & Venohr, I. (1998). Cooperative health care clinics: A group approach to individual care. *Geriatrics*, 53(5), 68–82.

Seager, M. J., Egan, R. J., Meredith, H. E., Bates, S. E., Norton, S. A., & Morgan, J. D. (2012). *Obesity Surgery*, 22, 641-645.

Sedgwick, P. (2012). What is recall bias?. *British Medical Journal*, 344.

Sedgwick, P. (2014). Cross sectional studies: Advantages and disadvantages. *British Medical Journal*, 348.

Sedgwick, P. (2015). Bias in observational study designs: Cross-sectional studies. *British Medical Journal*, 350.

Seesing, F. M., Zijlstra, W., Pasmans, S. G. M. A., L'Hoir, M. P., Drost, G., van Engelen, B. G. M., & van der Wilt, G. J. (2019). Group medical appointments for people with physical illness. *The Cochrane Database of Systematic Reviews*, (7), CD010721. <https://doi.org/10.1002/14651858.CD010721.pub2>

Semyonov-Tal, K., & Lewin-Epstein, N. (2021). The importance of combining open-ended and closed-ended questions when conducting patient satisfaction surveys in hospitals. *Health Policy OPEN*, 2.

Setia, M. S. (2016). Methodology series module 3: Cross-sectional studies. *Indian Journal of Dermatology*, 61(3), 261–264.

Shaghghi, A., Bhopal, R. S., & Sheikh, A. (2011). Approaches to recruiting 'hard-to-reach' populations into re-search: A review of the literature. *Health Promotion - Perspectives*, 1(2), 86–94.

Shah, M. K., Wyatt, L. C., Gibbs-Tewary, C., Zanolwiak, J. M., Mammen, S., & Islam, N. (2024). A culturally adapted, telehealth, community health worker intervention on blood pressure control

among south asian immigrants with type ii diabetes: Results from the DREAM Atlanta intervention. *Journal of General Internal Medicine*, 39(4), 529-539.

Shah, T., Patel-Teague, S., Kroupa, L., Meyer, A. N. D., & Singh, H. (2019). Impact of a national QI programme on reducing electronic health record notifications to clinicians. *BMJ Quality & Safety*, 28(1), 10–14. <https://doi.org/10.1136/bmjqs-2017-007447>

Shannon-Baker, P. (2016). Making paradigms meaningful in mixed-methods research. *Journal of Mixed Methods Research*, 10(4), 319-334. <https://doi.org/10.1177/1558689815575861>

Shapira, S., Yeshua-Katz, D., Cohn-Schwartz, E., Aharonson-Daniel, L., Sarid, O., & Clarfield, A. M. (2021). A pilot randomized controlled trial of a group intervention via Zoom to relieve loneliness and depressive symptoms among older persons during the COVID-19 outbreak. *Internet Interventions*, 24, 100368. <https://doi.org/10.1016/j.invent.2021.100368>

Shaw, S. E., Hughes, G., Wherton, J., Moore, L., Rosen, R., Papoutsis, C., Rushforth, A., Morris, J., Wood, G. W., Faulkner, S., & Greenhalgh, T. (2021). Achieving spread, scale up and sustainability of video consulting services during the Covid-19 pandemic? Findings from a comparative case study of policy implementation in England, Wales, Scotland and Northern Ireland. *Frontiers in Digital Health*, 3, 754319.

- Shibuya, K., Pantalone, K. M., & Burguera, B. (2018). Virtual shared medical appointments: A novel tool to treat. *Endocrine Practice*, 24(12), 1108-1109.
- Shoghi, M., Sajadim, M., Oskuie, F., Dehnad, A., & Borimnejad, L. (2019). Strategies for bridging the theory-practice gap from the perspective of nursing experts. *Heliyon*, 5(9), 1-6.
- Shorten, A., & Smith, J. (2017). Mixed methods research: Expanding the evidence base. *Evidence-Based Nursing*, 20(3), 74–75. <https://doi.org/10.1136/eb-2017-102699>
- Silman, A. J., & MacFarlane, G. J. (2002). *Epidemiological studies: A practical guide*. Cambridge University Press.
- Silverio, S. A., Sheen, K. S., Bramante, A., Knighting, K., Koops, T. U., Montgomery, E., November, L., Soulsby, L. K., Stevenson, J. H., Watkins, M., Easter, A., & Sandall, J. (2022). Sensitive, challenging, and difficult topics: Experiences and practical considerations for qualitative researchers. *International Journal of Qualitative Methods*, 21. <https://doi.org/10.1177/16094069221124739>
- Sim, J., & Wright, C. (2000). *Research in health care*. Nelson Thornes.
- Skelly, A. C., Dettori, J. R., & Brodt, E. D. (2012). Assessing bias: The importance of considering confounding. *Evidence-Based Spine-Care Journal*, 3(1), 9–12.
- Smith, H., Budworth, L., Grindy C., Hague, I., Hamer, N., Kislov, R., van der Graaf, P., & Langley, P. (2022). Co-production practice and

future research priorities in United Kingdom-funded applied health research: A scoping review. *Health Research Policy Systems*, 20, 36, 1-43.

Smith, S. P., & Elias, B. L. (2016). Shared medical appointments: Balancing efficiency with patient satisfaction and outcomes. *The American Journal of Managed Care*, 22(7), 491–494.

Smithson, J. (2000). Using and analysing focus groups: Limitations and possibilities. *International Journal of Social Research Methodology*, 3, 103-119.

Staley, K. (2009). *Exploring impact: Public involvement in the NHS, public health and social care research*. INVOLVE.

Staller, K. M. (2021). Big enough? Sampling in qualitative inquiry. *Qualitative Social Work*, 20(4), 879-904.

Stalmeijer, R. E., Brown, M. E. L., & O'Brien, B. C. (2024). How to discuss transferability of qualitative research in health professions education. *The Clinical Teacher*, e13762. <https://doi.org/10.1111/tct.13762>

Staniszewska, S., Brett, J., Simera, I., Seers, K., Mockford, C., Goodlad, S., Altman, D. G., Moher, D., Barber, R., Denegri, S., Entwistle, A., Littlejohns, P., Morris, C., Suleman, R., Thomas, V., & Tysall, C. (2017). GRIPP2 reporting checklists: Tools to improve reporting of patient and public involvement in research. *BMJ (Clinical research ed.)*, 358, j3453. <https://doi.org/10.1136/bmj.j3453>



Steinsbekk, A., Rygg, L. Ø., Lisulo, M., Rise, M. B., & Fretheim, A. (2012). Group based diabetes self-management education compared to routine treatment for people with type 2 diabetes mellitus. A systematic review with meta-analysis. *BMC Health Services Research*, 12, 213. <https://doi.org/10.1186/1472-6963-12-213>

Stenbacka, C. (2001), Qualitative research requires quality concepts of its own. *Management Decision*, 39(7), 551-555.

Stemler, S. E. (2015). Content analysis. *Emerging trends in the social and behavioural sciences: An Interdisciplinary, Searchable, and Linkable Resource*, 1-14.

Stern, C., Lizarondo, L., Carrier, J., Godfrey, C., Rieger, K., Salmond, S., Apóstolo, J., Kirkpatrick, P., & Loveday, H. (2020). Methodological guidance for the conduct of mixed methods systematic reviews. *JBIR Evidence Synthesis*, 18(10), 2108–2118. <https://doi.org/10.11124/JBISRIR-D-19-00169>

Stevens, J. A., Dixon, J., Binns, A., Morgan, B., Richardson, J., & Egger, G. (2016). Shared medical appointments for aboriginal and Torres strait islander men. *Australian Family Physician*, 45(6), 425–429.

Stewart, S., Pyne, Y., & McMillan, V. (2021). Augmented consulting: The future of primary care?. *British Journal of General Practice Open*, 1-3.

Stoll, C. R. T., Izadi, S., Fowler, S., Green, P., Suls, J., & Colditz, G. A. (2019). The value of a second reviewer for study selection in

systematic reviews. *Research Synthesis Methods*, 10(4), 539–545. <https://doi.org/10.1002/jrsm.1369>

Sutton, A., Booth, A., & Papaioannou, D. (2016). *Systematic approaches to a successful literature review*. SAGE.

Swaithes, L., Dziedzic, K., Finney, A., Cottrell, E., Jinks, C., Mallen, C., Currie, G., & Paskins, Z. (2020). Understanding the uptake of a clinical innovation for osteoarthritis in primary care: A qualitative study of knowledge mobilisation using the i-PARIHS framework. *Implementation Science*, 15, 1-19. doi: 10.1186/s13012-020-01055-2.

Swaithes, L., Paskins, Z., Duffy, H., Evans, N., Mallen, C., Dziedzic, K., & Finney, A. (2021). Experience of implementing and delivering group consultations in UK general practice: A qualitative study. *The British Journal of General Practice*, 71(707), e413–e422. <https://doi.org/10.3399/BJGP.2020.0856>

Swaithes, L., Paskins, Z., Finney, A., Walsh, N., Skrybant, M., Mallen, C., & Dziedzic, K. (2024). Optimising the implementation of evidence-based osteoarthritis guidelines in primary care: Development of a knowledge mobilisation toolkit. *Osteoarthritis and Cartilage*, 32(5), 612-629. <https://doi.org/10.1016/j.joca.2024.01.003>

Swaithes, L., Paskins, Z., Quicke, J. G., Stevenson, K., Fell, K., & Dziedzic, K. (2023). Optimising the process of knowledge mobilisation in communities of practice: Recommendations from a (multi-method) qualitative study. *Implementation Science*

*Communications*, 4(1), 11. <https://doi.org/10.1186/s43058-022-00384-1>

Sy, M., O'Leary, N., Nagraj, S., El-Awaisi, A., O'Carroll, V., & Xyrichis, A. (2020). Doing interprofessional research in the COVID-19 era: A discussion paper. *Journal of Interprofessional Care*, 34(5), 600–606.

Taherdoost, H. (2016). Sampling methods in research methodology: How to choose a sampling technique for research. *International Journal of Academic Research in Management*, 5, 18-27. doi:10.2139/ssrn.3205035

Tang, M. Y., Graham, F., O'Donnell, A., Richmond, C., Beyer, F., Sniehotta, F. F., & Kaner, E. (2023). *A systematic review of shared medical appointments delivered in primary care for patients with one or more long-term conditions to improve health outcomes and reduce healthcare service use*. Preprint available at: <https://www.medrxiv.org/content/10.1101/2022.03.24.22272866v1.full>.

Tariq, S., & Woodman, J. (2013). Using mixed methods in health research. *JRSM Short Reports*, 4(6), 2042533313479197. <https://doi.org/10.1177/2042533313479197>

Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. SAGE.

Teddlie, C., & Tashakkori, A. (2010). Overview of contemporary issues in mixed methods research. In A. Tashakkori & C. Teddlie (Ed.),

*The sage handbook of mixed methods in social & behavioural research* (2<sup>nd</sup> ed.) (pp.1-41). SAGE.

The Kings Fund. (2021). *Integrated care systems explained: Making sense of systems, places and neighbourhoods*.  
<https://www.kingsfund.org.uk/publications/integrated-care-systems-explained#what-are-ICSs>

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, 8, 45. <https://doi.org/10.1186/1471-2288-8-45>

Thompson-Lastad, A., & Gardiner, P. (2020). Group medical visits and clinician wellbeing. *Global Advances in Health and Medicine*, 9, 2164956120973979.  
<https://doi.org/10.1177/2164956120973979>

Thornton J. (2020). Covid-19: How coronavirus will change the face of general practice forever. *British Medical Journal (Clinical research ed.)*, 368, m1279. <https://doi.org/10.1136/bmj.m1279>

Thunberg, S., & Arnell, L. (2022). Pioneering the use of technologies in qualitative research – A research review of the use of digital interviews. *International Journal of Social Research Methodology*, 25(6), 757-768.

Tierney, S., Kislov, R., & Deaton, C. (2014). A qualitative study of a primary-care based intervention to improve the management of patients with heart failure: The dynamic relationship between facilitation and context. *BMC Family Practice*, 15, 1-10.

Tkachenko, E. Refat, M, A., Balzano, T. Maloney, M. E., & Harris, J. E.

(2019). Patient satisfaction and physician productivity in shared medical appointments for vitiligo. *Journal of American Academy of Dermatology*, 81(5), 1150-1156.

Tokuda, L., Lorenzo, L., Theriault, A., Taveira, T. H., Marquis, L., Head,

H., Edelman, D., Kirsh, S. R., Aron, D. C., & Wu, W. C. (2016).

The utilization of video-conference shared medical appointments in rural diabetes care. *International Journal of Medical Informatics*, 93, 34–41.

<https://doi.org/10.1016/j.ijmedinf.2016.05.007>

Tončinić, S., de Wildt-Liesveld, R., & Vrijhoef, H, J. (2020). Evaluation

of a digital platform that engages stakeholders in the co-creation of healthcare innovations: A mixed-methods study. *International Journal of Care Coordination*, 23(1), 33-42.

Torrentira, M. C. (2020). Online data collection as adaptation in

conducting quantitative and qualitative research during the covid-19 pandemic. *European Journal of Education Studies*, 7(11), 78-87.

Tran, M. C., Labrique, A. B., Mehra, S., Ali, H., Shaikh, S., Mitra, M.,

Christian, P., & West, K., Jr. (2015). Analyzing the mobile "digital divide": Changing determinants of household phone ownership over time in rural bangladesh. *JMIR mHealth and uHealth*, 3(1), e24. <https://doi.org/10.2196/mhealth.3663>

UK Knowledge Mobilisation Forum. (2022). *About*. Retrieved January

21, 2022, from <https://knowledgemobilisation.net/>

University of California Department of Psychiatry and Behavioral Sciences. (2021). *Telemedicine project*. Retrieved October 22, 2021, from <https://psych.ucsf.edu/telemedicine-project>

Vaismoradi, M., Turunenm H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing and Health Sciences*, 15, 398-405.

Varpio, L., Ajjawi, R., Monrouxe, L. V., O'Brien, B. C., & Rees, C. E. (2017). Shedding the cobra effect: Problematising thematic emergence, triangulation, saturation and member checking. *Medical Education*, 51(1), 40–50. <https://doi.org/10.1111/medu.13124>

Vasconcelos, A. C., Martins, J. T., Ellis, D., & Fontinha, E. (2019). Absorptive capacity: A process and structure approach. *Journal of Information Science*, 45(1), 68-83. <https://doi.org/10.1177/0165551518775306>

Vasileiou, K., Barnett, J., Thorpe, S., & Young, T. (2018). Characterising and justifying sample size sufficiency in interview-based studies: Systematic analysis of qualitative health research over a 15-year period. *BMC Medical Research Methodology*, 18, 148.

Vears, D. F., & Gillam, L. (2022). Inductive content analysis: A guide for beginning qualitative researchers. *Focus on Health Professional Education: A Multi-Professional Journal*, 23(1), 111–127.

Veginadu, P., Calache, H., Gussy, M., Pandian, A., & Masood, M. (2022). An overview of methodological approaches in systematic

reviews. *Journal of Evidence-Based Medicine*, 15(1), 39–54.  
<https://doi.org/10.1111/jebm.12468>

Verhoef, N. C., & Blomme, R. J. (2022). Burnout among general practitioners: A systematic quantitative review of the literature on determinants of burnout and their ecological value. *Frontiers in Psychology*, 13, 1064889.  
<https://doi.org/10.3389/fpsyg.2022.1064889>

Vindrola-Padros, C. (2021). *Doing rapid qualitative research*. SAGE.

Vindrola-Padros, C., Andrews, L., Dowrick, A., Djellouli, N., Fillmore, H., Gonzalez, E. B., Javadi, D., Lewis-Jackson, S., Manby, L., Mitchinson, L., Symmons, S. M., Martin, S., Regenold, N., Robinson, H., Sumray, K., Singleton, G., Synversen, A., Vanderslott, S., & Johnson, G. (2020). Perceptions and experiences of healthcare workers during the COVID-19 pandemic in the UK. *BMJ Open*, 10(11), e040503.

von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., Vandenbroucke, J. P., & STROBE Initiative (2007). Strengthening the reporting of observational studies in epidemiology (STROBE) statement: Guidelines for reporting observational studies. *BMJ (Clinical research ed.)*, 335(7624), 806–808.

De Vries, B., Darling-Fisher, C., Thomas, A. C., & Belanger-Shugart, E. B. (2008). Implementation and outcomes of group medical appointments in an outpatient specialty care clinic. *Journal of the*

*American Academy of Nurse Practitioners*, 20(3), 163–169.  
<https://doi.org/10.1111/j.1745-7599.2007.00300.x>

Wadsworth, K. H., Archibald, T. G., Payne, A. E., Cleary, A. K., Haney, B. L., & Hoverman, A. S. (2019). Shared medical appointments and patient-centred experience: A mixed-methods systematic review. *BMC Medical Practice*, 20(1), 97.

Wagner, E. H., Austin, B. T., Davis, C., Hindmarsh, M., Schaefer, J., & Bonomi, A. (2001). Improving chronic illness care: Translating evidence into action. *Health Affairs (Project Hope)*, 20(6), 64–78.

Walter, M. M., Sirard, P., Nero, H., Hörder, H., Dahlberg, L. E., Tvetter, A. T., Kieken, I., & Kiadaliri, A. (2023). Digitally delivered education and exercises for patients with hand osteoarthritis – An observational study. *Musculoskeletal Care*, 12(4), 1154-1160.

Waltz, T. J., Powell, B. J., Fernández, M. E., Abadie, B., & Damschroder, L. J. (2019). Choosing implementation strategies to address contextual barriers: Diversity in recommendations and future directions. *Implementation Science*, 14, 42.

Wang, X., & Cheng, Z. (2020). Cross-sectional studies: Strengths, weaknesses, and recommendations. *Chest*, 158(1S), S65–S71.

Wang, X., & Kattan, M. W. (2020). Cohort studies: Design, analysis, and reporting. *Chest*, 158(1), S72-S78.



Ward, V. (2017). Why, whose, what and how? A framework for knowledge mobilisation. *Evidence & Policy*, 13, 477-497.

Watt, T., Kelly, E., & Fisher, R. (2021). *Use of primary care during the COVID-19 pandemic: May 2021 update – patient-level data analysis of the impact of COVID-19 on primary care activity in England*. <https://www.health.org.uk/news-and-comment/charts-and-infographics/use-of-primary-care-during-the-covid-19-pandemic-may-2021>

Weaver, K. (2018). Pragmatic paradigm. In B. B. Frey (ed.), *The Sage Encyclopaedia of Educational Research, Measurement and Evaluation Vol 3* (pp. 1286-1288). SAGE.

Weaver, K., & Olson, J. K. (2006). Understanding paradigms used for nursing research. *Journal of Advanced Nursing*, 53(4), 459–469.

Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS Quarterly*, 26(2), 13-23.

Weinger, K. (2003). Group medical appointments in diabetes care: Is there a future?. *Diabetes Spectrum*, 16,104–7.

Weiss, D., Rydland, H.T., Øversveen, E., Jensen, M. R., Solhaug, S., & Krokstad, S. (2018). Innovative technologies and social inequalities in health: A scoping review of the literature. *PLOS ONE*, 13(4), 1-20.

White, A., Richardson, M., Richmond, P., Freedman, J., & Bevis, M. (2012). Group acupuncture for knee pain: Evaluation of a cost-

saving initiative in the health service. *Acupuncture Medicine*, 30, 170-175.

Winchester, C. L., & Salji, M. (2016). Writing a literature review. *Journal of Clinical Urology*, 9(5), 308-312.  
doi:10.1177/2051415816650133

Wong, S. H., Barrow, N., Hall, K., Gandesha, P., & Manson, A. (2021). The effective management of idiopathic intracranial hypertension delivered by in-person and virtual group consultations: Results and reflections from a phase one service delivery. *Neuro-Ophthalmology (Aeolus Press)*, 45(4), 246–252.  
<https://doi.org/10.1080/01658107.2021.1887287>

Woolf, S. H. (2008). The meaning of translational research and why it matters. *JAMA*, 299(2), 211-213.

World Health Organisation. (2020). *Global strategy on digital health 2020-2025*.  
[https://www.who.int/docs/default-source/documents/g4dhdaa2a9f352b0445bafbc79ca799dce4d.pdf?sfvrsn=f112ede5\\_68](https://www.who.int/docs/default-source/documents/g4dhdaa2a9f352b0445bafbc79ca799dce4d.pdf?sfvrsn=f112ede5_68)

World Health Organisation. (2021). *Health policy*.  
<https://www.euro.who.int/en/health-topics/health-policy/health-policy>

Wu, M-J., Zhao, K., & Fils-Aime, F. (2022). Response rates of online surveys in published research: A meta-analysis. *Computers in Human Behavior Reports*, 7, 1-11.

Yalom, I. D. (1995). *The theory and practice of group psychotherapy* (4<sup>th</sup> ed.). Basic Books.

Yip, S. Y. (2023). Positionality and reflexivity: Negotiating insider-outsider positions within and across cultures. *International Journal of Research & Method in Education*, 47(3), 222–232. <https://doi.org/10.1080/1743727X.2023.2266375>

Yourman, L., Pollner, A., Khatibi, J., Ramos, V., Melkote, V., O-Gorman, A., Begler, E. & Lum, H. D. (2024). Feasibility and effectiveness of virtual group advance care planning visits during the Covid-19 pandemic. *American Journal of Hospice and Palliative Medicine*, 0(0), 1-8. doi:[10.1177/10499091241233687](https://doi.org/10.1177/10499091241233687)

# Appendices

---

## List of Appendices

---

Appendix 1: Group consultations publication – Practice Nurse (Scott et al., 2021)

Appendix 2: Primary Healthcare cross-sectional survey publication (Scott et al., 2023)

Appendix 3: Semi-Structured Interview Study Conference Presentation

Appendix 4: Cross-Sectional Survey Poster

Appendix 5: PROSPERO registration

Appendix 6: Systematic Review Search Strategy for each database

Appendix 7: PRISMA-S: An Extension to the PRISMA Statement for Reporting Literature Searches in Systematic Reviews (Rethlefsen, Kirtley, Waffenschmidt, Ayala, Moher, Page & Koffel, 2021)

Appendix 8: Reasons for the exclusion of studies in the systematic review

Appendix 9: Example of textual description of studies at quality appraisal stage

Appendix 10: PRISMA Checklist for the reporting of Systematic Reviews (Page et al., 2021)

Appendix 11: Textual description of studies included in systematic review

Appendix 12: Tabulation of studies included in systematic review

Appendix 13: Identification of key findings for narrative synthesis

Appendix 14: Groupings and clusters of key findings for systematic review

Appendix 15: Example of systematic review reflexive journal

Appendix 16: Example of thesis methods reflexive journal

Appendix 17: Example of GANTT chart

Appendix 18: Reflexivity diary during the semi-structured interview study

Appendix 19: Positionality statement for semi-structured interview study

Appendix 20: Cross-sectional survey study – Participant Information Sheet and Invitation Letter

Appendix 21: Recruitment advert for cross-sectional survey

Appendix 22: Cross-sectional survey – In built consent form

Appendix 23: SAG PhD Briefing and Agenda for Participants

Appendix 24: SAG Meeting for cross-sectional survey (Presentation)

Appendix 25: GRIPP2 report checklist to improve reporting of patient and public involvement in research (short form) (Staniszewska et al., 2017)

Appendix 26: Methods used for stakeholder engagement to inform the cross-sectional survey

Appendix 27: Cross-sectional survey questionnaire

Appendix 28: Example of content analysis coding sheet

Appendix 29: STROBE checklist for reporting on cross-sectional studies (von Elm et al., 2007)

Appendix 30: Example of cross-sectional survey reflexive journal

Appendix 31: Cross-sectional survey ethical approval

Appendix 32: NIHR 'Do I need NHS REC review?'

Appendix 33: Semi-structured interview study – Participant Information Sheet, Invitation Email and Invitation Letter

Appendix 34: HCP semi-structured interview consent form

Appendix 35: Recruitment advert for semi-structured interview study

Appendix 36: Interview topic guide

Appendix 37: SAG Meeting for interviews (GPN evidence-Based Practice Group) (presentation)

Appendix 38: Methods used for stakeholder engagement to inform the semi-structured interview survey

Appendix 39: Examples of RTA memos/'new comment' function

Appendix 40: Example of Reflexive Thematic Analysis coding spreadsheet

Appendix 41: Reasons for clustering of codes

Appendix 42: Mapping of central organising concepts and corresponding codes

Appendix 43: Final themes and subthemes with examples of quotes

Appendix 44: Semi-structured interview ethical approval

Appendix 45: Example of semi-structured interview study reflexive journal

Appendix 46: Interview participant practice demographics

Appendix 47: Categorisation of interview participants responses

Appendix 48: Development of topic guide

Appendix 49: Key discussion points from LINK meeting for semi-structured interview study

Appendix 50: Semi-structured interview study – Patient and public involvement and engagement meeting (LINK group) (presentation)

Appendix 51: SAG Meeting for cross-sectional survey (Agenda)

Appendix 52: Semi-structured interview study – Patient and public involvement and engagement meeting (RUG group) (presentation)

Appendix 53: Semi-structured interview study – Patient and public involvement and engagement meeting (RUG group) (meeting notes)

Appendix 54: SAG Meeting for cross-sectional survey (Field notes)

Appendix 55: SAG Meeting for cross-sectional survey (Invitation Letter)

ESSENTIALS

## Embedding group consultations into practice

# Perceptions of the general practice workforce

Group consultations are to be 'championed' to address growing concerns facing primary care general practice, but what are the barriers, facilitators and key roles required in setting up and delivering this model of care, according to the experiences of healthcare professionals?

### ELEANOR SCOTT

RN, BSc (Hons), MSc  
PhD student\*

### DR LAURA SWAITHES

BSc (Hons) (Physiotherapy), MA PhD  
Knowledge Mobilisation Research Fellow<sup>b</sup>

### DR GWENLIAN WYNNE-JONES

RN Dip, BSc (Hons) PhD  
Director of Research  
Reader in Epidemiology and Clinical Trials<sup>a</sup>

### DR ANDREW FINNEY

RN, Dip, BSc (Hons), PhD  
Senior Lecturer of Nursing\*

\* School of Nursing and Midwifery,  
Keele University

<sup>b</sup> School of Medicine, Keele University

The increased drive to enhance service provision has accelerated pressures across the general practice landscape, with the general practice workforce described as at 'breaking point'.<sup>1</sup> The increasing workload over the last decade has not been adequately matched with funding, staff, or time, which has led to staff 'burnout' and a recruitment and retention crisis.<sup>1</sup> More recently, *The NHS Long Term Plan*<sup>2</sup> has attempted to address these issues, proposing newer ways of delivering care, with increased multidisciplinary working across primary care networks, greater collaboration of services, creation of new job roles to support practice staff and facilitation of new services within primary care.<sup>3</sup> One such, relatively new, service is the group consultation.

Group consultations are an alternative approach to deliver care in primary care settings, in particular in general practices, contributing to annual Quality Outcomes Framework (QOF) reports by supporting the management of long-term conditions.<sup>4</sup> This has been demonstrated in managing diabetes, chronic pain, hypertension, cancer, menopause, and asthma.<sup>5-7</sup> As much of the

early work was conducted in the US, there is still relatively little known about group consultations in UK general practice.<sup>8,9</sup>

In the UK, group consultations feature in the *Ten High Impact Actions* by the Royal College of General Practitioners (RCGP)<sup>10</sup> as part of the NHS England General Practice Development Programme.<sup>11</sup> Group consultations have shown to be effective for patients in some regional evaluations, in terms of clinical outcomes and patient satisfaction.<sup>1</sup> However, little is known about the views of the workforce about using this approach as an alternative to one-to-one consultations in general practice.

A qualitative study in the *British Journal of General Practice* by Swaithes and colleagues has explored the experiences of healthcare professionals implementing and delivering group consultations,<sup>12</sup> providing a unique contribution to the evidence-base in the UK. The aim of this article is to summarise and discuss the findings of this study, highlighting the advantages of and barriers to the approach, key steps for implementation and recommendations for practice.





### ADVANTAGES

Many participants perceived group consultations as having the potential to release capacity, due to views that current models of care are not sustainable. A shift from the traditional medical model to a greater holistic approach to care was favoured, helping to remove the tick-box mentality driven by QOF. Participants felt this model of care promoted a more relaxed approach with extra time, aiding positive

patient-clinician relationships, without the 'monotonous', 'isolating' and 'hierarchical' qualities of individual consultations. Many participants felt they could get to really understand what it meant to live with a chronic condition and valued the peer-to-peer support, which challenged patients to think differently about their own condition, especially regarding sensitive issues such as weight management and lifestyle. It also helped clinicians recognise the level of knowledge patients had regarding their condition, which wouldn't necessarily be shown in an individual consultation, due to the different type of encounter in a group setting.

Group consultations were reported, in some cases, to help improve cohesiveness between teams. The up-skilling of junior clinicians was discussed as a by-product of group consultations, helping to develop a specific skill set for effective facilitation, as well as creating opportunities for leadership roles and presentation skills. Group consultations can therefore be viewed as an

educational activity for all healthcare roles, aiding the continued professional development of primary care staff.

However, favourable perceptions of the approach were dependent on a practice's innate motivation to set up of group consultations to support the management of long-term conditions. Some practices aimed to adopt this approach in the management of other medical conditions, and to help to improve multi-disciplinary working across general practice teams.

### BARRIERS

Some participants expressed hesitant experiences, described as barriers to the set-up and delivery group consultations, due to concerns regarding workload and responsibilities, appropriate knowledge and skills to deliver a consultation, or the desire to adopt new roles. Many participants, in particular clinicians, felt they were expected to demonstrate a different skill set in a group environment than in a one-to-one, despite delivering the same consultation in

#### BOX 1. REASONS FOR LACK OF SUPPORT

Reasons for lack of support for implementation included:

- Funding and commissioner 'buy-in'
- The 'wrong time' to be taking on a new approach
- Practice dynamics
- Insufficient resources for support and training.

## ESSENTIALS



positive motivation. Implementation was therefore heavily reliant on the buy-in of senior decision makers.

Many participants felt whole practice engagement was regarded as essential to 'sell' the approach, which heavily relied on the role of the facilitator to gain support of the practice team to initiate set-up and delivery. The importance of good working relationships and structures were apparent, for instigating change and to champion the approach.

In some instances, group consultations were established through 'trial and error', regarding planning and support, role requirements and facilitation. This impacted on the sustainability of group consultations in practice, whereby a reported challenge was the inability to integrate them into everyday practice.

The 'trial and error' approach illustrated how it was important to have a clear implementation

terms of content. This was particularly apparent when other clinicians were part of a group consultation, as many felt anxious regarding their skill set and knowledge base.

A spectrum of engagement was also identified, ranging from 'passive supporters', individuals who did not prevent group consultations being set up, but who did not

plan at the beginning, with support of both practice staff and commissioner 'buy in', in terms of planning, funding and resources. Those practices which had successfully embedded group consultations believed the extent to which this approach was embedded was limited, due to a lack of time to evaluate implementation. Therefore, a lack of robust evidence on the effectiveness

role, or 'champion' to organise and run the consultation, with many practices allocating a non-clinical healthcare professional to conduct this role. The 'champion' role, more specifically, refers to an individual who adopts a leadership role to influence and drive group consultations in their practice. This role is often viewed as an extension of a previously established role, with the expectation that the facilitator will maintain their 'day job' as well as take on additional tasks such as project management, marketing and contractual agreements. Participants reported that the facilitator encountered the largest workload with regards to planning, running and managing the approach, as well as being a 'champion' in selling the approach.

A lack of clarity around role definition also can lead to difficulties in recruitment, selection and training of a facilitator, raising questions about how practices allocate a facilitator. The 'champion' role demands a specific skill set, such as health coaching or behaviour change techniques. Presentation and leadership skills are also required, in which the facilitator is expected to lead and run the group, as well as managing the group dynamic. However, this role requires health professionals to adopt this skill set without any formal training. Practices may offer in-house training, but due to the responsibilities required of this role, this may not be adequate to encompass all aspects of what it means to be a 'champion' of group consultations. The lack of training and support for this critically important role raises questions about the sustainability of the approach.

The need for training is often dependent on the priorities of both the individual practice and the local Clinical Commissioning Groups (CCGs). Many of the participants in this study were able to dedicate time to the introduction and/or delivery of group consultations because they had the support of 'professional launch pads' and financial incentives from funding schemes to support the uptake of group consultations, although this still demands the buy-in of the CCG to support set-up and delivery. A lack of flexibility in terms of commissioning support was referred to, alongside a lack of recognition of group consultations with regards to payment systems and clinical coding, which resulted in an inability to sustain this approach. Many

## Some practice nurses felt restricted as they were not deemed key decision makers by the practice team

actively engage in their establishment, to 'blockers', those with attitudes and behaviours which could stop the introduction of group consultations. Some practice nurses had the ambition to drive change, but often felt restricted as they were not deemed key decision makers by the practice team, despite having innate

of group consultations in practice has become apparent.

### KEY ROLES REQUIRED

Many participants believed the introduction and delivery of group consultations in general practice was dependent on effective facilitation. This was viewed as a facilitator



participants felt group consultations should be incorporated into the QOF templates, as financial incentives are not always apparent or accessible with the current systems and structures.

## DISCUSSION

The changing nature of primary care itself builds a foundation to which group consultations have the potential to be incorporated into everyday practice. This foundation is supported with new roles in primary care such as social prescribers, practice pharmacists and first-contact physiotherapists, which not only enable a multi-disciplinary delivery of care, but also help to foster sharing of knowledge and skill set across other primary care roles.<sup>2</sup> Group consultations can therefore provide a platform for healthcare professionals to collaborate, share knowledge and experience, and deliver holistic multi-disciplinary care – a shift away from current models of care used to manage long-term conditions.<sup>9,14</sup> However, concerns regarding the key role requirements such as a lack of dedicated job specifications, training, support and mentorship for those



## BOX 2. RECOMMENDATIONS FOR PRACTICES TO IMPLEMENT AND SUSTAIN GROUP CONSULTATIONS

- Group consultations should be considered an alternative approach to one-to-one consultations, and not viewed as a replacement.
- The role of the facilitator needs careful consideration to select the right person. This role should not be an extension of a previously established role, such as a healthcare assistant, general practice nurse or practice administrator, as it requires in-depth planning to support and enable change.
- 'Champions' need to generate full practice buy-in, due to issues with staff prioritising other demands in the practice, meaning group consultations are neglected.
- Robust implementation processes will ensure of group consultations are embedded into primary care systems.

facilitating group consultations raises questions about the sustainability of the approach.

Due to the impact of the pandemic, however, the need for newer ways of working has become more apparent. Video consultations are one way to reduce direct clinician-patient contact due to social distancing measures, a shift that can be deemed as both technical and cultural.<sup>15</sup> Online platforms can be used for both individual consultations and group consultations. Video is playing an increasingly important role in providing patients with the opportunity to access healthcare by alternative means, and for some, this may be the only means of access. Those with symptoms of COVID-19 or those patients shielding due to other conditions can make use of this virtual platform, and still receive the same standard of care they would have done otherwise.

The potential to deliver group consultations via a video-conferencing platform creates an opportunity for both patients and healthcare professionals to access and deliver these services. However,

more evidence is needed to assess the viability of video group consultations as an alternative to a one-to-one approach. The findings of the Swaithes study<sup>13</sup> can greatly inform further research on the factors affecting the set-up and delivery of video group consultations, because of the similarities in consultation style. Like group consultations, successful introduction, sustainability and scale-up of both these approaches depends on the presence of innovators, champions and change agents.<sup>12,15,16</sup>

## RECOMMENDATIONS

Due to the complexity, diversity and bespoke nature of group consultation models, little is known about how group consultations can be fully embedded or used routinely across UK general practice. A clear implementation plan from the outset is therefore essential to enable the sustainability of group consultations in primary care general practice. Some participants in the study described an 'invest-to-save' model, which was thought to be true in the implementation of group

## ESSENTIALS

consultations, requiring greater time commitment in the early stages of implementation but which would reduce as they were embedded. This however, has not been demonstrated and requires a collection and sharing of robust evaluation data both locally and nationally, along with collaborative working between both general practices and CCGs. The implementation and sustainability of the approach depends on the context surrounding general practice. The need to engage with digital approaches of care raises questions of the viability of group consultations in the future.

### CONCLUSION

The set-up and delivery of group consultations from the experiences of healthcare professionals, provides a unique and novel insight into the barriers, facilitators and key roles of this approach. Whilst group consultations are effective in improving cohesiveness between teams, reducing consultation time and promoting

patient and staff education, the lack of implementation and concerns regarding facilitation are aspects of this approach which requires consideration. Key roles and practicalities surrounding the set-up and delivery must be supported by a clear implementation plan, effective facilitation and whole practice engagement. The future of general practice therefore depends on an open-mindedness to adopt and evaluate new practices and reform to newer and more efficient ways of working to meet the needs of the current patient population. ♦



### REFERENCES

1. Baird B, Charles A, Honeyman M, et al. Understanding pressures in general practice. The Kings Fund; London, 2016. [https://www.kingsfund.org.uk/sites/default/files/field/field\\_publication\\_file/Understanding-GP-presures-Kings-Fund-May-2016.pdf](https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/Understanding-GP-presures-Kings-Fund-May-2016.pdf).
2. NHS England. The NHS Long Term Plan, 2019. <https://www.longtermplan.nhs.uk/wp-content/uploads/2019/08/nhs-long-term-plan-version-1.2.pdf>.
3. The Kings Fund. Primary care networks explained. The Kings Fund; London, 2020. <https://www.kingsfund.org.uk/publications/primary-care-networks-explained>.
4. NHS Digital. Quality Outcomes Framework, 2021. <https://qof.digital.nhs.uk/>.
5. Craig G. Group consultations: better for patients, better for nurses? Practice Nurse 2017;4(1):15-18.
6. Craig G, Nelson S. How group consultations are changing respiratory care. Practice Nursing 2019;30(3):136-139.
7. Birrell F, Brady L, Jones T. Group consultations: Benefits and implementation strategies. Practice Nursing 2018;29(10):484-488.
8. Booth A, Cantrell A, Preston L, et al. What is the evidence for the effectiveness, appropriateness and feasibility of group clinics for patients with chronic conditions? A systematic review. Health Services and Delivery Research, 2015;3(46):1-193.
9. Wadsworth K H, Archibald T G, Payne A E, et al. Shared medical appointments and patient-centred experience: A mixed-methods systematic review. BMC Medical Practice, 2019;20(1):97.
10. Royal College of General Practitioners. Spotlight on the 10 high impact actions, 2018. <https://www.rcgp.org.uk/media/Files/Primary-Care-Development/RCGP-spotlight-on-the-10-high-impact-actions-may-2018.ashx?w=11>.
11. NHS England. GP Five Year Forward View, 2016. <https://www.england.nhs.uk/wp-content/uploads/2016/04/gfv.pdf>.
12. Gandhi D, Craig G. An evaluation of the suitability, feasibility and acceptability of group consultations in Brighton Medical Practice. Journal of Medicines Optimization 2019;5:39-44.
13. Swaithes L, Paskins Z, Duffy H, et al. The experience of implementing and delivering group consultations in UK general practice. Br J Gen Pract 2021;71(707):e412-e422.
14. Kish S R, Aron D C, Johnson K D, et al. A realist review of shared medical appointments: How, for whom, and under what circumstances do they work? BMC Health Services Research 2017;17(1):113.
15. Wherton, J, Shaw S, Papoutsi C, et al. Guidance on the introduction and use of video consultations during COVID-19: important lessons from qualitative research. BMJ 2020;4:120-123.
16. Jones T, Darzi A, Egger G, et al. A systems approach to embedding group consultations in the NHS. Future Healthcare Journal, 2019;6(1):8.

Why you should read this article:

- To explore the use and uptake of video group consultations (VGCs) by UK general practice staff during the COVID-19 pandemic
- To enhance your awareness of the potential use of VGCs in your clinical setting
- To recognise that the use of VGCs is dependent on funding, organisational support, general practice priorities and understanding of the model

## Use of video group consultations by general practice staff during the COVID-19 pandemic

Eleanor Scott, Laura Swaithe, Gwenllian Wynne-Jones et al

Citation

Scott E, Swaithe L, Wynne-Jones G et al (2023) Use of video group consultations by general practice staff during the COVID-19 pandemic. *Primary Health Care*. doi:10.7748/phc.2023.e1801

Peer review

This article has been subject to external double-blind peer review and checked for plagiarism using automated software

Correspondence

e.scott@keele.ac.uk  
@elliescott\_RN

Conflict of interest

None declared

Accepted

20 March 2023

Published online

June 2023

Permission

To reuse this article or for information about reprints and permissions, please contact [permissions@rcni.com](mailto:permissions@rcni.com)

Abstract

**Background:** Video group consultations (VGCs) are one approach to delivering care using a virtual platform for a group of patients with the same or similar health conditions. However, little is known about the use and uptake of VGCs in the UK.

**Aims:** To describe the use and uptake of VGCs by UK general practice staff during the coronavirus disease 2019 pandemic.

**Methods:** A cross-sectional design using an online questionnaire. Data analysis adopted the principles of content analysis and demographic data were analysed descriptively.

**Findings:** A total of 36 participants completed the questionnaire across nine UK regions and representing 36 general practices. A lack of standardisation regarding the use and uptake of VGCs across UK general practices was identified, hindering implementation, scale-up and delivery.

**Conclusion:** While the VGC model looks promising, further research is needed to demonstrate its use and uptake, developing a more robust evidence base for implementation.

Author details

Eleanor Scott, PhD student, school of nursing and midwifery, Keele University, Staffordshire, England; Laura Swaithe, knowledge mobilisation research fellow, Keele University, Staffordshire, England; Gwenllian Wynne-Jones, professor, Keele University, Staffordshire, England; Andrew Finney, senior lecturer and postdoctoral researcher, Keele University, Staffordshire, England

Keywords

community, coronavirus, Covid-19, general practice, practice nurses, primary care, research, research methods, surveys

Background

Over the past decade, the NHS and primary care general practice have experienced several challenges. Policies such as the Five Year Forward View (NHS England (NHSE) 2014) and General Practice Forward View (NHSE 2016) proposed new and more efficient models of integrative and collaborative care, meaning that practices have greater control over funding and service design (NHSE 2016). The NHS Long Term Plan (NHSE 2019) attempted to further establish novel ways of working with the development of primary care networks and integrated care systems, which

have combined services and expanded primary care roles to increase accessibility for local populations (NHSE 2019).

These newer ways of working extended to the use of group consultations in general practice, meaning that clinicians can consult with multiple patients with the same or similar medical condition at once (Ramdas and Darzi 2017). Group consultations are effective in delivering patient education and health promotion (Wadsworth et al 2019, Papoutsi et al 2022). Although this approach has been used in primary care, there is limited evidence to prove its efficacy in practice or address the growing



challenges with increased populations, backlog and disease severity (National Institute for Health and Care Research 2016).

In 2020, general practice services had to restructure due to the coronavirus disease 2019 (COVID-19) pandemic stimulating a digital shift. COVID-19 had a significant effect on the ways in which healthcare services were run, with the need to reduce footfall in general practice settings (Greenhalgh et al 2020). While digital transformations had been slow over the previous 20 years, the NHS had to quickly adopt a digital approach to care (Birrell et al 2020, Greenhalgh et al 2020). Face-to-face consultations were reduced to stop the transmission of COVID-19, and alternative methods of care delivery were used, including online consultations by video or telephone.

The initiation of video group consultations (VGCs) was one response to the COVID-19 pandemic and a potential way of future-proofing primary care services from further challenges (Papoutsis and Shaw 2021). However, due to the novelty of the approach, many practices were reluctant to test or adopt VGCs, with a clear disparity in engagement (Clarke et al 2020). Understanding why and how some practices choose to offer VGCs will generate the development of a robust evidence base and support understanding of implementation of VGCs in practice.

#### Video group consultations

VGCs, also known as virtual group clinics or video-shared medical appointments, are an alternative model of consultation, offering clinicians a way to deliver the same standard of patient care using a virtual environment and a group consultation model (Birrell et al 2020). VGCs differ from face-to-face group consultations as they are conducted using a virtual platform.

VGCs are still relatively new in the UK and demonstrate a small evidence base globally due to their novelty (Papoutsis and Shaw 2021). During the COVID-19 pandemic, training providers rapidly initiated VGCs training for staff. However, the implementation, delivery and effect of VGCs have not yet been fully evaluated because of the enforced and increased pace of newer ways of working.

#### Aim

To describe the use and uptake of VGCs by UK general practice staff during the COVID-19 pandemic. The associated study question was: 'What is the use and uptake of VGCs by healthcare professionals in UK primary care general practice?'

#### Method

##### Design

A cross-sectional design using an online questionnaire was adopted. Cross-sectional studies follow a transverse design, where a sample of participants are analysed at a specific point in time (Peat 2002). A questionnaire also captures a variety of data using closed and open-ended questions, producing both descriptive statistics and qualitative data.

The STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) checklist (von Elm et al 2007) was used to ensure accurate and comprehensible reporting, to facilitate both critical appraisal and interpretation of results.

##### Sample

Participants were selected based on their exposure status, with the researchers targeting a population relevant to the study question (Wang and Cheng 2020); that is all clinical and non-clinical staff who used or had previously used VGCs in their primary care general practice. Any clinical and non-clinical participants who were not working in primary care general practice were excluded.

Three sampling methods, purposive, random and snowball, were used to identify a broad range of individuals and practices using VGCs, varying geographical locations and professions (Roy et al 2020).

Purposive sampling was achieved by using the FutureNHS (future.nhs.uk) collaboration platform to identify individuals who had been involved in routine VGCs and met the eligibility requirements for the study. Purposive sampling was used to ensure that the collection of data was relevant and pertinent to those using VGCs in general practice.

Random sampling was achieved using social media platforms (Facebook and Twitter) with the ability to reach a large audience through virtual networks. Participants were able to include themselves in the study if they met the eligibility requirements determined by a tick-box system. Once this was completed, electronic consent to take part in the study was obtained and participants were able to access the questionnaire. Without confirming eligibility and gaining consent, the questionnaire was unable to be completed.

Snowball sampling was used to capture a larger audience through professional networks.

Sampling continued until the period of recruitment ended and no further participants were identified.

#### Implications for practice

- The novelty of video group consultations (VGCs) across primary care general practice means that there is a need to address their value in theory and practice
- Studying the use and uptake of VGCs can help to provide an insight into how VGCs are defined, delivered and described
- Future research will help to develop a greater understanding of the use and uptake of VGCs, aiding more coherent delivery and implementation of this model across the UK

**Data collection tool**

An initial questionnaire was devised and piloted by a stakeholder advisory group and informed by systematic scoping searches. This informed the development of the final questionnaire. To ensure the questions in the final questionnaire were relevant not only to the study topic but also to the participants, questions were tailored dependent on the answers previously provided in the initial pilot questionnaire. A mixture of quantitative and qualitative questions was asked.

The final questionnaire was available to access for two months (November 2021–January 2022) through Microsoft Forms, an online survey creator. The questionnaire consisted of six broad areas:

- » Participant demographics (quantitative).
- » Participant professional roles (qualitative and/or quantitative).
- » Practice demographics (quantitative).
- » The use of VGCs (qualitative and/or quantitative).
- » Enablers and barriers to the use of VGCs (qualitative and/or quantitative).
- » Training requirements (qualitative and/or quantitative).

**Data analysis**

Data analysis was conducted by the first author (ES), supported by the study team (AF, LS, GW-J). All data were analysed anonymously.

Inductive content analysis was used to analyse qualitative data, by analysing manifest and descriptive content to develop categories, resulting in themes (Elo and Kyngäs 2008, Graneheim et al 2017, Lindgren et al 2020).

Demographic data were analysed descriptively and used in combination with the themes to provide a context for interpretation and discussion.

**Ethical considerations**

Ethical approval was obtained from the research ethics committee, faculty of medicine and health sciences at Keele University (ref 2022-0312-315). All data were anonymised to ensure confidentiality.

**Findings****Participant and practice demographics**

The total number of questionnaires distributed was unknown due to the sampling methods used and the anonymity of the data and analysis. However, due to the limited evidence on VGCs, it was considered valuable to analyse the responses that were received and therefore the response rate was not a primary

consideration. After exclusions and incomplete questionnaires ( $n=2$ ), 36 participants, representing 36 general practices, completed the questionnaire across nine regions of the UK. Table 1 outlines the participants and

**Table 1. Participant and practice demographics ( $n=36$ )**

Variable	Number
<b>Gender</b>	
» Female	28
» Male	7
» Prefer not to say	1
<b>Age group (years)</b>	
» 18–24	1
» 25–34	5
» 35–44	12
» 45–54	10
» 55–64	8
<b>Professional role</b>	
» GP	16
» GPN	5
» ACP/ANP	7
» AHP	2
» Practice manager	1
» Social prescriber	3
<b>Other roles (non-clinical)</b>	
» Health coach	1
» Digital coordinator	1
<b>Practice location (region)</b>	
» North east England	2
» North west England	6
» Yorkshire and the Humber	3
» West Midlands	5
» East of England	3
» London	7
» South east England	7
» South west England	2
» Scotland	1
<b>Practice size (thousands)</b>	
» 0–2,000	1
» 2,000–5,000	4
» 5,000–10,000	4
» 10,000–15,000	12
» 15,000–20,000	7
» 20,000–25,000	3
» >25,000	5

GPN=general practice nurse; ACP=advanced clinical practitioner; ANP=advanced nurse practitioner; AHP=allied health professional

practice demographics. Each participant was assigned a number which is used in this article alongside their job type when using direct quotes below.

#### Themes

Four themes were identified from the questionnaire data:

- » Definition and use of VGCs.
- » Staff and patient motivations for using VGCs.
- » Workload and practice priorities.
- » Using pre-existing and new networks to sustain VGCs.

#### Definition and use of video group consultations

Understanding how VGCs were defined was central to the use of the approach, determining its purpose and scope in practice. The terms 'video group consultation' ( $n=22$ ) or 'video group clinic' ( $n=12$ ) were reported most by the participants. Educational therapy ( $n=5$ ), support group ( $n=6$ ) and group therapy ( $n=1$ ) were also reported as features of VGCs, yet also became a defining characteristic for some participants. Shared medical appointment ( $n=1$ ) was not chosen as a widely used definition for VGCs.

Participants were asked, 'How would you define how you use VGCs in your practice?' The most frequently reported definitions of use was for long-term condition reviews ( $n=25$ ), detailing several conditions, including diabetes ( $n=4$ ) and cancer ( $n=1$ ). Terms such as 'management' ( $n=2$ ) and 'chronic disease' ( $n=1$ ) were also identified in relation to long-term condition reviews.

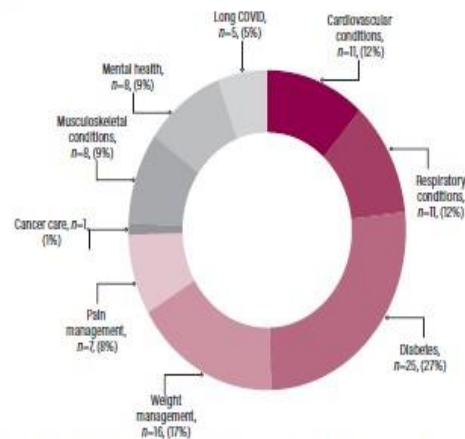
The principles of 'group support' and 'health promotion' were also used to define the use of VGCs. Group support included 'providing discussion' (P19\_GP), 'interactive questioning' (P19\_GP), 'another method of connecting' (P15\_GP) and 'experience sharing' (P34\_GP). One participant defined a VGC as 'an online group that enables discussion among a group of patients with similar health issues' (P14\_general practice nurse (GPN)). Health promotion included goal setting ( $n=1$ ), coaching ( $n=2$ ), promoting health ( $n=1$ ) and providing information ( $n=9$ ). Lifestyle medicine ( $n=8$ ) was also viewed as an aspect of health promotion as a means of lifestyle advice ( $n=4$ ), for example for patients with rheumatoid arthritis ( $n=1$ ), weight management ( $n=1$ ), cognitive behavioural therapy in menopause groups ( $n=1$ ), postnatal care ( $n=1$ ) and mental health ( $n=1$ ). One participant defined VGCs as 'providing information on a dietary

approach to diabetes plus supporting patients if they chose to follow that plan in de-medicating' (P31\_GP).

The scope and role of VGCs extended to the management of conditions, mostly identified as type 1 and type 2 diabetes ( $n=25$ , 27%) and weight management ( $n=16$ , 17%) (Figure 1). However, support for the use of VGCs in various patient groups was usually dependent on organisational and practice support in that 'practice is keen to support cohorts such as those with pre-diabetes, mental health so we have explored using VGCs to offer targeted support to these individuals' (P30\_social prescriber).

Participants were asked, 'Do you manage any other conditions through VGCs?' Two main categories were identified related to health prevention ( $n=10$ ) or health promotion ( $n=2$ ). Health prevention included conditions such as diabetes, including pre-diabetes and newly diagnosed diabetes ( $n=3$ ); men's health and women's health, including menopause ( $n=4$ ); cancer ( $n=1$ ); dementia ( $n=1$ ) and postnatal care ( $n=1$ ). Conditions and/or activities related to health promotion included exercise classes ( $n=1$ ), with the aim of disease prevention ( $n=1$ ). However, one participant described how the topics included in VGCs was determined by the patients themselves, stating: 'we allow patients to leave a message requesting a topic they want group clinics to cover, and we will offer group clinics in any area requested by the patient' (P01\_GP).

Figure 1. Conditions managed using video group consultations ( $n=92$ )\*



\*Participants were able to choose more than one condition in their response, totalling 92 responses and therefore there were more than 36 responses



#### Staff and patient motivations for using video group consultations

Participants talked about their motivations and their perceptions of patient motivations for the use and uptake of VGCs in practice. Of the participants, 27 (75%) currently used VGCs, while nine (25%) had previously used the approach and stopped. Participants were asked, 'If you have previously used VGCs and stopped, why have you stopped?' Two reported that VGCs were not continued if a 'specific programme ended' (P23\_social prescriber) or 'the health coach who was providing the facilitator role moved away' (P33\_GP).

Uptake of VGCs was therefore dependent on staff and perceived patient motivations. In terms of staff uptake of VGCs, 'challenging doubters' (P21\_advanced clinical practitioner/advanced nurse practitioner (ACP/ANP)) was an issue, with some participants citing difficulties in 'changing perceptions of group consultations' (P21\_ACP/ANP) and 'reluctance of certain clinicians to engage' (P28\_GP). One participant identified that reluctance to change was grounded in individuals 'being stubborn' (P03\_ACP/ANP) and the belief that 'most people working in primary care already have the necessary skills' (P06\_GP).

Participants described several attributes that staff would require to use VGCs (Box1). These attributes ultimately helped in 'believing in the model' (P03\_ACP/ANP) and 'confidence

in getting the change project up and running' (P04\_GP).

Several training needs were also identified by participants and deemed important for staff motivation to use VGCs, mostly related to facilitation skills, including the ability to facilitate a group session, and manage group dynamics and challenging circumstances. One participant stated that the delivery of VGCs was dependent on 'someone who understands the tech and can act as a master of ceremonies' (P19\_GP). However, facilitation skills ( $n=32$ ) were also considered more broadly, in terms of presentation skills ( $n=3$ ), IT skills ( $n=6$ ), digital literacy ( $n=2$ ), coaching skills ( $n=3$ ), group management skills ( $n=11$ ), communication skills ( $n=5$ ), administration skills ( $n=1$ ) and a variety of content to ensure adaptability ( $n=1$ ). Five participants listed the need for facilitator training and increased 'IT literacy for when things go wrong' (P08\_GPN). However, another argued that 'time needs to be given so clinicians can understand the benefits' (P28\_GP) and therefore make sense of the skills and training needed to deliver a VGC.

Despite this, participants perceived that patient motivation was key to the use and uptake of VGCs, with one stating 'our local population was "Zoomed" out [an expression of overuse of virtual platforms including Zoom] and haven't taken up the opportunity for VGCs as enthusiastically as they took up the invitation for face-to-face GPs' (P31\_GP). Attendance by patients was therefore identified as a major issue, with one participant stating 'we will often recruit eight or so patients but none will attend after multiple reminders' (P09\_health coach).

Participants also perceived patients' use of technology as central to suboptimal uptake. It was perceived that the 'older population rejecting the idea of "new-found" tech' (P05\_GPN) related to a high VGC 'did not attend' rate. One participant stated, 'while most patients have access to a compatible device, many lack confidence in technological ability and declined or came into difficulties joining or during the VGC' (P20\_allied health professional (AHP)). Participants ( $n=32$ ) identified the patient age group most commonly using VGCs were those aged between 40 and 50 years.

Some participants related perceived suboptimal patient uptake to access issues, rather than motivation, identifying that 'patients frequently declined on the basis of availability' (P20\_AHP) because 'only one VGC date was confirmed at a time with no

#### Box 1. Attributes that staff needed to use video group consultations

- » 'Determination' (P12\_GPN)
- » 'Enthusiasm' (P14\_GPN)
- » 'Personal interest' (P18\_GP)
- » 'Desire to be more digital' (P15\_GP)
- » 'Confidence to have discussions with a group of people' (P03\_ACP/ANP)
- » 'Empathy' (P09\_HC)
- » 'Patience' (P09\_HC)
- » 'Approachability' (P32\_PM)
- » 'Adaptability' (P12\_GPN)
- » 'Personable' (P20\_AHP)
- » 'Engaging' (P20\_AHP)
- » 'Emotional intelligence' (P20\_AHP)
- » 'Thinking outside the box' (P27\_NC)
- » 'The ability to motivate and inspire' (P20\_AHP)
- » 'Time management' (P20\_AHP)
- » 'Problem solving' (P27\_NC)
- » 'Good consultation skills' (P03\_ACP/ANP)
- » 'A sense of humour' (P21\_ACP/ANP)

GPN=general practice nurse; ACP=advanced clinical practitioner; ANP=advanced nurse practitioner; HC=health coach; PM=practice manager; AHP=allied health professional; NC=non-clinical (a grouping of roles named as non-clinical, including health coach and digital coordinator)

indication of the next' (P20\_AHP). However, 'some patients are pro VGCs, as they see it is a time saver' (P36\_social prescriber).

Other perceptions related suboptimal patient uptake to the choice of face-to-face or VGC. There was a perception among participants that when given the choice between face-to-face consultations or VGC, patients preferred face to face, with one participant stating 'we are planning to run a pre-diabetic VGC but are debating this in-person rather than tech as our patients appear to prefer in-person options' (P30\_social prescriber).

In addition, perceived patient uptake of VGCs was dependent on preference for a group versus an individual approach, as one participant noted that it was 'slow starting to get the numbers for our group consultations as still offering 1:1' (P10\_ACP/ANP), while others noted that 'some love and some prefer individual input' (P08\_GPN) and 'others prefer in-person, as they like the companionship of others' (P34\_GP). Uptake was therefore dependent on targeting the appropriate patient population and acceptance of a new consultation model.

#### *Workload and practice priorities*

Workload and practice priorities were key to the set-up and delivery of the VGCs approach. The lack of facilitation and support were the main reasons why practices stopped delivering VGCs, including clinical support ( $n=1$ ); technological support ( $n=1$ ); administrative support, such as preparation of resources ( $n=2$ ); time intensity ( $n=1$ ); additional workload ( $n=1$ ); and lack of capacity ( $n=1$ ). One participant stated that 'they [VGCs] are time intensive for small turnout in terms of prep of resources, tech support, two clinicians presenting and someone on the chat box' (P30\_social prescriber).

The time taken to deliver each VGC was identified as between 60 and 90 minutes ( $n=24$ , 67%), predominantly involving either four to six patients ( $n=14$ , 39%) or six to eight patients ( $n=13$ , 36%). Therefore, 'having the time to build these sessions' (P27\_non-clinical) was paramount because 'once foundations are in place some sessions can run on self-referrals, reducing admin processes' (P21\_non-clinical). However, one participant stated that this relied on 'having more people to help than just one person doing it' (P07\_GPN).

Participants were asked, 'What other factors have played a role in the set-up of VGCs?' Although participants did not have to answer this question, 26 did. More than

half of responses ( $n=14/26$ , 54%) related to organisational and practice support, including practice and/or group support ( $n=3$ ), administrative support during and in the initial work-up ( $n=3$ ), support from GPs ( $n=1$ ) and commissioning investment ( $n=4$ ).

Participants were also asked, 'Did your practice already deliver group consultations before offering VGCs?' Of the participants, 22 (61%) responded 'no', 13 (36%) answered 'yes' and one (3%) responded 'not sure'. Successful workforce planning was therefore identified as crucial ( $n=18$ ), due to the unestablished nature of the VGC model and the associated workload required to get the approach 'up and running'. Planning ( $n=3$ ), time ( $n=4$ ), availability and scheduling ( $n=7$ ), training ( $n=2$ ), and administrative support ( $n=2$ ) were all factors that the participants stated could contribute to the ability to provide VGCs as an alternative model of consultation. However, 'a lack of investment in staff who are able to do the VGC' (P14\_GPN) meant that participants noted issues with the viability of the approach, stating 'I wish I had more protected time' (P32\_practice manager), that there was 'no time for planning recall of patients' (P03\_ACP/ANP) and that there were challenges with 'getting certain members of the practice on board' (P04\_GP). One participant also identified that 'staff training and availability is a huge challenge, as is getting allocated time for VGCs within the clinical day' (P33\_GP).

Training was identified as key to the use and uptake of the VGC approach, with most participants being involved in formal training sessions ( $n=24$ , 67%). Formal training ( $n=22$ ), including the need for ongoing support and accreditation ( $n=2$ ), was identified as a necessary requirement for the delivery of VGCs. However, one participant stated that VGCs 'can be easily done without the training too' (P35\_GP), while another stated that 'the best training is to "just do it"' (P31\_GP).

Participants provided more than one answer to the question on barriers to the use of VGCs with the total number of responses reaching 100. The use of technology was identified as the second largest barrier to the use of VGCs ( $n=22/100$ , 22%).

Microsoft Teams was identified as the most favoured platform to deliver VGCs ( $n=28$ , 78%). However, one participant stated that 'the technology [is] still not mature enough' (P15\_GP) to deal with newer ways of working, ultimately leading to a lack of confidence in systems such as the digital platforms used to host VGCs.



#### *Using pre-existing and new networks to sustain video group consultations*

The lack of sustainability when using VGCs was reported as a challenge. One participant described 'primary care being "stuck in a rut"' as practices were 'too busy to innovate', 'GDPR [General Data Protection Regulation] stifling innovation' and a 'lack of funding to do things differently' (P01\_GP). Another participant described sustainability as dependent on a 'culture shift' (P28\_GP). The sustainability of VGCs was also seen as being dependent on organisational support, with participants stating that 'we were commissioned to provide the service for a primary care network' (P31\_GP), and with some practices having 'CCG [clinical commissioning group] locally commissioned services incentivising group consultation delivery' (P33\_GP).

Participants who managed to sustain VGCs identified the need to use pre-existing and new networks. Techniques such as liaising with other practices and using experts already running VGCs were echoed across participants' responses as a way of 'showing how others are run' (P07\_GP). This also included the need to use a formal VGC training provider and incorporate established consultation models such as a long-term condition review or lifestyle medicine template into any VGCs.

When implementing VGCs, participants also described the benefits of 'training in delivery' (P11\_ACP/ANP), stating that 'it was useful to have the training of flow' (P35\_GP), and that 'training on the technical side was very helpful' (P30\_social prescriber) alongside 'on-going support/accreditation' (P01\_GP). Participants further identified the need for whole-team 'buy-in' rather than having an individual champion to initiate, deliver and sustain the VGC approach, due to the associated workload.

#### **Discussion**

To the authors' knowledge this is the first cross-sectional survey of UK general practice staff to explore the use and uptake of VGCs in primary care. Each finding exemplifies issues related to both the use and uptake of the approach. Of the four identified themes, definition relates to ways in which VGCs are being defined in practice and how this affects the uptake of the approach. The theme of staff and patient motivations describes both the use and uptake of the VGC approach, dependent on how it was understood in practice.

Workload and practice priorities referred primarily to the uptake of the VGC approach,

but indirectly affected how it is used. The theme of using pre-existing and new networks to sustain VGCs identified descriptions regarding the uptake of the approach.

Only participants who had used or previously used VGCs in primary care were included, due to the small prevalence of use across the UK. Excluding participants who had not delivered or set up VGCs meant that the data were focused on the study aim. The use of content analysis was well suited to the open-ended nature of the questions because it allowed for the fluidity of participant responses within the domains of the research question and aided pragmatic application in healthcare (Elo and Kyngäs 2008, Krippendorff 2018).

The study findings demonstrate a unique contribution to knowledge of VGCs, whereby the overlapping findings reflect the complicated nature of embedding complex interventions into practice. Normalisation process theory (NPT) focuses on the active work people and groups 'do', capturing the process of strategic change involved in sustaining an intervention, and aiding a greater understanding of how concepts are operationalised, engaged with, reflected on and evaluated in the 'real world' (May et al 2016, 2018). Therefore, the authors used NPT to aid discussion of the data, recognising the complexity of healthcare systems and the dynamics of implementing complex interventions, and focusing on four key constructs: coherence, cognitive participation, collective action and reflexive monitoring (May et al 2018, Saunders et al 2022). NPT was used as a method of understanding the ways in which 'complex interventions' such as VGCs can be embedded into practice.

New discussion themes were matched and discussed and related to the four constructs of NPT, to make sense of a diverse range of findings, as follows 'Understanding the role of VGCs' (coherence), 'Achieving practice and patient buy-in' (cognitive participation), 'Operationalising a new consultation model' (collective action) and 'Evaluating complex interventions' (reflexive monitoring) (Figure 2) (May et al 2018).

'Coherence' involves staff developing both an individual association and shared understanding of an approach such as VGCs, which enables practices to adopt a pragmatic and comprehensible intervention (May et al 2018). While participants described the varied use of VGCs, most defined the primary use as being for long-term condition reviews. This establishes the fluidity of what is a 'consultation' in general practice, distinct

from group support or educational therapy. Therefore, the lack of standardisation and shared definition (for example, in the way that a long-term condition was defined) influences how VGCs are translated, understood and worked in practice, affecting the VGC's viability as an alternative model of consultation.

This study also identified the importance of achieving practice and patient buy-in, aligning with the 'cognitive participation' construct of NPT, describing the work behind initiating new practices and the motivations for driving it forward, considering the involvement of others. It is therefore important to consider the effect of patients, alongside staff, in terms of the use and uptake of VGCs in future research studies.

In addition, participants described the operationalisation of VGCs in practice, in terms of practice commitment, workload, technology and training, reflecting the need for 'collective action' surrounding the implementation of new interventions into everyday practice. Definition regarding role and scope therefore affects how VGCs can be operationalised into practice.

Furthermore, it is important to note that a lack of evaluation aimed at sustaining the use of VGCs reflects the current position of primary care and the barriers associated with embedding complex interventions, which coincides with the construct of 'reflexive monitoring'. The effects of COVID-19 have meant that while there are many case studies reporting on the use of the VGC approach, strong evidence-based research is limited. The need to provide an evidence base for future use of VGCs in primary care general practice will promote the implementation of such complex interventions.

One consideration of the fluidity of this complex intervention cannot be encompassed by NPT alone. Papoutsi et al (2022) reiterated the need for the characterisation of VGCs, providing definitions for different remote group-based care formats, including clinical, educational, informational and mixed. The findings of Papoutsi et al (2022) are synonymous with this study, in which definition and the term 'consultation' are characterised dependent on practice needs, organisational capacity and training provider priorities. In addition, Papoutsi et al's (2022) categorisation resonates with the work of Swaithes et al (2021) who demonstrated a varied use and definition of the face-to-face group consultation model, and therefore may allude to the transferability of findings across both face-to-face and virtual settings.

#### Limitations

Limitations include the small sample size ( $n=36$ ). It is evident that while there is some use for VGCs in general practice settings, uptake is not on a broad scale. Although UK practices which have undertaken VGC training were targeted by the researchers, the use and uptake of the approach is dependent on a number of factors, including funding, organisational support, practice priorities and understanding of the model itself (Papoutsi et al 2022), therefore affecting the consistency of participation in VGCs. However, the spread of participants across nine regions of the UK reduced bias.

The risks of using social media when conducting a study, such as not producing a representative sample of the population, were discussed dependent on where the questionnaire was posted or distributed. There may have been a greater response in particular regions by using social media, for example in areas where clinicians shared information with other clinicians in their practice. The use of both professional social media sites and the researchers' social media accounts helped to ensure participants did not develop an 'echo chamber' (Cinelli et al 2021) of knowledge regarding study participation; that is, an environment whereby a person only encounters knowledge, beliefs or opinions which coincide with their own. The virtual nature of the study sampling also attempted to mitigate the constraints of COVID-19 restrictions on recruitment.

Further consideration of the external context and pressures facing general practice at the time of data collection – mainly COVID-19 and the restrictions that came with adapting to a newer way of working – may also have resulted in a smaller sample population. Studies completed at a similar point in time exploring the experiences of virtual consultations also had low response rates across community settings, including general practice (Ackerman et al 2020, Proulx-Cabana et al 2021).

Figure 2. Schematic representation of study themes matched to the four constructs of normalisation process theory





In addition, this study focused distinctly on VGC methods, and did not examine the contribution of face-to-face group consultations, which may have increased uptake. The sample also meant that only the views of staff were captured, and patient motivations were discussed in relation to staff perceptions. The cross-sectional nature of the study also meant that this data set only captured one point in time, limiting the generalisability of the findings.

### Conclusion

This study has explored the use and uptake of VGCs by UK general practice staff during the COVID-19 pandemic. Findings demonstrated complexities regarding the use and uptake of VGCs, due to fluidity of definition, a lack of standardisation and issues regarding operationalisation in practice. Further research is yet to be conducted to better understand the role of VGCs in UK general practice.

### References

- Ackerman SL, Gleason N, Shipman SA (2020) Comparing patients' experiences with electronic and traditional consultation: results from a multisite survey. *Journal of General Internal Medicine*, 35, 4, 1035-1042. doi: 10.1007/s11606-020-05703-7
- Birrell F, Lawson R, Sumego M et al (2020) Virtual group consultations offer continuity of care globally during Covid-19. *Lifestyle Medicine*, 1, 2, e7. doi: 10.1002/lm2.17
- Cirelli M, De Francisco Morales G, Galeazzi A et al (2021) The echo chamber effect on social media. *Proceedings of the National Academy of Sciences of the United States of America*, 118, 9, e2023307118. doi: 10.1073/pnas.2023307118
- Clarke G, Pariza P, Wolters A (2020) How has COVID-19 affected service delivery in GP practices that offered remote consultations before the pandemic? *health.org.uk/news-and-comment/charts-and-infographics/how-has-covid-19-affected-service-delivery-in-gp-practices* (Last accessed: 19 May 2023).
- Elo S, Nyngja H (2008) The qualitative content analysis process. *Journal of Advanced Nursing*, 62, 1, 107-115. doi: 10.1017/S0950-2688.2007.04569.x
- Greenheim UH, Lindgren B-M, Lundman B (2017) Methodological challenges in qualitative content analysis: a discussion paper. *Nurse Education Today*, 56, 29-34. doi: 10.1016/j.nedt.2016.06.002
- Greenhalgh T, Koh GC, Car J (2020) Covid-19: a remote assessment in primary care. *BMJ*, 368, m182. doi: 10.1136/bmj.m182
- Krippendorff K (2018) *Content Analysis: An Introduction to Its Methodology* Fourth edition. SAGE Publications, London.
- Lindgren B-M, Lundman B, Greenheim UH (2019) Abstraction and interpretation during the qualitative content analysis process. *International Journal of Nursing Studies*, 101, 103632. doi: 10.1016/j.ijnurstu.2020.103632
- May CR, Cummings A, Gilling M et al (2018) Using Normalization Process Theory in feasibility studies and process evaluations of complex healthcare interventions: a systematic review. *Implementation Science*, 13, 1, 80. doi: 10.1186/s13022-018-0150-1
- May CR, Johnson M, Finch T (2016) Implementation, context and complexity. *Implementation Science*, 11, 141. doi: 10.1186/s13022-016-0506-3
- National Institute for Health and Care Research (2018) *Group Clinics May be Better than Individual Consultations for Some Elements of Diabetes Care*. evidence.nihr.ac.uk/alert/group-clinics-may-be-better-than-individual-consultations-for-some-elements-of-diabetes-care/ (Last accessed: 19 May 2023).
- NHS England (2014) *Five Year Forward View*. england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf (Last accessed: 19 May 2023).
- NHS England (2016) *General Practice Forward View*. england.nhs.uk/wp-content/uploads/2016/04/gpfv.pdf (Last accessed: 19 May 2023).
- NHS England (2019) *The NHS Long Term Plan*. longtermplan.nhs.uk/wp-content/uploads/2019/08/nhs-long-term-plan-version-12.pdf (Last accessed: 19 May 2023).
- Papoutsi C, Shaw S (2020) Video group consultations in general practice during the Covid-19 pandemic: hype or reality? [www.hc.ac.uk/news/blog/video-group-consultations-in-general-practice-during-the-covid-19-pandemic-hype-or-reality](http://www.hc.ac.uk/news/blog/video-group-consultations-in-general-practice-during-the-covid-19-pandemic-hype-or-reality) (Last accessed: 19 May 2023).
- Papoutsi C, Shaw S, Greenhalgh T (2022) Implementing video group consultations in general practice during COVID-19: a qualitative study. *British Journal of General Practice*, 72, 720, e483-e491. doi: 10.3399/bjgp.2021.0673
- Poet J (2002) *Health Science Research: A Handbook of Quantitative Methods*. SAGE Publications, London.
- Proble-Cabana S, Segal TK, Gregorowski A et al (2021) Virtual consultations: young people and their parents' experience. *Adolescent Health, Medicine and Therapeutics*, 12, 37-43. doi: 10.2147/AHMT.S292977
- Ramdas K, Dorzi A (2017) Adopting innovations in care delivery - the case of shared medical appointments. *New England Journal of Medicine*, 376, 12, 1105-1107. doi: 10.1056/NEJMp1628003
- Roy L, Ikin R, Goleman R et al (2020) COVID-19 in the geriatric population. *International Journal of Geriatric Psychiatry*, 35, 12, 1437-1441. doi: 10.1002/gps.5389
- Saunders B, Chaudhry A, Protheroe J et al (2022) Risk-based stratified primary care for common musculoskeletal pain presentations: qualitative findings from the Sfarf MSK cluster randomised controlled trial. *BMC Primary Care*, 23, 1, 326. doi: 10.1186/s12875-022-09204-3
- Swaites L, Paskins Z, Duffy H et al (2021) Experience of implementing and delivering group consultations in UK general practice: a qualitative study. *British Journal of General Practice*, 71, 707, e413-e422. doi: 10.3399/bjgp.2020.0856
- von Elm E, Altman DG, Egger M et al (2007) Strengthening of Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *BMJ*, 335, 7624, 806-809. doi: 10.1136/bmj.29335.547782.AD
- Wadsworth NH, Archibald TG, Payne AE et al (2018) Shared medical appointments and patient-centered experience: a mixed methods systematic review. *BMC Family Practice*, 20, 1, 97. doi: 10.1186/s12875-019-0872-1
- Wang X, Cheng Z (2020) Cross-sectional studies: strengths, weaknesses, and recommendations. *Chest*, 158, 15, S65-S71. doi: 10.1016/j.chest.2020.03.072

## Appendix 3: Semi-Structured Interview Study Conference Presentation

**THE IMPLEMENTATION AND IMPACT OF VIDEO GROUP CONSULTATIONS BY HEALTHCARE PROFESSIONALS IN PRIMARY CARE GENERAL PRACTICE: A SEMI-STRUCTURED INTERVIEW STUDY.**


Eleonor Scott, RN, PhD – [e.scott@keele.ac.uk](mailto:e.scott@keele.ac.uk),  
Dr Alice Hunt (Supervisor), Dr Laura Swales,  
Professor Gwendolyn Wynne-Jones (Supervisor), Dr Andrew Forsey (Supervisor)



**Keele University**

**BACKGROUND**

- HEALTH POLICY (NHS England, 2015; 2018; 2019)
- STAFF BURNOUT (Balrd et al., 2018)
- NEED FOR NEWER WAYS OF WORKING
- GROUP CONSULTATION MODEL (Swales et al., 2021)
- DIGITAL INITIATIVES IN THE NHS
- THE IMPACT OF COVID-19




**What is a Video Group Consultation?**

- VGCs were a response to the COVID-19 pandemic
- Utilising the group consultation model, using a virtual platform
- Being conducted with 6-8 patients, and include a clinician, facilitator and coordinator, lasting around 90 minutes
- Long-term condition reviews, group support sessions, educational therapy



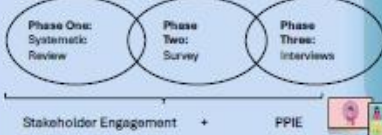
**The Gap**

- Clear Disparity in Engagement (Papoutsis et al., 2021)
- Many practices are using video group consultations, despite a limited evidence-base on the approach
- No definition of video group consultation provided
- Need for a strong evidence base for implementation into practice




**PhD study design**

*An exploration of the impact, implementation and delivery of video group consultations by healthcare professionals in primary care general practice.*




Stakeholder Engagement + PPIE



**Interview Research Question**

*What are the factors associated with the **implementation** and **impact** of VGCs by healthcare professionals in primary care general practice?*



- Healthcare professionals in general practice who are using, or have previously used video group consultations (14 interviews)
- IMPLEMENTATION and IMPACT
- Microsoft Teams
- Purposive, random and snowball sampling, recruited using professional networks and social media platforms
- Topic guide was iteratively developed as interviews commenced based on participants responses
- Reflexive Thematic Analysis (Braun & Clarke, 2021)



## 1. The context of implementation



## The influence of COVID-19

Life pressures were huge, so, because you're tomorrow, and, and we think we might be solving things going on and a lot of other things having to kind of having to be priority (P14, G1)

I am however giving ideas on writing headlines for it. At this moment, the need is greater to be able to look at what you're doing and realize that you could do it better and we don't have the breathing space (P46\_402)

### The culture of general practice

"...[i]t just makes me really, really sad...it's made me disappointed with doing things as we are...it's made me rethink how's working what we're doing...it's made me want to do work differently" (P04, GP04)

...more part of the problem is primary overbaiting than overbait enough people trying to do the day job and perform expectation and demand is, is excessive...as often read here itself or less patients, really come out, too)

### Patient inclusivity

“...you are not going to reach everybody and you’re probably not going to reach the people you should reach because they don’t have, they don’t have the tool.” (P08, VC)

## 1. The context of implementation



Conceptualisation  
of definition, use  
and delivery

“Almost down to  
the  
Imagination(POLYN)  
Q

"...after comparing the data, the researchers found that the patients who didn't take nitrate had a 30% greater risk of dying than those who did."

### Organisational Resources

“...as the other girls he asked  
that, asked that, asked one,  
and then he asked that girl  
how it was going to be.”  
(p. 100, line 10)

**1. Members of the Council**  
 represented the United States, the United Kingdom, France, Germany, Italy, Japan, Canada, and the European Commission. They agreed that the United States had the right to protect its security, but that the United States should not use force to protect its security.

Individual and group motivations

\*...a person who truly follows is  
 a better than somebody who  
 has merely thoughtless and  
 good right, you're not doing  
 anything, you can do better, just

"...of the way society with his own  
 is a traditional institution in  
 families, where the mother  
 doing that kind of housework  
 will still stay in the role of the  
 housewife, even when she is  
 actually outside the  
 (JOURNALISM)"

## Perceived patient engagement

“Letting that parking space go, you know, through a bidding, took 20 days and still no parking is possible in the office. They still haven’t accepted the money by that time the auctioneer has to go to the street.” — Bob

"...the company is currently negotiating a license with the National Weather Service, the national weather authority. That's not the point of the story."

## 1. The context of implementation



### 3. The process of implementation

#### Creating an optimum virtual group dynamic

- "...are they as likely to exchange a lot of criticism in virtual conversation, as they would if they were sat next to somebody in a waiting room?" (P14\_10)
- "...I would have stopped my ideas to see 'do people want to chat?', those people want to share anything" (P14\_10)

#### Processes and training

- "...doesn't matter we couldn't do it, we absolutely could but again, we've just not quite kind of crossed that boundary in terms of what the system would look like" (P13\_09)
- "...really putting in those processes at the start and thinking about where the problems might be, where might people fall out and planning how to actually deal" (P14\_10)

### Initial Interview Findings

1. The context of implementation

2. Conceptualising implementation

3. The process of implementation

4. Capturing impact

### 4. Capturing impact

#### Uncertainty of measuring impact

- "...probably, I wouldn't put that they were more in terms of it being of a clinical benefit... I don't think I could, I don't think I could, I don't think I could" (P13\_09)

#### The need for an evidence base

- "...I don't measure the effectiveness of our group... I don't measure the effectiveness of our group... I don't measure the effectiveness of our group" (P14\_10)
- "...I don't measure the effectiveness of our group... I don't measure the effectiveness of our group... I don't measure the effectiveness of our group" (P14\_10)

#### Determining an added benefit

- "...I don't measure the effectiveness of our group... I don't measure the effectiveness of our group... I don't measure the effectiveness of our group" (P14\_10)
- "...I don't measure the effectiveness of our group... I don't measure the effectiveness of our group... I don't measure the effectiveness of our group" (P14\_10)

#### Adaptability and sustainability

- "...I don't measure the effectiveness of our group... I don't measure the effectiveness of our group... I don't measure the effectiveness of our group" (P14\_10)
- "...I don't measure the effectiveness of our group... I don't measure the effectiveness of our group... I don't measure the effectiveness of our group" (P14\_10)

### So, what does this mean?

VOCs are receptive to the context in which they are implemented and closely align with the culture of general practice

The process of the implementation depends on how VOCs are used and conceptualised, but relies heavily on having the correct processes and training in place

VOCs are pragmatically implemented, dependent on conceptualisation of the approach, practice priorities, HCP motivations and patient demand

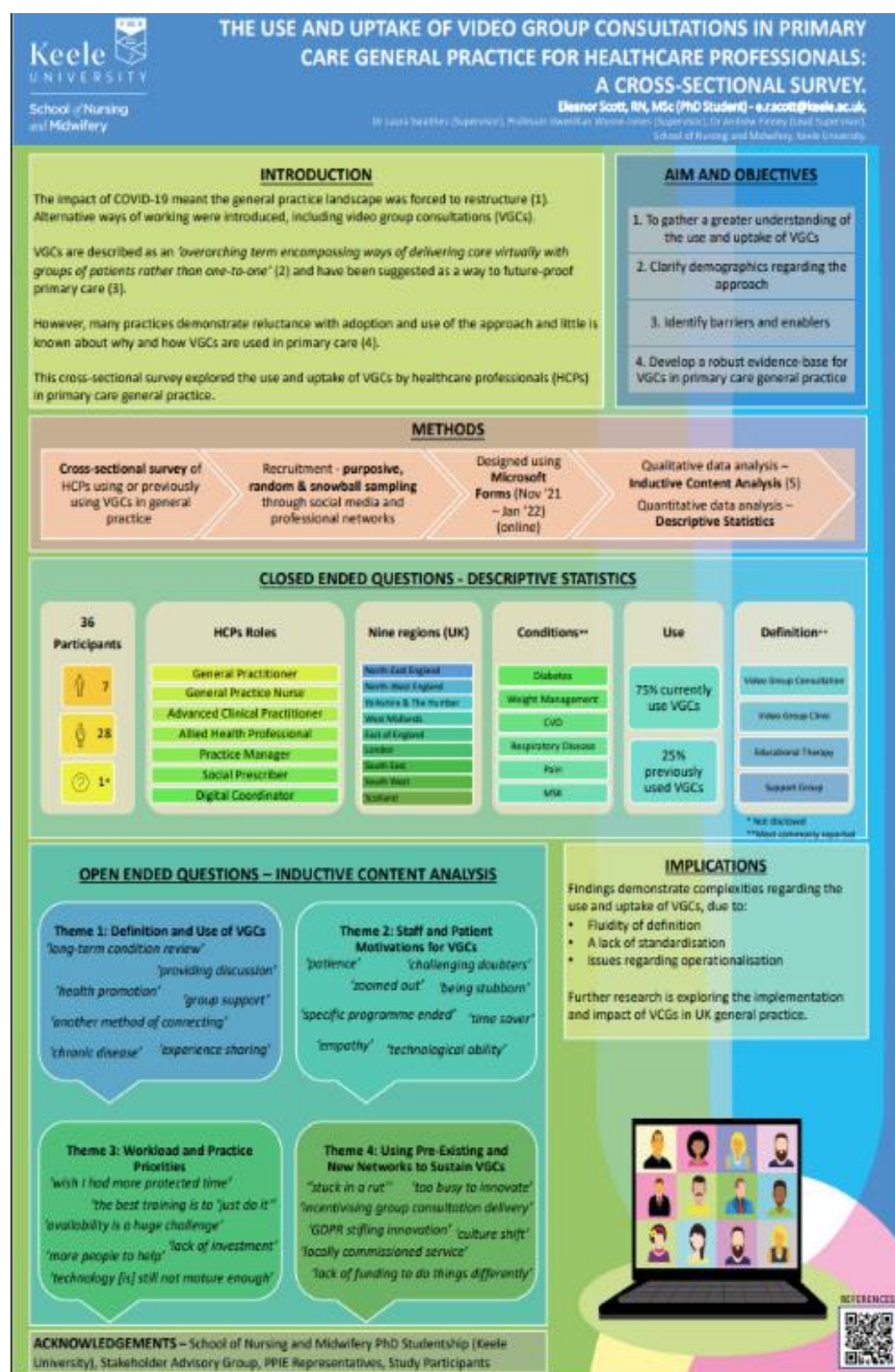
Despite the need for an empirical evidence base, the ability to capture impact is problematic, due to the inability to determine an added benefit and the adaptability of the approach makes it difficult to sustain

Close

Thankyou for listening.

Any questions welcomed!





## Appendix 5: PROSPERO registration


[Register your review now](#)

[Edit your details](#)

You have 1 records

### My other records

*These are records that have either been published or rejected and are not currently being worked on.*

ID	Title	Status	Last edited
CRD42021220258	Factors affecting uptake and delivery of video group consultations for the management of long-term conditions in primary care general practice: a systematic review	Registered	20/12/2022 

Appendix 6: Systematic Review Search Strategy for each database

OVID - MEDLINE		OVID - EMBASE		OVID - EMCARE	
MESH HEADINGS	KEY WORDS	MESH HEADINGS	KEY WORDS	MESH HEADINGS	KEY WORDS
exp Shared Medical Appointments/	(SMA or SMA*1).ti,ab,kf. (group* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf. (shar* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf. (joint* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf.	shared Medical Appointments/	(SMA or SMA*1).ti,ab,kw. (group* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kw. (shar* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kw. (joint* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kw. (combine* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kw.	shared medical appointment/	(SMA or SMA*1).ti,ab,kw. (group* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kw. (shar* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kw. (joint* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kw. (combine* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kw.

	(combine* adj3 (consult* or appointment* or meeting* or clinic* or session*))).ti,ab,kf.				
exp Videoconferencing/ exp Telemedicine/	video*.ti,ab,kf. online.ti,ab,kf remote*.ti,ab,kf. (Remote* adj3 deliver*).ti,ab,kf. virtual*.ti,ab,kf. electronic*.ti,ab,kf. e-consult*.ti,ab,kf. zoom.ti,ab,kf. whatsapp.ti,ab,kf. facetime.ti,ab,kf. accurx.ti,ab,kf. webex.ti,ab,kf. skype.ti,ab,kf. ms teams.ti,ab,kf. microsoft teams.ti,ab,kf.	videoconferencing/ exp teleconsultation/ exp telecommunication/	video*.ti,ab,kw. online.ti,ab,kw remote*.ti,ab,kw. (Remote* adj3 deliver*).ti,ab,kw. virtual*.ti,ab,kw. electronic*.ti,ab,kw. e-consult*.ti,ab,kw. zoom.ti,ab,kw. whatsapp.ti,ab,kw. facetime.ti,ab,kw. accurx.ti,ab,kw. webex.ti,ab,kw. skype.ti,ab,kw. ms teams.ti,ab,kw. microsoft teams.ti,ab,kw.	videoconferencing/ exp telecommunication/	video*.ti,ab,kw. online.ti,ab,kw. remote*.ti,ab,kw. (Remote* adj3 deliver*).ti,ab,kw. virtual*.ti,ab,kw. electronic*.ti,ab,kw. e-consult*.ti,ab,kw. zoom.ti,ab,kw. whatsapp.ti,ab,kw. facetime.ti,ab,kw. accurx.ti,ab,kw. webex.ti,ab,kw. skype.ti,ab,kw. ms teams.ti,ab,kw. microsoft teams.ti,ab,kw.

	(google adj (duo or meet)).ti,ab,kf. (telemethod* or tele method*).ti,ab,kf. digital health*.ti,ab,kf. (teleconsult* or tele consult*).ti,ab,kf. (telemedicine or tele medicine).ti,ab,kf. (telehealth* or tele health*).ti,ab,kf. (telenurs* or tele nurs*).ti,ab,kf. (telecommunication* or tele communication*).ti,ab,kf. (telepracti* or tele practi*).ti,ab,kf.		(google adj (duo or meet)).ti,ab,kw. (telemethod* or tele method*).ti,ab,kw. digital health*.ti,ab,kw. (teleconsult* or tele consult*).ti,ab,kw. (telemedicine or tele medicine).ti,ab,kw. (telehealth* or tele health*).ti,ab,kw. (telenurs* or tele nurs*).ti,ab,kw. (telecommunication* or tele communication*).ti,ab,kw. (telepracti* or tele practi*).ti,ab,kw.		(google adj (duo or meet)).ti,ab,kw. (telemethod* or tele method*).ti,ab,kw. digital health*.ti,ab,kw. (teleconsult* or tele consult*).ti,ab,kw. (telemedicine or tele medicine).ti,ab,kw. (telehealth* or tele health*).ti,ab,kw. (telenurs* or tele nurs*).ti,ab,kw. (telecommunication* or tele communication*).ti,ab,kw. (telepracti* or tele practi*).ti,ab,kw.
exp Primary Health Care/ exp General Practice/	general practi*.ti,ab,kf. (primary adj3 care*).ti,ab,kf.	exp Primary Health Care/ General Practice/	general practi*.ti,ab,kw. (primary adj3 care*).ti,ab,kw.	exp primary health care/ exp general practice/	general practitioner/ general practi*.ti,ab,kw.

exp Family Practice/ exp Physicians, Family/	medical pract*.ti,ab,kf. family practi*.ti,ab,kf. family physician*.ti,ab,kf. family doctor*.ti,ab,kf. GP.ti,ab,kf.	General Practitioner/	medical pract*.ti,ab,kw. family practi*.ti,ab,kw. family physician*.ti,ab,kw. family doctor*.ti,ab,kw. GP.ti,ab,kw.		(primary adj3 care*).ti,ab,kw. medical pract*.ti,ab,kw. family practi*.ti,ab,kw. family physician*.ti,ab,kw. family doctor*.ti,ab,kw. GP.ti,ab,kw.
---	---	--------------------------	---	--	--

OVID - MEDLINE		EBSCO - CINAHL	
MESH HEADINGS	KEY WORDS	MESH HEADINGS	KEY WORDS
exp Shared Medical Appointments/	(SMA or SMA*1).ti,ab,kf. (group* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf. (shar* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf. (joint* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf. (combine* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf.	MH Shared Medical Appointments/	TI AB SMA or SMAs TI AB group* n2 (consult* or appointment* or meeting* or clinic* or session*) TI AB shar* n2 (consult* or appointment* or meeting* or clinic* or session*) TI AB joint* n3 consult* or appointment* or meeting* or clinic* or session*. TI AB combine* n3 consult* or appointment* or meeting* or clinic* or session*
exp Videoconferencing/ exp Telemedicine/	video*.ti,ab,kf. online.ti,ab,kf remote*.ti,ab,kf. (Remote* adj3 deliver*).ti,ab,kf. virtual*.ti,ab,kf. electronic*.ti,ab,kf. e-consult*.ti,ab,kf. zoom.ti,ab,kf. whatsapp.ti,ab,kf.	exp Videoconferencing/ exp Telemedicine/ MH Remote Consultation/ exp telehealth/ MH telenursing/ exp telecommunications/	TI AB video* TI AB online. TI AB remote* TI AB "Remote* adj3 deliver*" TI AB virtual* TI AB electronic* TI AB e-consult* TI AB zoom TI AB whatsapp

	facetime.ti,ab,kf. accurx.ti,ab,kf. webex.ti,ab,kf. skype.ti,ab,kf. ms teams.ti,ab,kf. microsoft teams.ti,ab,kf. (google adj (duo or meet)).ti,ab,kf. (telemethod* or tele method*).ti,ab,kf. digital health*.ti,ab,kf. (teleconsult* or tele consult*).ti,ab,kf. (telemedicine or tele medicine).ti,ab,kf. (telehealth* or tele health*).ti,ab,kf. (telenurs* or tele nurs*).ti,ab,kf. (telecommunication* or tele communication*).ti,ab,kf. (telepracti* or tele practi*).ti,ab,kf.		TI AB facetime TI AB accurx. TI AB webex TI AB skype TI AB "ms teams" TI AB "microsoft teams" TI AB (google N (duo or meet)) TI AB (telemethod* or "tele method**") TI AB "digital health*"
exp Primary Health Care/ exp General Practice/ exp Family Practice/ exp Physicians, Family/	general practi*.ti,ab,kf. (primary adj3 care*).ti,ab,kf. medical pract*.ti,ab,kf. family practi*.ti,ab,kf. family physician*.ti,ab,kf. family doctor*.ti,ab,kf. GP.ti,ab,kf.	MH Primary Health Care/ MH Family Practice/ MH Physicians, Family/	TI AB general practi* TI AB (primary adj3 care*) TI AB medical pract* TI AB family practi* TI AB family physician* TI AB family doctor* TI AB GP



OVID - MEDLINE		OVID - JOANNE BRIGGS INSTITUTE	COCHRANE	
MESH HEADINGS	KEY WORDS	KEY WORDS	MESH HEADINGS	KEY WORDS
exp Shared Medical Appointments /	(SMA or SMA*1).ti,ab,kf. (group* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf (shar* adj3 (consult* or appointment* or meeting* or clinic* or session*)).ti,ab,kf (joint* adj3 (consult* or appointment* or meeting* or	(SMA or SMA*1).mp. (group* adj3 (consult* or appointment* or meeting* or clinic* or session*)).mp. (shar* adj3 (consult* or appointment* or meeting* or clinic* or session*)).mp. (joint* adj3 (consult* or appointment* or meeting* or	MeSH descriptor: [Shared Medical Appointments] this term only	(SMA or SMAs):ti,ab,kw  (group* NEAR/3 (consult* or appointment* or meeting* or clinic* or session*)):ti,ab,kw (shar* NEAR/3 (consult* or appointment* or meeting* or clinic* or session*)):ti,ab,kw (joint* NEAR/3 (consult* or appointment* or meeting* or clinic* or session*)):ti,ab,kw (combine* NEAR/3 (consult* or appointment* or meeting* or clinic* or session*)):ti,ab,kw

	clinic* or session*))).ti,ab,kf (combine* adj3 (consult* or appointment* or meeting* or clinic* or session*))).ti,ab,kf.	clinic* or session*))).mp. (combine* adj3 (consult* or appointment* or meeting* or clinic* or session*))).mp.		
exp Videoconferencing/ exp Telemedicine/	video*.ti,ab,kf. online.ti,ab,kf remote*.ti,ab,kf. (Remote* adj3 deliver*).ti,ab,kf. virtual*.ti,ab,kf. electronic*.ti,ab,kf .e-consult*.ti,ab,kf. zoom.ti,ab,kf. whatsapp.ti,ab,kf. facetime.ti,ab,kf. accurx.ti,ab,kf. webex.ti,ab,kf. skype.ti,ab,kf. ms teams.ti,ab,kf.	video*.mp. online.mp. remote*.mp. (Remote* adj3 deliver*).mp. virtual*.mp. electronic*.mp. e-consult*.mp. zoom.mp. whatsapp.mp. facetime.mp. accurx.mp. webex.mp. skype.mp. ms teams.mp. microsoft teams.mp.	MeSH descriptor: [Telenursing] this term only  MeSH descriptor: [Telecommunications] explode all trees MeSH descriptor: [Remote Consultation] explode all trees	video*:ti,ab,kw  online*:ti,ab,kw remote*:ti,ab,kw (remote* NEXT deliver*):ti,ab,kw virtual*:ti,ab,kw electronic*:ti,ab,kw e-consult*:ti,ab,kw  zoom:ti,ab,kw  whatsapp:ti,ab,kw facetime:ti,ab,kw accurx:ti,ab,kw  webex:ti,ab,kw

	<p>microsoft teams.ti,ab,kf.          (google adj (duo or meet)).ti,ab,kf.          (telemethod* or tele method*).ti,ab,kf.          digital health*.ti,ab,kf.          (teleconsult* or tele consult*).ti,ab,kf.          (telemedicine or tele medicine).ti,ab,kf.          (telehealth* or tele health*).ti,ab,kf.          (telenurs* or tele nurs*).ti,ab,kf.          (telecommunication* or tele communication*).ti,ab,kf.</p>	<p>(google adj (duo or meet)).mp.          (telemethod* or tele method*).mp.          digital health*.mp.          (teleconsult* or tele consult*).mp.          (telemedicine or tele medicine).mp.          (telehealth* or tele health*).mp.          (telenurs* or tele nurs*).mp.          (telecommunication* or tele communication*).mp.</p>	<p>skype:ti,ab,kw            "ms teams":ti,ab,kw          "microsoft teams":ti,ab,kw          google NEXT (duo or meet):ti,ab,kw            (telemethod* or (tele NEXT method*)):ti,ab,kw          (digital NEXT health*):ti,ab,kw          (teleconsult* or (tele NEXT consult*)):ti,ab,kw          (telemedicine or (tele NEXT medicine)):ti,ab,kw          (telehealth* or (tele NEXT health*)):ti,ab,kw          (telenurs* or (tele NEXT nurs*)):ti,ab,kw          (telecommunication* or (tele NEXT communication*)):ti,ab,kw          (telepracti* or (tele NEXT practi*)):ti,ab,kw</p>
--	---	--	--

	(telepracti* or telepracti*).ti,ab,kf.	(telepracti* or telepracti*).mp.		
exp Primary Health Care/ exp General Practice/ exp Family Practice/ exp Physicians, Family/	general practi*.ti,ab,kf. (primary adj3 care*).ti,ab,kf. medical pract*.ti,ab,kf. family practi*.ti,ab,kf. family physician*.ti,ab,kf . family doctor*.ti,ab,kf. GP.ti,ab,kf.	general practi*.mp. (primary adj3 care*).mp. medical pract*.mp. family practi*.mp. family physician*.mp. family doctor*.mp. GP.mp.	MeSH descriptor: [Primary Health Care] explode all trees  MeSH descriptor: [General Practice] explode all trees MeSH descriptor: [Physicians, Family] this term only  MeSH descriptor: [General Practitioners] this term only  MeSH descriptor: [Physicians, Primary Care] this term only	(general NEXT practi*):ti,ab,kw (primary NEXT care*):ti,ab,kw (medical NEXT practi*):ti,ab,kw (family NEXT practi*):ti,ab,kw (family NEXT physician*):ti,ab,kw (family NEXT doctor*):ti,ab,kw GP:ti,ab,kw

## PRISMA-S Checklist

Section/topic	#	Checklist item	Location(s) Reported
<b>INFORMATION SOURCES AND METHODS</b>			
Database name	1	Name each individual database searched, stating the platform for each.	3.3.3 Search Strategy
Multi-database searching	2	If databases were searched simultaneously on a single platform, state the name of the platform, listing all of the databases searched.	3.3.3 Search Strategy
Study registries	3	List any study registries searched.	Cochrane Trial Registry
Online resources and browsing	4	Describe any online or print source purposefully searched or browsed (e.g., tables of contents, print conference proceedings, web sites), and how this was done.	N/A
Citation searching	5	Indicate whether cited references or citing references were examined, and describe any methods used for locating cited/citing references (e.g., browsing reference lists, using a citation index, setting up email alerts for references citing included studies).	Forward and backward citation searching, searching of reference lists

Contacts	6	Indicate whether additional studies or data were sought by contacting authors, experts, manufacturers, or others.	Contacted authors at full-text stage to clarify comparable settings
Other methods	7	Describe any additional information sources or search methods used.	N/A
<b>SEARCH STRATEGIES</b>			
Full search strategies	8	Include the search strategies for each database and information source, copied and pasted exactly as run.	3.3.3 Search Strategy
Limits and restrictions	9	Specify that no limits were used, or describe any limits or restrictions applied to a search (e.g., date or time period, language, study design) and provide justification for their use.	3.3.3 Search Strategy
Search filters	10	Indicate whether published search filters were used (as originally designed or modified), and if so, cite the filter(s) used.	3.3.3 Search Strategy
Prior work	11	Indicate when search strategies from other literature reviews were adapted or reused for a substantive part or all of the search, citing the previous review(s).	N/A
Updates	12	Report the methods used to update the search(es) (e.g., rerunning searches, email alerts).	Re-running searches and email updates
Dates of searches	13	For each search strategy, provide the date when the last search occurred.	3.3.3 Search Strategy
<b>PEER REVIEW</b>			
Peer review	14	Describe any search peer review process.	3.3.3 Search Strategy

MANAGING RECORDS			
Total Records	15	Document the total number of records identified from each database and other information sources.	3.4.1 Identification of studies
Deduplication	16	Describe the processes and any software used to deduplicate records from multiple database searches and other information sources.	3.4.1 Identification of studies

*Appendix 8: Reasons for the exclusion of studies in the systematic review*

---

<b>REASONS FOR EXCLUSION</b>	
<b>POPULATION</b>	<p>Mental Health, Learning Disabilities and Palliative Care were excluded on the basis that these conditions infer a therapeutic consultation approach</p> <p>Patients without long-term conditions, HCPs outside of primary care general practice, HCPs not using video group consultations were not included as they do not meet the requirements of the review question</p>
<b>INTERVENTION</b>	<p>Consultations which are face-to-face, or individual do not meet the requirements of the review question</p> <p>Therapeutic, treatment and rehabilitation groups were excluded as are not specifically defined as a video group consultation, as proposed by ELC Works (2024a)</p>
<b>SETTING</b>	<p>Secondary Care, Tertiary Care, Specialised Care, Mental Health, Learning Disability settings and any other healthcare specialities not managed in primary care general practice were not included as requirements of the review question</p>



<b>REASONS FOR EXCLUSION</b>	
	Settings, such as outpatient clinics, were only included if they were comparable to a UK general practice setting, in which they provide general medical care as a first point of contact. Studies which were defined as outpatients and did not provide this service were excluded.
<b>STUDY DESIGN</b>	<p>Systematic Reviews were not included as this review will focus on primary studies, but relevant systematic review reference lists will be hand-searched for primary studies</p> <p>Case studies, case reports, opinion papers, commentaries, protocols/on-going studies, editorials, correspondence, theses and conference proceedings were excluded as considered low-level evidence, according to the hierarchy of evidence (Centre for Evidence-Based Medicine, 2021).</p>
<b>LANGUAGE</b>	Translation of articles was not feasible in the time scale for this research study
<b>PUBLICATION PERIOD</b>	Studies were only included from 2014 to the present day, after conducting scoping searches which identified the growth of virtual interventions in primary care have occurred over the last 10 years. Exact publication period was not stipulated on PROSPERO as scoping searches had not been fully completed when this was approved

**Quality Appraisal Narrative Summary of Final Full-text Papers**

**(CASP + MMAT)**

**1. Papoutsi et al. (2022)**

*CASP: Qualitative*

*MMAT: Qualitative*

The paper by Papoutsi et al. (2022) identified clear aims and objectives of the research, with an appropriate qualitative methodology used. They used a triangulation of different qualitative methods to gather views and experiences of implementing VGCs and had exploratory aims. However, the use of a qualitative methodology was not justified explicitly, only aligning to the aims of the research.

Papoutsi et al. (2022) used an appropriate recruitment strategy, using purposive and random sampling across eight practice locations. Participants were recruited through training providers, NHSE programme and interview recommendations.

Data collection was collected in a way that addressed the research question using qualitative methods. There was no justification for the methods used, but clarification of how were undertaken was evident.

No discussion regarding the relationship between researcher and participants was addressed. Ethical issues had been taken into consideration, with the correct ethical approvals sought.

Data analysis was presented as rigorous with an in-depth presentation of themes, using inductive and deductive analysis. This followed with a clear statement of findings, using participant quotations and triangulation of researchers during analysis. There is a clear coherence between qualitative data sources, collection, analysis and interpretation.

This study is extremely valuable to the evidence base on video group consultations. They recognise the limitations of their research and identify areas for future research.

## 2. **Ritchie et al. (2023)**

*CASP: Cohort and Qualitative*

*MMAT: Qualitative, Quantitative non-randomised and Mixed-Methods*

Note: Only used VGCs in the latter half of the trial – unable to distinguish outcomes related to VGCs rather than in-person SMAs.

The study by Ritchie et al. (2023) is a multimethod evaluation of a pragmatic trial of diabetes shared medical appointments. Using an appraisal tool for this study design was difficult as it didn't seem to capture the requirements of the methodologies proposed. The use of the MMAT seems to capture the study design more appropriately due to the flexibility in research designs.

As a whole, the paper addressed a clearly focused research question, using a PICO format. The use of multiple methods to answer the research question was deemed appropriate, yet a justification was not documented. Participants were recruited appropriately with the use of a study facilitator.

It was not possible to note whether the exposure was accurately measured to minimise bias due to the little clarity regarding whether an in-person or virtual SMA was delivered. However, there was a standardised intervention across both patient driven and standardised SMAs. There was also a difference in numbers due to practice size and different ethnicities. The outcomes were accurately measured to minimise bias with the use of both objective and subjective measures.

Confounders were not documented. The follow-up was complete enough for the intervention and was long enough due to the study period being over 2 years.

In the qualitative section of this paper, the research design was appropriate to address the aims of the research, referring to the barriers and facilitators related to participation. The recruitment strategy was also appropriate for the aims of the research, using individuals who had undertaken VGCs. However, participants were incentivised to take part with a \$10 gift card.

Qualitative data collection addressed the research question, used individual semi-structured interviews to gather views and experiences on participation. The contents of the topic guides was discussed. Although, no justification of methods chosen or no mention of data saturation.

No discussion regarding the relationship between researcher and participants was addressed. Ethical issues had been taken into consideration, with the correct ethical approvals sought.

Qualitative data analysis was rigorous as there was a use of inductive and deductive coding using thematic analysis as a framework. There were multiple coders involved and they used participant quotations to support interpretations. Findings were discussed at length, in relation to the research question.

Results from this study can be applied to the local context, yet it is hard to distinguish which results were based on virtual adaptations of SMAs and in-person delivery. It provides useful results on the reach and attendance of virtual and in-person groups. This intervention would have to be applied pragmatically, taking into account different practice settings in the USA and the UK.

With regards to the multimethods nature of the study, there was an adequate rationale for using multiple methods to address the research question, integrating the study results effectively to provide a comprehensive answer. The outputs of integration of qualitative and quantitative components were adequately interpreted. However, there was no report for the divergencies or inconsistencies in and between the data sets. Both different components of the study adhere to the quality criteria of each method used.

### 3. Tokuda et al. (2016)

*CASP: Cohort and Qualitative*

*MMAT: Qualitative, Quantitative non-randomised and Mixed-Methods*

Tokuda et al. (2016) present a multimethod study focusing on the utilisation of video-conference shared medical appointments in rural diabetes care. Several quality appraisal checklists have been used to capture the diversity in the research methods presented.

Overall, the study addressed a clearly focused research issue, with aims clearly stated.

The cohort element of the study consisted of appropriate recruitment of participants, in which they were recruited by their primary care providers, have a HbA1c > 7 and have documented diabetes.

CONSORT diagram provided. No other demographics provided. The exposure referred to the groups of participants, in which they were equally split into exposure groups to minimise bias. The intervention was delivered equally to the participants in the intervention group. The outcomes included both objective and subjective measures to minimise bias.

It is not reported that authors had identified confounding factors, although, standard error of the mean calculated to demonstrate preciseness of the results. Adjustments to baseline characteristics were made when significant imbalances were present. Use of linear mixed models and standard error of the mean was evident.

It is not possible to tell if the follow up of subjects was complete due to the nature of the study. However, it was considered long-enough as the intervention was over 5 months.

The qualitative component consisted of focus groups, a survey and interviews. A qualitative methodology was appropriate due to the need to gather experiences of the intervention and therefore used an appropriate research design to do so. The recruitment strategy was appropriate in which survey participants were gathered from the VGCs themselves. Focus group participants were those who were willing to

stay after the VGC and interviewees were those running the VGCs themselves. Data was collected in an appropriate way using a mixture of qualitative research methods.

No discussion regarding the relationship between researcher and participants was addressed. Ethical issues had been taken into consideration, with the correct ethical approvals sought.

It is not possible to tell if the data analysis is rigorous due to the lack of documentation around this. There is no mention of the analysis methods used and therefore interpretation of results is ambiguous. However, a clear statement of findings is presented with supporting quotations.

The results of the study were a mixture of qualitative and quantitative results. They demonstrate the feasibility of VGCs and a difference between VGCs and usual care. Small confidence intervals are presented, and reported standard deviation, interquartile range, small error of the mean and p values.

Tokuda et al. (2016) recognise the limited applicability of this study due to the context and small sample size.

#### **4. Brown et al. (2020)**

*CASP: Cohort*

*MMAT: Quantitative non-randomised and Quantitative descriptive*

The Brown et al. (2020) study presented a clearly focused issue on the use of telemedicine SMAs for obesity, in which a weight management programme was delivered in under served areas and rural communities. Focused outcomes were presented, including weight outcomes and patient and provider evaluations.

It was not possible to tell whether the cohort was recruited in an acceptable way as participants were identified purposively by primary care providers and incentivised by payments. It was voluntary enrolment but had a defined eligibility criteria related to BMI. Participants were not

considered to be representative of the target population as not all demographics were obtained.

This study did not seem to fit the traditional cohort study design with an exposure and outcome. Exposure related to the eligibility criteria in which there was no mention of classification between exposure groups. All participants were from medically underserved practices. The intervention was standardised across all participants. Outcomes were measured to minimise bias, focusing on both objective and subjective measures. Participants were not blind to the exposure, but this did not affect outcomes.

It wasn't possible to tell whether the authors had identified all important confounding factors. There was a lack of participant demographics presented and no measurement of other outcomes such as BP, height. The lack of identification of confounders was reported as a limitation of the study. Follow up of subjects was around 4 months. There was not complete outcome data with 62% completed.

Results of the study confirmed that telemedicine weight management is feasible. However, there is no control group to compare to in-person SMAs or 1:1 consultation. Standard deviations were provided. Results are demonstrated as trustworthy with small *p* values and little variation in results. However, they removed outlier measurements.

The quantitative descriptive component of the study used a sampling strategy which was relevant to address the research question yet cannot be representative of the population due to the limited demographic data. The measurements used were appropriate to capture the necessary data but there was a high risk of non-response bias. The statistical analysis used was appropriate for the research question.

The results of this study can be applied to the local population and fit with other available evidence.

## **5. Nuñez et al. (2022)**

*CASP: Qualitative and Cohort*

*MMAT: Qualitative, Quantitative non-randomised, Quantitative descriptive and Mixed-Methods*

The study by Nuñez et al. (2022) presents a mixed-methods study using a combination of research methods. A mixture of quality appraisal tools therefore was used to capture the diversity in research design.

The intervention was appraised using a cohort design, whereby this component of the study addressed a clearly focused issue with the aims and objectives of the study justified. The cohort of federally qualified health centres were recruited in an acceptable way, through voluntary application. However, it was not stated how HCPs and patients were recruited. The exposure related to the intervention itself, consisting of monthly VGCs with patients with T2DM. There were no other exposure statuses reported. Outcomes were accurately measured to minimise bias, including objective and subjective measures.

There was no reporting on confounding variables. Follow up was deemed to be adequate to address the needs of the research question.

Results of the study confirmed a successful adaption from in-person to virtual group consultations and identified the challenges and facilitators of implementation. Standard deviations were provided in some cases.

The quantitative descriptive component of the study consists of a survey with a sampling strategy relevant to address the research question. Participants are representative of the target population and measurements are appropriate. However, there was a risk of non-response bias. The statistical analysis was appropriate to the research question.

The qualitative components of the study consisted of interviews and session logs. There was a clear statement of the aims of the research with an appropriate qualitative methodology focusing on the barriers and facilitators, and experiences of the intervention. The recruitment strategy was appropriate consisting of recruitment of staff in the VGC



programme and patients enrolled by sites. Data collection was collected in a way which addressed the research question, using multiple forms of qualitative data. However, justification of methods used were not provided.

No discussion regarding the relationship between researcher and participants was addressed. Ethical issues had been taken into consideration, with the correct ethical approvals sought for adaption to a virtual programme.

Qualitative data analysis was in-depth using the interview guide to create the codebook for analysis. Independent coding took place. There was a clear statement of findings presented in relation to the research question.

The use of mixed methods used increased the trustworthiness of results, which may it applicable to the local population. Although, results are not deemed as generalisable due to the differences in context.

## **6. Patel et al. (2020)**

*CASP: Cohort*

*MMAT: Quantitative non-randomised and Quantitative descriptive*

Patel et al. (2020) conducted a study on the feasibility and acceptability of telemedicine for group visits with the aims clearly stated and context justified. The cohort was recruited in an acceptable way through the clinic and using a defined eligibility criterion. The cohort was considered to be representative of the target population. The exposure related to the participants included which included patients with documented T2DM, HBA1c >6.5, ability to understand Spanish and are Latino. The exposure of the intervention was also comparable across participants. All participants undertook a group consultation (in-person) but had an individual virtual visit with a healthcare professional. The outcomes were accurately measured to minimise bias through the use of both objective and subjective measures. Measurements were seen to be appropriate

for the intervention and outcomes. It is not possible to tell if there is complete outcome data.

The authors did not report on any confounding factors nor took this into consideration during the design or analysis. It was not possible to tell whether the follow up of subjects was complete or long enough. The risk of non-response bias is high.

The results of this study demonstrated potential use of VGCs for long-term conditions. Standard deviations and means were provided.

Overall, it is not possible to tell whether the results can be applied to the local population from this individual study.

## **7. Mirsky et al. (2023)**

*CASP: Cohort*

*MMAT: Quantitative descriptive*

Mirsky et al. (2023) used an end-point survey of a cohort study to determine associations between patient attendance patterns and self-reported behaviour change in primary care based on a lifestyle medicine group visit programme. The use of the CASP cohort quality appraisal checklist was the most appropriate study design using this programme and therefore supplemented using MMAT.

The aims and objectives of the research were clearly stated. The cohort was recruited in acceptable way, as those involved were recruited if they had been involved in the programme. It was voluntary but a \$5 incentive was given for participation. The sample may not be representative of the target population due to the eligibility criteria implied. The exposure related to the participants, with a pre-defined eligibility criterion. The outcome was accurately measured by a survey to eliminate bias, however, they only used subjective criteria to report behaviour change. No comparisons were made in the survey.

There was no reporting of potential confounders. There was no follow-up period due to the cross-sectional nature of the study. A limitation of the study was the low response rate and therefore there may be a risk of non-response bias.

Results of the study demonstrated the feasibility of using VGCs to instil behaviour change to manage long-term conditions. No confidence intervals were reported.

Study was subject to recall bias as it was a subjective reporting of lifestyle change and no objective measures were demonstrated. It was a small sample size and highly dependent on context.

The study did not report using the STROBE guidelines (von Elm et al., 2007), and therefore not considered to be truly cross-sectional but rather the survey end-point of a cohort study (Mirsky et al., 2022).

## **8. Dinh et al. (2023)**

*CASP: Cohort*

*MMAT: Quantitative non-randomised and Quantitative descriptive*

The study by Dinh et al. (2023) presented a single-arm pilot study to test the impact of virtual diabetes group visits in midwestern community centres. Aims and objectives of the research were clearly stated. The cohort was recruited in an acceptable way identified against a pre-defined eligibility criterion. The exposure status related to the participants themselves, including patients with diabetes, > 18 years hold, English and Spanish speaking, HbA1c > 8, >2 clinic visits in the last year and > 1 in the last 6 months. Exposure also related to the intervention which was comparable across participants and sites. Baseline characteristics provided. The outcome was accurately measured to reduce bias, including objective and subjective measures.

Authors did not report on confounding variables in the design or analysis. Follow-up was considered appropriate for the research design.

Results demonstrate positive effects on diabetes outcomes and confidence intervals/standard deviations are provided. Results are contextual and cannot be applied to the local population due to the small sample size and most of the sample were women.

9. **Mash et al. (2023)**

*CASP: Qualitative*

*MMAT: Qualitative*

Mash et al. (2023) focused on piloting a virtual group education for diabetes in Cape Town, with clear aims and objectives discussed. A qualitative methodology was deemed appropriate due to the exploratory research aims and the want to explore the experiences of VGC from the perspectives of facilitators and patients. No justification of the methods used was provided. Patients were recruited from the facilitator, but no indication of how the facilitators were recruited. Data was collected in a way that addressed the research issue, using appropriate qualitative methods.

The relationship between researcher and participants was explicitly considered. Correct ethical approvals were granted for the research study. There was limited detail about the data analysis conducted, with use of a framework. Limited details regarding the framework used were provided. There was a clear statement of findings presented with use of participant quotations to support points made.

Findings were reported as tentative and difficult to transfer to a wider context.

10. **Mirsky et al. (2022)**

*CASP: Cohort*

*MMAT: Quantitative non-randomised*

Note: This is noted as a quality improvement initiative but provides value in answering the research question. This will be considered in the rigor of the systematic review and the final synthesis product.

Mirsky et al. (2022) focused on testing a hypothesis that a primary care physician led VGC series integrating hypertension management education, lifestyle medicine, health and wellness coaching and home blood pressure monitoring could lead to the optimisation of medication regimes. This study didn't seem to fit a particular quality appraisal tool and therefore the CASP cohort checklist was most appropriate, supplemented with MMAT quantitative non-randomised checklist.

The study presented a clear aim of the research. However, there was no mention of how participants were recruited. The exposure related to the intervention and participants in which the same intervention was given. Outcomes were objective in nature and therefore eliminated any potential bias. There were no baseline measurements reported and therefore no indication that the sample is representative of the target population.

Authors did not identify any confounding variables in the design or analysis and reported this explicitly as a limitation. It was not possible to tell whether the follow up of subjects was complete and long enough.

Results of this study suggested that VGCs have an impact on HBPM, and descriptive statistics were provided to illustrate this. Interquartile ranges were presented as well as a violin plot.

The applicability of these results to the wider population is limited due to the small sample size employed.

#### 11. **Lin et al. (2022)**

*CASP: Cohort*

*MMAT: Did not pass screening questions*

Note: Abstract – full-text exclusion

The study by Lin et al. (2022) did not pass screening questions as there was no clear research question and data collection did not answer any research question.

The CASP cohort checklist allowed for further quality appraisal. The paper did address a clearly focused issue despite not having a specific research question. However, the recruitment strategy was not clearly presented. This led to the study exclusion at full-text stage due to the nature of the study design as noted as conference proceedings.

## 12. **Drake et al. (2023)**

*CASP: Cohort*

*MMAT: Quantitative non-randomised*

Note: States that the study is non-research

The study by Drake et al. (2023) focused on the feasibility of adapting in-person group settings to a virtual format. They addressed a clear research question and appropriately recruited patients in the study through their electronic health records and was voluntary in nature. It was difficult to tell whether the exposure was accurately measured to minimise bias as there was little description of the group and the intervention they received, other than the intervention being targeted for diabetes and CKD. Baseline characteristics were provided. The outcome was demonstrated as accurately measured, using both objective and subjective measures to define outcomes.

Confounders were not reported in this study, and the study period was over 4 months, allowing for adequate follow up.

Results of this study demonstrate the feasibility of adapting an in-person group visit model to a telehealth setting. Statistics such as Wilcoxon signed rank tests and two-sided  $p$  values were provided to demonstrate the preciseness of results. However, the applicability of these results to local settings is ambiguous due to the small sample size and lack of representativeness.

13. **Hansen et al. (2023)**

*CASP: Cohort*

*MMAT: Quantitative non-randomised*

NOTE: Study is non-research as a quality improvement project

Hansen et al. (2023) addressed a clearly focused research issue, with the need for the study identified through the context and aims discussed. Limited details of the recruitment process were given but patients were recruited through their cardiology provider. The exposure was accurately measured to minimise bias with a clearly defined inclusion and exclusion criteria and standardised intervention. It is not possible to tell if the outcome was accurately measured as there is limited documentation on outcomes. Outcomes seem to be self-reported by patients, but this is not explicitly identified.

There was no documentation of confounders or to be able to make a judgement on the follow up of participants.

Results demonstrated that VGCs allowed for continued heart failure education during COVID-19. However, the preciseness of results is unknown. The study consisted of a small sample size which is not representative and therefore it is unknown whether this can be applied to local populations.

14. **Dhaver et al. (2023)**

*CASP: Cohort*

*MMAT: Quantitative non-randomised*

The study by Dhaver et al. (2023) focused on the feasibility of adapting in-person and virtual multi-disciplinary weight management programme to a hybrid modality. They addressed a clear research question and appropriately recruited patients in the study through practice programme enrolment. The exposure was comparable between groups but was not comparable across different modalities. There was also a different

number of patients within each exposure group. The outcome was demonstrated as accurately measured, using objective measures to define outcomes i.e. use of clinical data.

Confounders were not reported in this study, although a number of statistical tests were used to account for difference. The study period was deemed long enough and adequate for follow-up.

Results of this study demonstrate the feasibility of adapting an in-person and virtual weight management programme to a hybrid approach. Confidence intervals and standard deviations were provided to demonstrate the preciseness of results. These results, whilst only a small sample size would be relevant to the local population and creates further opportunities for research in this area.



*Appendix 10: PRISMA Checklist for the reporting of Systematic Reviews (Page et al., 2021)*

Section and Topic	Item #	Checklist item	Location where item is reported (Chapter – Section)
<b>TITLE</b>			
Title	1	Identify the report as a systematic review.	Systematic review - Introduction
<b>ABSTRACT</b>			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	N/A
<b>INTRODUCTION</b>			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Literature review
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Systematic review – Aims and objectives
<b>METHODS</b>			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Systematic review – Study selection
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Systematic review – Search strategy
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Appendix 5: Systematic review search strategy for each database
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Systematic review – Study screening
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Systematic review – Study screening

Section and Topic	Item #	Checklist item	Location where item is reported (Chapter – Section)
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Systematic review – Data extraction
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Systematic review – Data extraction
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Systematic review – Quality appraisal
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	N/A
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Systematic review – Data extraction
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	N/A
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Systematic review – Results
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Systematic review – Narrative synthesis
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Systematic review – Narrative synthesis
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	N/A
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	N/A
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	N/A

Section and Topic	Item #	Checklist item	Location where item is reported (Chapter – Section)
<b>RESULTS</b>			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Systematic review – Results
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Systematic review - Results
Study characteristics	17	Cite each included study and present its characteristics.	Systematic review - Results
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Systematic review – Quality appraisal
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	N/A
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Systematic review – Quality appraisal
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	N/A
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Systematic review – Narrative synthesis
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	N/A
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	N/A
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	N/A

Section and Topic	Item #	Checklist item	Location where item is reported (Chapter – Section)
<b>DISCUSSION</b>			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Systematic review – Discussion
	23b	Discuss any limitations of the evidence included in the review.	Systematic review – Discussion
	23c	Discuss any limitations of the review processes used.	Systematic review – Discussion
	23d	Discuss implications of the results for practice, policy, and future research.	Systematic review – Discussion
<b>OTHER INFORMATION</b>			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Systematic review - Methods
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	PROSPERO
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	N/A
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Funding acknowledgments
Competing interests	26	Declare any competing interests of review authors.	N/A
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	N/A

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

## **Narrative Synthesis - Narrative Textual Descriptions**

### **Papoutsi et al. (2022)**

**Aim and Objectives:** This study focuses on the different approaches to VGC delivery and practice level implementation challenges, addressing:

- What types and formats of remote group-based care have been delivered in the context of COVID-19 in English general practice?
- How did multiple interacting influences shape VGC implementation?
- What were the views and experiences of patients and staff?
- What operational work and organisational adaptations were needed to deliver VGCs for different conditions and population groups?

**Definition of VGC:** It is a pre-requisite for group consultations to incorporate clinical care in a group setting (rather than purely education or peer support)

**Methods:** Qualitative research with eight general practices in England. Data collection took place from April 2020-April 2021.

- 32 semi-structured interviews with 15 NHS staff, five patients who had participated in or declined VGCs, five national policy makers and programme managers and three participants from training providers and the IT industry.
- Longitudinal observation (12 months) in two practices
- Observation of online training, policy and programme meetings and industry meetings
- Patient feedback survey
- Three workshops with industry and co-design partners

Data analysis evolves in parallel with fieldwork and was informed by the Planning and Evaluating Remote Consultation Services framework.

### **Findings:**

**Diversity of formats and purposes:** VGC terminology was used interchangeably regardless of whether an individually focused clinical consultation took place in the group setting. Diversity of formats and purposes and finding the 'right' format is challenging. Clinical and mixed

VGCs often require a bigger cultural shift from usual care practices. Many practices choose to deliver the 'safer' educational VGCs. All formats had a combination of formal and informal components, delivered as scheduled sessions. Patients were targeted to attend, with specific health or social needs. Patient participation was either periodic, such as an annual review, or more regular, as a programme. Staff who were interviewed mainly delivered clinical or mixed formats across a range of conditions and needs. Conditions using VGCs: diabetes, asthma, COPD, cancer, mild COVID-19, anxiety, postnatal care, and healthy eating support. Use of results board, displaying clinical information.

Sessions usually last 1-1.5 hours, and the clinician would consult individually with patients in a group. Clinical and non-clinical staff deemed training as useful for delivery and implementation.

### **Relationship-focused care in VGCs:**

*Establishing online rapport:* Staff reported a strengthening of relationships between patients, clinicians, and the practice team. VGCs can appear 'scripted' and difficult to establish an online rapport, unlike face-to-face group consultations. Some patients valued the ability to share with other patients, however, others felt this was inefficient, with many discussions not related to all patients.

*Relying on pre-existing and new relationships:* Having a pre-existing relationship with patient helped overcome barriers with the virtual nature of the consultation. If a pre-existing relationship with patients was not possible, staff took the time going through medical records to best guide the discussion. If this was not possible, a fragmentation in care was evidence, and need for extra sessions was necessary. With time, clinicians better facilitated patient relationships.

*Patients valuing access and connection:* Pandemic was a facilitator of VGCs. Online access aids convenience for patients, with regards to time and access, and helps those with the anxieties of social settings. Patients felt better connected to the practice through VGCs, as VGCs foster a greater relationship with patients and are more 'personalised' to patient's needs. Patients valued the 'human connection' felt in VGCs when sharing experiences and satisfaction knowing others have the same or similar condition.

*Challenges with digital inclusion:* Sessions primarily involved patients with good IT skills.

Patients faced difficulties with technology and concerns regarding access were evident.

### **Using VGCs to address organisational priorities:**

*Staff motivations for setting up VGCs:* Staff viewed VGCs as the 'next step,' due to advancements in remote consulting.

Motivations were demand-led e.g. backlog, and performance-driven e.g. QOF.

VGCs to aid patient access, to improve patient satisfaction and experience.

*Workload and practice commitment:* Significant time commitment in setting up and delivered VGCs and changes to administrative processes.

Required support at all practice levels to free-up resources and distribute workload.

Need for a champion.

*Enabling relational coordination in practice:* Involves staff coordinating together to set-up and deliver sessions.

Need for collaborative practice, a shift away from traditional hierarchical working.

*Establishing roles and skillset on remote group-based care:* Staff believed VGCs extended their skillset and were able to take on additional duties and responsibilities.

Some staff received VGC training but were reluctant to take any VGC responsibilities due to lack of time, lack of organisational slack and complexity of group-based care.

*IT and infrastructure challenges:* Supporting patients with IT required significant work.

IT equipment shortages and network bandwidth was a barrier to remote care.

MS Teams created challenges with its features and integration.

Staff argued technical problems looked 'unprofessional' and could influence patient engagement.

*Balancing concerns on patient risk and information governance:*

Governance was relaxed in the COVID-19 context.

VGCs raised new ethical concerns which led to a rethinking of local clinical safety judgements regarding confidentiality and safeguarding.

### **Discussion:**

VGCs were organised in different ways depending on practice-level needs and priorities and organisational capacity for innovation,

incorporating different degrees of clinical, educational, and/or informational content.

Patients valued the human connections and increased access.

VGC implementation required a change in organisational processes, shift in professional roles, increased collaborative working and staff capacity, digital and online facilitation skills, and availability of equipment and IT structures.

Staff required training and support with complex changes.

Staff and patients were supportive of VGCs continuing beyond the pandemic.

First study on VGCs in English general practice

Small sample means that wider developments may have been missed.

Strengthened by observation in group settings and additional patient interviews.

It is a pre-requisite for group consultations to incorporate clinical care in a group setting (rather than purely education or peer support). The extent this happens varies.

Different models have been adopted to meet local needs and priorities.

### **Tokuda et al. (2016)**

**Aim and Objectives:** To explore whether video-shared medical appointments (video-SMA), where group education and medication titration provided remotely through video conferencing technology would improve diabetes outcomes in rural settings.

This study targets the socio-geographic barriers in rural diabetes care.

**Definition of VGC:** Shared medical appointments are defined as group visits in which several patients meet with one or more providers(s) at the same time. The SMA providers deliver interactive discussions to shape values that the person places on a given outcome in an environment of peer support. Efficient method to achieve guideline recommendations in diabetes through efficient resource use, improvement of access to care and promotion of behavioural change with peer support.

**Methods:** Pilot study where a clinical pharmacist and nurse practitioner from a hospital-based outpatients' clinic remotely delivered video-SMA for diabetes in Guam.

Patients with diabetes and a HbA1c >7% were enrolled in the study during 2013-2014.

31 patients received the intervention, and 69 patients were the control (e.g. usual care)

Six groups of 4-6 patients attended 4 weekly sessions, followed by 2 bi-monthly booster sessions for 5 months, lasting 120 minutes.

Compared changes in HbA1c, blood pressure and lipid levels.



Analysed emergency department visits and hospitalisations.

Sessions consisted of education with behavioural and pharmacological interventions for diabetes, hypertension, and hyperlipidaemia. Patients were given an individual cardiovascular risk report card with updated lab results and current vitals. These report cards were updated periodically throughout the programme. Medications were also titrated based on these report cards.

A survey was distributed to patients who had attended video-SMAs. Outcomes focused on patient activation, delivery system design/decision support, goal setting, problem-solving/contextual counselling, follow-up/coordination.

Focus groups were used to understand patients' perceptions about the barriers and facilitators to diabetes self-management and perceived reasons for non-adherence to health behaviours.

Interviews were conducted with providers to elicit input about health system barriers to diabetes care, and how video-SMA may or may not have overcome those barriers, satisfaction with this model of care and whether video-SMAs provide better diabetes care.

### **Findings:**

Attendance was high across the 6 sessions (87%)

After 5 months, there was a significant decline in HbA1c in video-SMA vs. usual care.

No significant change in blood pressure or lipid levels was found between groups.

Patients in the video-SMA had significantly lower levels of ED visits but hospitalisation rates were similar between groups.

Patients in the video-SMA had a trend towards high prescription rates of metformin.

*PACIC Survey:* 19 patients completed the survey. PACIC summary score was 4.5 which demonstrates a concordance with the tenets of the chronic care model.

*Focus groups:* 15 patients and two members of social support participated in 4 focus groups. Six themes emerged:

1. *Overall satisfaction with the video-SMA experience* – Patients expressed enjoyment with video-SMAs and helped them manage their condition. Satisfied with clinical care and management. Some patients wanted more 'individual' time with the provider and others expressed dissatisfaction with a dominant group member in the session.

2. *Patients feeling that the information provided was informative and personally beneficial* – increase in knowledge gained from video-SMAs.
3. *Improved awareness of the importance of social support in diabetes* – learned from others in the group and peer support was beneficial.
4. *Improvement in self-efficacy to perform self-care behaviours* – increased motivation for self-care and an improvement in self-care skills.
5. *An increased concern over health and life expectancy*
6. *Satisfaction with the cultural competency of the video-SMA providers and the use of culturally appropriate educational materials*

*Interviews:* Four themes emerged from the semi-structured interviews

1. *Overall satisfaction with the video-SMA experience* – rewarding to see improvement in clinical outcomes.
2. *Perceived benefits for patients* – peer support as a benefit, contributing to patient outcomes.
3. *Health system barriers to diabetes care and potential resolutions for these barriers* – physical distance made management of long-term conditions difficult e.g. obtaining results and medications, lack of support staff and time identified.
4. *Effective video-SMA facilitation strategies and key elements* – use of interactive games, patient education tools, highlighted the importance of cultural competency.

### **Discussion:**

Video-SMAs are feasible and associated with a decline in HbA1c compared to usual care.

It takes frequent video-SMA support to inculcate diabetes self-management and diabetes control in the long-term.

This study favours the use of non-physician providers for sustainability of the programme and control of cost.

Socio-demographics are a huge consideration for video-SMAs.

Small sample size and mostly men

Prone to selection bias

Unique contextual setting limits generalisability

## **Mirsky et al. (2022)**

**Aim and Objectives:** To demonstrate that lifestyle medicine VGVs, coupled with health and wellness coaching and home blood pressure monitoring are associated with improved blood pressure control and medication deprescribing.

**Definition of VGC:** Group medical visits, multiple patients with the same condition, such as hypertension, meet with a provider in a group setting for at least an hour at a time. Importantly, individual care can also be provided in the context of a group, allowing for reimbursement of these medical visits.

### **Methods:**

A primary care physician led, four-part VGV series integrating hypertension management education, lifestyle medicine, health and wellness coaching and home blood pressure monitoring, leading to a reduction in blood pressure and optimisation of medication regimes.

Data collection – June 2020-October 2021

Patients attended four 60-minute VGVs every two weeks in cohorts of 3-6 patients.

Patients received hypertension education, goal setting and behavioural change strategies, as well as an individual review of home blood pressure monitoring data at each VGV. Medication titration would be based on these vital signs.

Patients were included in the analysis if they had attended all four VGVs and had 10 or more HBPM measurements during the study period. Changes to mean BP was monitored and antihypertensive medication prescriptions were evaluated at the beginning and end of the VGV series.

### **Findings:**

23 patients included in the VGV series for inclusion. There was a decrease in systolic and diastolic blood pressure.

13 of the 22 patients who started the VGV series on medications had at least one medication dosage reduced or discontinued. 8 of the 18 patients who finished the VGV series on medication had at least one medication dosage reduction or discontinued in the 180 days after.

### **Discussion:**

First hypertension group visit study assessing virtual group care delivery and home blood pressure integration.

Reduction in blood pressure may be clinically insignificant in patients with extremely high blood pressure,.

Aided deprescribing as a result of the VGV series

Lack of a control group

Small sample size – mostly older, white, female population  
Unable to identify the confounding factors affecting blood pressure.

### **Mirsky et al. (2023)**

**Aim and Objectives:** To assess whether patients attendance patterns at primary care based LMVGVs are associated with self-reported changes in lifestyle behaviours.

**Definition of VGC:** In a group medical visit, several patients with common medical conditions meet together with a clinician (e.g. physician, nurse practitioner, etc.) for at least 60 minutes. Such a venue allows for clinicians to provide both general education and patient-specific guidance about chronic disease care and to bill insurance for reimbursement. Some group visits have been run on telehealth video platforms as virtual group visits.

### **Methods:**

End-point survey of a cohort study of primary care patients at an academic community health clinic affiliated with a hospital setting. Online or paper survey to patients who were scheduled for LMVGVs between September 2020 and April 2022.  
Data collection – February-March 2022

Each LMVGV was conducted by 1 of 3 primary care physicians on a video-conferencing platform and lasted 60 minutes.

3 main LMVGV offerings:

1. A 4-part hypertension LMVGV series with home blood pressure monitoring
2. A 4-part pre-diabetes and diabetes LMVGV series
3. Additional single LMVGV on rotating topics including nutrition, stress reduction or insomnia.

Patients were eligible if they met the eligibility criteria 1) they had signed up for at least 1 LMVGV between September 1, 2020, and August 31, 2021, 2) they were > 21 years old, 3) English was their preferred language.

### **Findings:**

124 respondents completed the survey, with 111 with complete data were included.

Compared to respondents who attended 1-4 LMVGs, those who attended >5 LMVGs reported eating healthier, increasing physical activity, losing weight, and reducing stress.

Most respondents who attended 1-4 LMVGs and >5 LMVGs reported maintained lifestyle changes 'some' or 'a lot'.

Self-reported difference in maintaining lower blood pressure and blood sugar levels as well as improved sleep.

More respondents who attended 1-4 LMVGs reported making no lifestyle changes compared with those who attended >5 LMVGs.

Over a quarter of respondents who attended only 1-4 LMVGs reported making no behavioural changes, in comparison to only 4% of those who attended 5 or more LMVGs.

### **Discussion:**

Respondents who attended 5 or more LMVGs experienced the largest benefit, suggesting a possible 'dose effect' of LMVGs and emphasising the importance of regular long-term participation.

Relatively low response rate (48%)

Predominantly white and female sample

Sample came from diverse backgrounds, including a range of educational levels.

Results may not be generalisable to other geographical settings.

Prone to recall bias due to subjective responses by patients.

### Narrative Synthesis - Tabulation

	Study Description		Study Methods	Description of the intervention		Key Findings
	Study, Author and Year	Setting	Study Design, Methodology and Data collection method	LTC on which VGC focused on	Components	
1	<b>Implementing video group consultations in general practice during COVID-19: a qualitative study</b> Papoutsi, C., Shaw, S., Greenhalgh, T. 2022	UK general practice	<b>Study Design -</b> Qualitative Study  <b>Data Collection Methods -</b> Semi-structured interviews (n=32), longitudinal observation of 2 practices and training meetings, patient feedback survey, workshops	Diabetes Asthma COPD Cancer (acute treatment and long-term survivors) Mild COVID-19 Anxiety Postnatal care Healthy eating support	Diversity of formats noted - not all VGCs had an individually-focused clinical consultation that took place in the group setting  Results board	Diversity of formats and purposes: Range of different formats - clinical, educational, informational and mixed  Establishing online rapport: VGCs appeared to be 'scripted' establishing a lack of online rapport between clinicians and patients alike, however, others valued the human connection and understanding  Dislike of the virtual group dynamic (patients) due to inefficiency  Relying on pre-existing and new relationships: Having pre-existing relationships with the patients helped to establish an online rapport

	Study Description		Study Methods	Description of the intervention		Key Findings
	Study, Author and Year	Setting	Study Design, Methodology and Data collection method	LTC on which VGC focused on	Components	
						<p>Patients valuing access and connection: COVID-19 as a facilitator of VGCs</p> <p>Increased access to services using a virtual platform</p> <p>Challenges with digital inclusion</p> <p>Staff motivations for setting up VGCs: Staff motivations for VGCs was demand-led and performance-led i.e. backlog, workload, QOF, and to increase patient access</p> <p>Workload and practice commitment/Enabling relational coordination in practice: Significant workload required up-front and need for a team approach to implementation with relational coordination</p>

	Study Description		Study Methods	Description of the intervention		Key Findings
	Study, Author and Year	Setting	Study Design, Methodology and Data collection method	LTC on which VGC focused on	Components	
						<p>Establishing roles and skillset on remote group-based care: Benefits including increased skill set and additional roles and responsibilities</p> <p>IT and infrastructure challenges: Technology was viewed as a barrier to delivery</p> <p>Balancing concerns on patient risk and information governance: Concerns regarding confidentiality and safeguarding</p>
2	<b>The utilization of video-conference shared medical appointments in rural diabetes care</b> Tokuda, L., Lorenzo, L., Theriault, A.,	Guam community-based outpatient clinic	<b>Study Design:</b> Prospective non-randomised study /Cohort study  <b>Data collection methods:</b> Survey, focus groups and semi-structured	Diabetes, including blood pressure and cholesterol monitoring	Educational content Individualised cardiovascular risk card, including lab results at the 1 month, 3 month and 5 month visit	<p>Attendance was high across the six sessions (87%)</p> <p>Significant decline in HbA1c after 5 months</p> <p>No significant change in blood pressure or lipid values</p>



	Study Description		Study Methods	Description of the intervention		Key Findings
	Study, Author and Year	Setting	Study Design, Methodology and Data collection method	LTC on which VGC focused on	Components	
	Taveira, T. H., Marquis, L., Head, H., Edelman, D., Kirsh, S. R., Aron, D. C., Wu, W-C <b>2016</b>		interviews for evaluation		Medication adjustments according to report cards  Individualised plans	<p>Lower rate of ED visits noted in the intervention group, but hospitalisations were similar between both groups</p> <p>Higher rates of prescriptions of metformin and ACE inhibitors in the intervention group, where other medications were similar</p> <p>The median PACIC summary score was 4.5 indicating a perceived concordance with the chronic care model. Problem solving was rated highly</p> <p>Themes identified via patient focus groups: 1) overall satisfaction with video-SMAs; 2) patients feeling that the information provided was informative and personally beneficial; 3) awareness of the importance of social support; 4) improvement in self-efficacy to perform self-care</p>

	Study Description		Study Methods	Description of the intervention		Key Findings
	Study, Author and Year	Setting	Study Design, Methodology and Data collection method	LTC on which VGC focused on	Components	
						<p>behaviours; 5) an increased concern over health and life expectancy; 6) satisfaction with the cultural competency of the video-SMA providers and the use of culturally appropriate educational materials</p> <p>Themes identified from the provider interviews: 1) overall satisfaction with the video-SMA experience; 2) perceived benefits for their patients; 3) health system barriers to diabetes care and potential resolutions for these barriers; 4) effective video-SMA facilitator strategies and key elements</p>
3	<b>Hypertension control and medication titration associated with lifestyle</b>	Academic community health clinic associated with Massachusetts	<b>Study Design - Cohort study</b>	Hypertension	Hypertension management education, lifestyle medicine, health and wellness	<p>Median BP at the end of VGV series - 125/74 (14 patients were below the goal of 130/80)</p> <p>Decrease in SBP and DBP per day</p>

	Study Description		Study Methods	Description of the intervention		Key Findings
	Study, Author and Year	Setting	Study Design, Methodology and Data collection method	LTC on which VGC focused on	Components	
	<b>medicine virtual group visits and home blood pressure monitoring</b> Mirsky, J. B., Bui, T. X. V., Grady, C. B., Pagliaro, J. A., Bhatt, A. <b>2022</b>	General Hospital			coaching, home blood pressure monitoring (individual review of HBPM readings in the group)	<p>The 22 patients who were taking anti-hypertensive medication, the dose was either reduced or discontinued (13 patients), medication remained the same (7 patients) and medication was increased, or new medication was added (3 patients). 4 patients were taken off medication completely and one medication was discontinued for 10 patients. Within 180 days of the VGV, 6 patients were off anti-hypertensive medication.</p> <p>Overall, improved BP control with VGV series with a 40% increase in patients at goal BP at the end of the VGV</p>
4	<b>Lifestyle medicine virtual group visits: Patient attendance</b>	Academic community health clinic associated with Massachusetts	<b>Study Design -</b> Cohort study  <b>Data collection methods -</b> 1) paper	Hypertension Pre-diabetes Diabetes Additional session on rotating topics:	4-part LMVGV series on hypertension	Most frequently reported behaviour change in both groups was eating healthier, increasing physical activity, losing weight and stress reduction

	Study Description		Study Methods	Description of the intervention		Key Findings
	Study, Author and Year	Setting	Study Design, Methodology and Data collection method	LTC on which VGC focused on	Components	
	<b>and perceived benefits</b> Mirsky, J.B., Brodney, S., Boratyn, V., Thorndike, A.N. <b>2023</b>	General Hospital	survey, 2) online survey	nutrition, stress reduction or insomnia	4-part LMVGv series on pre-diabetes  4-part LMVGv series on diabetes  Additional session on rotating topics: nutrition, stress reduction or insomnia	Most patients made some or a lot of lifestyle changes after the programme - 75% of respondents that attend 1-4 LMVGv's and 89% who attend 5+ LMVGv's reported some or a lot of changes made. No significant difference between the groups 'dose effect' – increased participation and commitment needed

## Appendix 13: Identification of key findings for narrative synthesis

Study Title	Findings	Illustration (Supporting Quotes)
Implementing video group consultations in general practice during COVID-19: a qualitative study	<p>Diversity of formats and purposes: clinical, educational, informational and mixed</p> <p>Requiring a culture shift</p> <p>Establishing online support: VGCs appeared to be 'scripted' establishing a lack of online support between clinicians and patients alike, however, others valued the human connection and understanding</p> <p>Drinks of the virtual group dynamic (patients) due to inefficiency</p> <p>Relying on pre-existing and new relationships: It using pre-existing relationships with the patients helped to establish an online 'rapport'</p> <p>Time spent with patients added a greater rapport</p> <p>Patients valuing access and connection</p> <p>COVID-19 as a facilitator of VGCs</p> <p>Increased access to services using a virtual platform</p> <p>Challenges with digital inclusion</p> <p>Staff motivations: For setting up VGCs, staff motivations for VGCs was demand-led and performance-led i.e. workload, QOF, and to increase patient access</p> <p>Workload and practice commitment: Significant workload required up-front</p> <p>Enabling relational coordination in practice: need for a team approach to implementation with relational coordinators</p> <p>Establishing roles and skillset on remote group based care: Benefits including increased skill set and additional roles and responsibilities</p> <p>Inability to take on the responsibility of VGCs</p> <p>IT and infrastructure challenges: Technology was viewed as a barrier to delivery</p>	<p><b>Illustration (Supporting Quotes)</b></p> <p>The main VGC was used interchangeably regardless of whether individually-focused clinical consultations took place in the group setting (which is usually a pre-require for a session to be described as a 'group' consultation, according to published literature and the NICE) continuous treatment. All formats included formal components, such as structured annual reviews for long-term conditions, and informal components, such as patient-driven, open discussion. Patient participation was either periodic, to match annual or 6-monthly review requirements for chronic conditions, or more regular. Staff who were interviewed delivered VGCs primarily using clinical or mixed formats across a range of conditions and needs, including for patients with diabetes, asthma, chronic obstructive pulmonary disease (COPD), cancer (acute treatment and long-term survival), and COVID-19, anxiety, those with postnatal care needs, and those seeking healthy living support</p> <p>Finding the 'right' VGC format was not without challenges, especially at early stages when practices were experimenting with remote options. Delivery of clinical and mixed formats required a bigger operational and cultural shift from usual care practices</p> <p>Therefore, many practices decided to stay within the relative 'safety' of informational or educational sessions</p> <p>Some practitioners presented VGC implementation as a next step (not a way) from their face-to-face group consultations programme, as they started to manage the majority of clinical work remotely in COVID-19. Others faced a steeper learning curve as they began remote delivery and group-based care at the same time</p> <p>VGCs required staff working together or coordinating across relations to set up and deliver different sessions</p> <p>staff worried that their VGCs appeared 'scripted' (Interview 18, receptionist/VGC facilitator) and that it would be difficult to establish rapport and patient interaction online compared to face-to-face group consultations. Some patients expressed how they were more reluctant to share initially, especially when they had faced a significant illness burden (but became more open in subsequent VGCs, having listened to others discussing their personal circumstances)</p> <p>Patients also came to value 'human connection' (Interviews 22, patient), especially when sharing experiences of treatment with peers, and (despite initial reluctance from some) they expressed feeling comfortable sharing with others with the same condition</p> <p>It is not really a great journey. I would class myself as not really in that kind of way. I tend to be an individual in terms of getting things done and not wanting to hang out with lots of people, to be honest [...] these [the one-to-ones] I find very efficient. They're targeted, they're focused, I get the information that I need and I believe [the clinicians] get the information they need' (Interview 26, patient)</p> <p>Having a pre-existing relationship with patients allowed staff to better manage the personal distance introduced by the online format as they understood how to focus clinically on things that mattered to them...Where clinicians did not achieve in-depth</p> <p>understanding or when complex individual needs arose in the pandemic, VGCs sometimes led to fragmentation in the care relationship, and the need for additional encounters</p> <p>With time, staff found they were better able to facilitate patient relationships and discussion (even if patients had never met each other before)</p> <p>Patients who chose to take part in VGCs preferred the convenience of participating online, particularly as those shielding wanted to avoid the 'anxiety of being in a public place' (Interview 21, patient). A patient with mobility issues mentioned how it had been a 'bit of a nightmare' getting whether accessible parking, and that remote participation made her 'feel more independent' (Interview 10, patient). Others did not have to take time off work or worry about childcare as they could attend remotely</p> <p>One of the patients [a retired health professional] talked about feeling more connected to the practice through engagement in VGCs, as the nurse came to know his situation better and had a more direct relationship with him, rather than only knowing him through his 'medical record', which he described as 'personal [but] not personal' (Interview 21, patient)</p> <p>The pandemic context appeared to facilitate VGC implementation as many patients and staff became more receptive owing to lockdown and restrictions, disruption to patient support groups, and a shift towards remote interaction</p> <p>Staff interviewees also spoke about setting up VGCs to increase patient access, and concerns remained regarding access for those without IT equipment, bandwidth, or confidence to use technology for VGCs</p> <p>Across practices, motivations for setting up VGCs were primarily demand-led (for example, in a practice as overwhelmed they had adopted a telephone-first triage approach long before the pandemic) and performance-driven (for example, for most Quality and Outcomes Framework [QOF] requirements for income generation)</p> <p>Staff interviewees also spoke about setting up VGCs to increase patient access in the context of QP workforce recruitment and retention challenges, support COVID-19 recovery, improve patient satisfaction and experience, enable a 'working' approach to patient care, achieve better quality clinical consultations, and address isolation in living with chronic illness, compounded by lockdown and the pandemic</p> <p>Many staff participants acknowledged that setting up and delivering VGCs required significant time commitment (about half day preparation per VGC) and changes to administrative processes. Operational work involved sending invitations and reminders, supporting patients to join the video call, reviewing and updating records, preparing materials, issuing prescriptions, and following up on any individual queries</p> <p>Introducing this new remote model of group-based care required practice-wide support at all levels, to be able to free up resources and distribute the workload</p> <p>VGCs required staff working together or coordinating across relations to set up and deliver different sessions</p> <p>Enthusiastic staff (clinical and non-clinical) were prepared to make significant effort so that VGCs would work in their practice, and found the experience rewarding. Some suggested that they extended their skillset and were able to take on additional leadership, clinical, or operational responsibilities, such as IT staff taking from and roles to support patients, receptionists delivering group facilitation, and healthcare assistants learning about diabetes</p> <p>Other staff, however, seemed more reluctant to engage with this model, including those who received VGC training but later refrained from taking on any VGC responsibility. This was primarily because of a lack of time and organisational slack, and the complexity of group-based care</p> <p>Supporting patients to access the video platform involved significant background work</p> <p>Early in the pandemic, some practices faced IT equipment shortages, which meant not all staff could access webcams. Network bandwidth was a barrier to remote care in some practices (although this improved with time)</p> <p>The video platform used to deliver VGCs (MS Teams) brought challenges as some of its features and integration with practice systems were difficult to configure and changed over time. Staff reflected that such technical problems limited 'unprofessional'</p> <p>Governance around remote care was partly relaxed in the COVID-19 context. However, VGCs raised new ethical concerns around online confidentiality, consent, and risk that the national VGC programme sought to address</p> <p>Amongst the video-SMA participants, 49% of them attended at least 5 of the 6 sessions of video-SMA visits</p> <p>The change from baseline value in HbA1c for patients in the video-SMA group was significantly greater than the usual care group (29.3 ± 0.3 to 6.6 ± 0.2 vs. 8.6 ± 0.2 to 6.7 ± 0.2, respectively; <math>P = 0.05</math>, Table 2). As described in Fig. 3, the greatest decline in HbA1c values in the video-SMA group was observed after 4 to 6 sessions</p> <p>The differences in the change from baseline to blood pressure were not significantly different between the video-SMA intervention and usual care groups</p> <p>Similar to blood pressure, differences in the change from baseline in LDL cholesterol or triglyceride levels were not significantly different between the video-SMA intervention and usual care groups</p> <p>Patients in the video-SMA intervention group showed a lower rate of ED visits relative to the usual care group (3.2% vs. 2.4%, <math>P = 0.01</math>), but the hospitalization rates were similar between the two groups (3.2% vs. 2.0%, <math>P = 0.04</math>)</p> <p>Patients in the video-SMA intervention group had a trend towards higher prescription rates of metformin (80.4% vs. 80.4% in control, <math>p = 0.052</math>) and ACE inhibitors/ARB (30.3% in video-SMA vs. 29.7% in controls, <math>p = 0.08</math>), while the prescriptions of statins, nifedipine and insulin were similar between the study arms</p> <p>The median (interquartile range) of the A1C summary score was 4.5 (4.3 to 4.6) indicating a perceived concordance with the target of the chronic care model in the "most of the time" or "always" range</p> <p>patients expressed engagement of the video-SMA visit and reported that it helped them manage their condition. Examples of quotes are: "I found it informational... I learned a lot about my diabetes and what I need to do to prevent complications", "the providers answer all my questions and explain to me what is happening and why", and "I think there is a great need for something like this for everyone"</p> <p>Patients who were satisfied that they were satisfied with their clinical care and management. Examples include: "Everyone seems like they really care about us and are concerned and want to take care of ourselves..." and "...the [the video-SMA provider] is very good... and she is a smart lady and knows about all the foods we eat and how it is used here"</p> <p>Two participants however, provided recommendations for program improvement. The first participant expressed that he would prefer to have more "individual time" with the video-SMA providers to discuss his personal diabetes concerns</p> <p>another participant expressed frustration with members of the group who were allowed to "get off track too much"</p>
The utilisation of video-conference shared medical appointments in rural diabetes care	<p>Balancing concerns on patient risk and information governance: Concerns regarding confidentiality and safeguarding</p> <p>Attendance was high across the six sessions (87%)</p> <p>Significant decline in HbA1c after 6 months</p> <p>No significant change in blood pressure or lipid values across groups</p> <p>Lower rate of ED visits noted in the intervention group but hospitalisations were similar between both groups</p> <p>Higher rates of prescriptions of metformin and ACE inhibitors in the intervention group, where other medications were similar</p> <p>The median A1C summary score was 4.5 indicating a perceived concordance with the chronic care model. Problem solving was rated highly</p> <p>Themes identified in patient focus groups: 1) overall satisfaction with video-SMA</p> <p>More rationalised time for the consultation needed</p> <p>Dominant personalities in a group</p>	<p>Governance around remote care was partly relaxed in the COVID-19 context. However, VGCs raised new ethical concerns around online confidentiality, consent, and risk that the national VGC programme sought to address</p> <p>Amongst the video-SMA participants, 49% of them attended at least 5 of the 6 sessions of video-SMA visits</p> <p>The change from baseline value in HbA1c for patients in the video-SMA group was significantly greater than the usual care group (29.3 ± 0.3 to 6.6 ± 0.2 vs. 8.6 ± 0.2 to 6.7 ± 0.2, respectively; <math>P = 0.05</math>, Table 2). As described in Fig. 3, the greatest decline in HbA1c values in the video-SMA group was observed after 4 to 6 sessions</p> <p>The differences in the change from baseline to blood pressure were not significantly different between the video-SMA intervention and usual care groups</p> <p>Similar to blood pressure, differences in the change from baseline in LDL cholesterol or triglyceride levels were not significantly different between the video-SMA intervention and usual care groups</p> <p>Patients in the video-SMA intervention group showed a lower rate of ED visits relative to the usual care group (3.2% vs. 2.4%, <math>P = 0.01</math>), but the hospitalization rates were similar between the two groups (3.2% vs. 2.0%, <math>P = 0.04</math>)</p> <p>Patients in the video-SMA intervention group had a trend towards higher prescription rates of metformin (80.4% vs. 80.4% in control, <math>p = 0.052</math>) and ACE inhibitors/ARB (30.3% in video-SMA vs. 29.7% in controls, <math>p = 0.08</math>), while the prescriptions of statins, nifedipine and insulin were similar between the study arms</p> <p>The median (interquartile range) of the A1C summary score was 4.5 (4.3 to 4.6) indicating a perceived concordance with the target of the chronic care model in the "most of the time" or "always" range</p> <p>patients expressed engagement of the video-SMA visit and reported that it helped them manage their condition. Examples of quotes are: "I found it informational... I learned a lot about my diabetes and what I need to do to prevent complications", "the providers answer all my questions and explain to me what is happening and why", and "I think there is a great need for something like this for everyone"</p> <p>Patients who were satisfied that they were satisfied with their clinical care and management. Examples include: "Everyone seems like they really care about us and are concerned and want to take care of ourselves..." and "...the [the video-SMA provider] is very good... and she is a smart lady and knows about all the foods we eat and how it is used here"</p> <p>Two participants however, provided recommendations for program improvement. The first participant expressed that he would prefer to have more "individual time" with the video-SMA providers to discuss his personal diabetes concerns</p> <p>another participant expressed frustration with members of the group who were allowed to "get off track too much"</p>

	<p>Themes identified via patient focus groups: 2) patients feeling that the information provided was informative and personally beneficial</p> <p>Themes identified via patient focus groups: 3) awareness of the importance of social support</p> <p>Themes identified via patient focus groups: 4) improvement in self-efficacy to perform self-care behaviours</p> <p>Themes identified via patient focus groups: 5) an increased concern over health and life expectancy</p> <p>Themes identified via patient focus groups: 6) satisfaction with the cultural competency of the video-SMA providers and the use of culturally appropriate educational materials</p> <p>Themes identified from the provider interviews: 1) overall satisfaction with the video-SMA experience</p> <p>Themes identified from the provider interviews: 2) perceived benefits for their patients</p> <p>Themes identified from the provider interviews: 3) health system barriers to diabetes care and potential resolutions for these barriers</p>	<p>patients feeling that the information provided was informative and personally beneficial. Patients acknowledged an increase in knowledge</p> <p>patients' responses indicated they learned a lot from others in the group and that peer interaction and support was beneficial</p> <p>Patients in the video SMA group expressed increased motivation for self-care behaviour change or improvement in self-care skills</p> <p>Patient expressed that "now that I know what can happen if I don't eat right and take my medications" and "now that I know all the problems that I can have with my feet, eyes and heart I am going to be more careful"</p> <p>Patients made statements such as "She [the video-SMA provider] knows it is different over here. We have our [customary] barbecues and everyone tells you to eat, well it is hard to say no..." and "...the food we have is different, we have our poi and we make our food different; she knows that"</p> <p>Both providers expressed that "It was very rewarding to see challenging, high-risk patients become better self-managers, teachers and motivators for other patients, as well as have improved clinical outcome measures after participation in video-SMA"</p> <p>The video-SMA providers acknowledged that peer support contributed to the improvements in patient outcomes and stated "with team guidance, patients learn from each other about solutions to tackle the day-to-day challenges in a way that is impossible to achieve in traditional individual clinic visits"</p> <p>Both providers acknowledge that the physical distance (Honolulu to Guam) and lack of personnel dedicated to video-SMA activities along with an overburdened support staff initially posed challenges to care delivery at the intervention site.</p> <p>The physical distance and mail delivery from a VHA central filling pharmacy often created a lag time for medication delivery, making it difficult to initiate new medication therapies.</p> <p>Since the tele communication system on the island of Guam is inconsistent it was often difficult for Honolulu providers to call patients to obtain blood glucose values</p> <p>The lack of support staff dedicated to video-SMA activities created delays in obtaining vital signs prior to the video-SMA appointment</p> <p>The providers identified that the use of interactive games and patient education tools such as diabetes report cards and standardized self-monitoring forms were essential to promote interactive discussions among participants</p> <p>the importance of cultural competency stating that it was "critical that we [the video-SMA providers] were sensitive and expressed a value for diversity; that we were conscious of the dynamics inherent to the participant's cultures especially in the group interaction and demonstrated that we [the video-SMA providers] had knowledge regarding these differences and were willing to adapt our service delivery to reflect an understanding of cultural diversity"</p>
<b>Hypertension Control and Medication Titration Associated With Lifestyle Medicine Virtual Group Visits and Home Blood Pressure Monitoring</b>	<p>Median BP at the end of VGV series - 125/74 (14 patients were below the goal of 130/80)</p> <p>Decrease in SBP and DBP per day</p> <p>Reduction in taking anti-hypertensive medication as a result of the VGV programme</p> <p>Improved BP control with VGV series with a 40% increase in patients at goal BP at the end of the VGV</p>	<p>At the end of the VGVs, the median BP was 125/74 mmHg (Figure 3A) and 14 patients (61%) were below the goal BP of 130/80 mmHg</p> <p>There was a decrease in systolic (β=-.108 mmHg per day; P = .046 [95% CI -.214, -.002]) and diastolic (β=-.058 mmHg per day; P = .026 [95% CI -.105, -.007]) BP, with a 50-day estimated BP reduction of -5.4/-2.9 mmHg from baseline</p> <p>Among the 22 included patients, one (4%) began the VGV series without taking antihypertensive medications, and that patient did not start a medication during the VGV series. For the 22 patients who began the study on antihypertensive medications, the dosage was reduced or the medication was discontinued for 13 patients (59%), medication dosages remained the same for seven patients (32%), and medication dosages were increased or a new medication was added for three patients (14%; Figure 4). At least one medication was discontinued during the VGV series on 10 patients (45%), and four patients (18%) were taken off antihypertensive medications completely. The 40% increase in patients at goal BP over the course of the VGV series represents a clinically meaningful improvement in hypertension management</p>
<b>Lifestyle Medicine Virtual Group Visits: Patient Attendance and Perceived Benefits</b>	<p>Most frequently reported behaviour change in both groups was eating healthier, increasing physical activity, losing weight and stress reduction</p> <p>Most patients made some or a lot of lifestyle changes after the programme - 75% of respondents that attend 1-4 LMVGs and 89% who attend 5+ LMVGs reported some or a lot of changes made. No significant difference between the groups</p> <p>dose effect</p>	<p>The most frequently reported behaviour and health changes were eating healthier (41% who attended 1-4 vs 85% who attended 5 LMVGs; P &lt; .001), increasing physical activity (37% who attended 1-4 vs 71% who attended 5 LMVGs; P &lt; .001), losing weight (25% who attended 1-4 vs 53% who attended 5 LMVGs; P &lt; .01), and reducing stress (25% who attended 1-4 vs 43% who attended 5 LMVGs; P = .03)</p> <p>Respondents reported maintaining lower blood pressure and blood sugar as well as improved sleep, but there were no significant differences between attendance groups</p> <p>More respondents who attended 1-4 LMVGs reported making no lifestyle changes compared with those who attended 5 LMVGs (20% vs 4%; P &lt; .001)</p> <p>When asked about the extent to which they maintained healthy lifestyle changes after participating in LMVGs, 75% of respondents who attended 1-4 LMVGs and 89% who attended 5 LMVGs reported that they had maintained changes "some" or "a lot"; there was no significant difference between groups</p> <p>Respondents who attended 5 or more visits experienced the largest benefit, suggesting a possible "dose effect" of LMVGs and emphasizing the importance of regular long-term participation. These results are consistent with a recent study of a Healthy Lifestyle Program LMVG program focused on hypertension care</p>

## **Narrative Synthesis – Thematic analysis**

### **First iteration: Alignment of findings to the research question (factors affecting uptake and delivery of VGCs)**

Key: Green – Facilitator, Red – Barrier

<b>Patient Uptake</b>	<b>Clinician and Practice Uptake</b>	<b>Delivery</b>
Dislike of the virtual group dynamic	Requiring a culture shift	Diversity of formats and purposes/ Diversity of formats and purposes
Valuing access and connection	Diversity of formats and purposes	Relying on pre-existing and new relationships
Challenges with digital inclusion	Establishing online rapport	Increased access to services using a virtual platform
Increased attendance	Time spent with patients aided a great rapport	Workload and practice commitment
Improvement in clinical outcomes	COVID-19 as a facilitator	Establishing relational coordination
Overall satisfaction with VGCs	Staff motivations for setting up VGCs	IT and infrastructure challenges
Information provided was informative and personally beneficial	Inability to take on the responsibility of VGCs	Clinical governance, confidentiality and safeguarding

Patient Uptake	Clinician and Practice Uptake	Delivery
Awareness of the importance of social support	Improvement in clinical outcomes	More individualised time in the consultation needed
Improvement in self-efficacy to perform self-care behaviours	Overall satisfaction with VGCs	Dominant personalities in the group
An increased concern over health and life expectancy	Perceived benefits for patients	Medication-lag
Satisfaction with the cultural competency of VGCs	Reduction in medication prescribing	Inability to obtain biometric data
Reduction in medication prescribing	Establishing roles and skillset	Effective VGC facilitator strategies
'Dose effect'	Small sample sizes	Socio-demographic characteristics/ Socio-demographic characteristics
Small sample sizes		Payment systems/Payment systems



## **Second iteration: Aligning the barriers and facilitators to uptake and delivery**

<p><b><u>Patient Uptake Facilitators:</u></b></p> <p><u>Key Finding: Seeking a 'human connection'</u> Initial findings: VGCs fostering peer support, importance of social support</p> <p><u>Key Finding: An increased motivation for self-management</u> Initial findings: Self-efficacy to perform self-management, relevance of information, increased concern over health behaviours, reduction in medication prescribing, increased attendance</p> <p><u>Key Finding: A demand for distanced access</u> Initial findings: Valuing access and connection, increased attendance</p>	<p><b><u>Patient Uptake Barriers:</u></b></p> <p><u>Key Finding: Socio-demographic adaptation</u> Initial findings: Cultural considerations, small sample sizes</p> <p><u>Key Finding: The 'dose effect'</u> Initial findings: Increased commitment, inefficiency of the virtual group dynamic, attendance</p> <p><u>Key Finding: The challenge of digital inclusivity</u> Initial findings: IT skills, supporting patients increased workload</p>
<p><b><u>Clinician and Practice Uptake Facilitators:</u></b></p> <p><u>Key Finding: Practice drive for VGCs</u> Initial findings: COVID-19 as a facilitator, staff motivations for VGCs</p> <p><u>Key Finding: Strengthening the virtual rapport</u> Initial findings: Strengthening patient relationships virtually, need for pre-existing relationships with patients, time with patients</p>	<p><b><u>Clinician and Practice Uptake Barriers:</u></b></p> <p><u>Key Finding: The complexities of conceptualisation</u> Initial findings: Terminology, diversity of formats and purposes</p> <p><u>Key Finding: Creating a 'culture shift'</u> Initial findings: Collaborative working, clinical VGCs require a greater culture shift</p>

<p><u>Key Finding: Demonstrating improved clinical outcomes</u> Initial findings: Improvement with clinical outcomes (HbA1c, BP, lipids), concordance with the chronic care model, self-reported clinical outcomes, reduction in medication prescribing</p> <p><u>Key Finding: VGCs as the 'next step'</u> Initial findings: Skillset, Additional responsibilities, increased satisfaction, perceived benefits for patients</p>	<p><u>Key Finding: The responsibility of VGCs</u>  Initial findings: Inability to take on the responsibility of VGCs, workload and practice commitment, relational coordination</p>
<p><b><u>Delivery - Facilitators:</u></b> <u>Key Finding: Pragmatic and contextual application</u> Initial findings: Diversity of formats and purposes - clinical and educational content, conditions,</p> <p><u>Key Finding: Effectiveness of VGC facilitation strategies</u> Initial findings: facilitation skills, cultural considerations , establishing a rapport with patients, increased access for patients</p>	<p><b><u>Delivery - Barriers:</u></b> <u>Key Finding: Finding the 'right' delivery format</u> Initial findings: Individual time in the consultation, payment systems</p> <p><u>Key Finding: Challenges to distanced care delivery</u> Initial findings: medication lag, telecommunication, inability to obtain biometric data, dominant personalities</p> <p><u>Key Finding: Uncertainty surrounding the resources required</u> Initial findings: IT structures, confidentiality, admin, roles</p>

**Third Iteration: Refinement of themes to narratively describe commonalities and differences across the data**

<u>Theme 1: Establishing the 'right' delivery format</u>	<u>Theme 2: The need to create a 'culture shift'</u>	<u>Theme 3: Seeking a 'human connection' online</u>	<u>Theme 4: An increased motivation for self-management and concern over health</u>	<u>Theme 5: The fragmentation of distanced care delivery</u>
The conceptualisation of virtual group-based care	The ability to create a 'culture shift'	A demand for distanced access	An increased motivation for health priorities	Socio-demographic adaptation
The diversity of formats and purpose	VGCs as the 'next step'	VGCs fostering a 'human connection'	The 'dose effect'	The challenge of digital inclusivity
Pragmatic and contextual application	The responsibility of VGCs	Strengthening the virtual rapport	Demonstrating value in improved clinical outcomes	The detachment of technology and infrastructure
		Effectiveness of VGC facilitation strategies		

**Reflexive Journal – Systematic Review**

Reflection	Insights	Action	Research Journey	Thesis
The use of varied quality appraisal tools	<p>Two main quality appraisal tools – CASP and MMAT</p> <p>The use of further tools was only to be used if there was a great heterogeneity between studies</p>	To reduce the number of quality appraisal tools to be more comparable	<p>I have only engaged with the CASP tools and Cauldwell and Henshaw's quality appraisal tool as a master's student.</p> <p>I have ensured I have given myself enough time to understand the appraisal tools being used and how they are comparable to each other</p>	<p>Question asked in mock progression</p> <p>Discussion chapter</p>
Why a SR not a literature review?	A SR was chosen to identify the gap and provide a context to the research	To provide robust evidence base on the topic – a literature review would not be able to fulfill that function.	I am familiar with the process of conducting a systematic review as I conducted a systematic literature	Methods

Reflection	Insights	Action	Research Journey	Thesis
			<p>review at master's level.</p> <p>The process of registering the review on PROSPERO was new to me.</p>	
Use of PubMed and MEDLINE	<p>MEDLINE results are included within PubMed. Discussion with Jo Jordan stated only to include MEDLINE. However, after running an initial search on Medline and PubMed, there were 1000 more references identified on PubMed. Discussion with lead supervisor to leave PubMed in the final selection of databases, as it incorporates not only academic studies but also clinical studies.</p> <p>A final result of 3800 papers was not enough to warrant the exclusion of PubMed results.</p>	To include both PubMed and Medline in the final choice of databases due to the extra results found through PubMed	Wider experience of using multiple health databases throughout this PhD	Evidence within systematic review chapter

Reflection	Insights	Action	Research Journey	Thesis
	Further discussion with Jo Jordan, who checked the PubMed search strategy, who stated that results could not be refined further due to the restrictions PubMed imposes on searching i.e. inability to use field codes, and proximity searching is identified as tricky			

**Reflexive Journal – PhD Methods**

Reflection	Insights	Action	Research Journey	Thesis
Mixed methods vs. multimethod	<p>In my mock progression with my supervisors, the question surrounding mixed methods vs. multimethod.</p> <p>I was questioned to whether I believed my methodology to be mixed or multimethods.</p>	I have decided that the research takes a multimethods approach, as each phase of the PhD is viewed as complementary to one another, and data is not triangulated or relies on another phase to make sense. Each phase is of value in itself.	<p>This is something I have overlooked since starting the PhD.</p> <p>Since choosing a philosophical position (pragmatism) the need for a multimethod approach to this PhD as each phase aims to answer its own research question whilst complementary contributing to the whole.</p> <p>After researching mixed methods vs. multimethod, this has been an ongoing debate with academics, and the need to justify this methodology is particularly important</p>	Methods Chapter
Philosophical position - pragmatism	Due to the limited evidence base on the topic, the need for multiple methods of enquiry is necessary	The research sits within pragmatism and therefore is heavily dependent on action	Having studied philosophy in my undergraduate degree, I have an understanding of the main	Methods Chapter

Reflection	Insights	Action	Research Journey	Thesis
	<p>to identify the gap, scope the landscape and provide in-depth experiences of video group consultations.</p> <p>The belief that pragmatism incorporates the need for methodological pluralism is central in choosing this philosophical position.</p> <p>Also, the idea that pragmatism is founded on a 'what works' approach, focused on outcomes and action resonates with my research topic, as practices seem to employ a new intervention dependent on action, consequences and take a 'what works' approach. This will help to explain the heterogeneity in approach and definition.</p>	<p>and consequences. This allows one to take a multimethods approach to understand associated factors in the implementation and use of video group consultations to embed into clinical practice.</p>	<p>philosophical traditions e.g., positivism vs. interpretivism. However, pragmatism was overlooked.</p> <p>However, there is a clear distinction between the philosophy of religion and philosophy in research, and pragmatism seems to fit seemingly with my research methods and appropriate methodology.</p>	

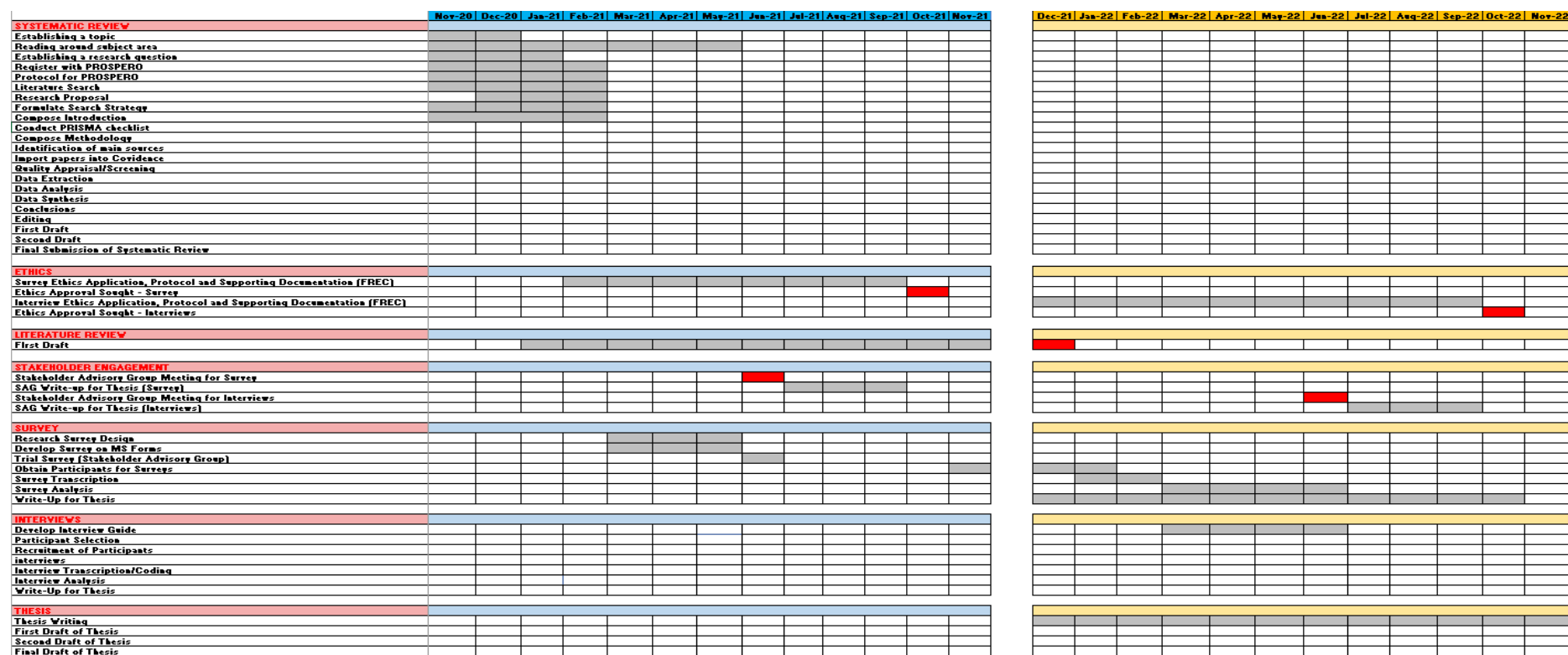


Reflection	Insights	Action	Research Journey	Thesis
SAG	<p>Highlighted the variety in use and definition of video group consultations.</p> <p>Further aligns with a pragmatist philosophical outlook, dependent on a 'what works' approach</p>	Chosen pragmatism as a philosophical underpinning to the PhD	<p>The variety of use and definition is something I had not carefully considered prior to the SAG. Original conception of a video group consultation was a long-term condition review in a group using a virtual setting. However, it became apparent in the SAG that stakeholders were referring to different definitions e.g. support sessions, group therapy, webinars etc.</p> <p>Is there a need for a standard definition or can it be a 'what works' approach for each practice?</p>	Methods Chapter
Does the research take an exploratory or explanatory research design?	Having undertaken the research methods in health module, I questioned the overall research question/aims - is this an exploratory or explanatory research question?	Discussion at next supervision meeting (Jan 25 <sup>th</sup> )	I have now begun to question the research design – since starting the research methods module in health, I have become more familiar with the distinctions between	Methods chapter

Reflection	Insights	Action	Research Journey	Thesis
	<p>Maybe the survey/interviews are a bit of both – pragmatism allows for this flexibility of theoretical and methodological pluralism – which this PhD underpins.</p> <p>Is it asking why (explanatory) or what (exploratory)? Does it really matter, in a pragmatic research design?</p>		<p>exploratory/explanatory/descriptive research questions.</p> <p>This is something I had not contemplated before and will be something I consider throughout my methods chapter which I am writing concurrently</p>	
Positioning of SR	Whether to place the systematic review at the beginning or end of the thesis? To tell the story of implementation?	Discussion with the West Midlands Knowledge Mobilisation Collaboration	<p>After coding the first set of interview transcripts and from the data of the cross-sectional survey, it became apparent the importance of questioning the flow of the thesis structure. The cross-sectional survey presented many definitions of VGCs, so why start the PhD with one limited definition. The need to move this to the end to demonstrate how VGCs are</p>	

Reflection	Insights	Action	Research Journey	Thesis
			defined internationally is paramount.	

## Appendix 17: Example of GANTT chart



	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23		Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Nov-24
<b>SYSTEMATIC REVIEW</b>																										
Establishing a topic																										
Reading around subject area																										
Establishing a research question																										
Register with PROSPERO																										
Protocol for PROSPERO																										
Literature Search																										
Research Proposal																										
Formulate Search Strategy																										
Compose Introduction																										
Conduct PRISMA checklist																										
Compose Methodology																										
Identification of main sources																										
Import papers into Covidence																										
Quality Appraisal/Screening																										
Data Extraction																										
Data Analysis																										
Data Synthesis																										
Conclusions																										
Editing																										
First Draft																										
Second Draft																										
Final Submission of Systematic Review																										
<b>ETHICS</b>																										
Survey Ethics Application, Protocol and Supporting Documentation (FREC)																										
Ethics Approval Sought - Survey																										
Interview Ethics Application, Protocol and Supporting Documentation (FREC)																										
Ethics Approval Sought - Interviews																										
<b>LITERATURE REVIEW</b>																										
First Draft																										
<b>STAKEHOLDER ENGAGEMENT</b>																										
Stakeholder Advisory Group Meeting for Survey																										
SAG Write-up for Thesis (Survey)																										
Stakeholder Advisory Group Meeting for Interviews																										
SAG Write-up for Thesis (Interviews)																										
<b>SURVEY</b>																										
Research Survey Design																										
Develop Survey on MS Forms																										
Trial Survey (Stakeholder Advisory Group)																										
Obtain Participants for Surveys																										
Survey Transcription																										
Survey Analysis																										
Write-Up for Thesis																										
<b>INTERVIEWS</b>																										
Develop Interview Guide																										
Participant Selection																										
Recruitment of Participants																										
Interviews																										
Interview Transcription/Coding																										
Interview Analysis																										
Write-Up for Thesis																										
<b>THESIS</b>																										
Thesis Writing																										
First Draft of Thesis																										
Second Draft of Thesis																										
Final Draft of Thesis																										

### **Reflexive Diary for Interviews**

#### **HCP-04 (February 2023)**

HCP-04 was the first participant to express interest in taking part in the interview, although stating they were not a healthcare professional directly. The participant was head of training consultancy company for both face-to-face and video group consultations. They found out about the study due to their interaction with social media and replied within 24 hours of the advert being posted. This was the first interview to be scheduled and took place over MS Teams. The background information and initial contact I had with HCP-04 helped me to feel more at ease at beginning this first interview. I began the interview by reaffirming our roles and had a small welcome and introduction. After this, HCP-04 was very keen to talk about their experiences. The interview lasted 23 minutes and 4 seconds which was shorter than I expected due to his initial keenness to take part. However, they were very approachable and was keen to help me understand their role in training healthcare professionals in how to conduct a video group consultation. Their background in training healthcare professionals in face-to-face group consultations was also identified, and many times used video group consultations and group consultations interchangeably. HCP-04 spoke about the definition of video group consultations, with a broad range of responses, including a walking group, clinical consultations, and cooking classes. HCP-04 stated a clinician did not have to deliver a video group consultation depending on what the purpose of the consultation was for. I could have asked further about the term 'consultation' and whether I thought this included a clinical review. I will do this in subsequent interviews if the varied definitions of video group consultations are mentioned. I alluded to the need for a consultation structure but HCP-04 stated that each video group consultation is different but as a training provider, they provide practices with general principles. I liked HCP-04 top tip for delivering video group consultations - '*be brave*'. HCP-04 expressed a firm response to whether practices are trained in video group consultation. It was interesting that HCP-04 emphasised cups of coffee when referring to group consultations and cups of tea when referring to video group consultations, implicitly inferring the social aspect of both consultation model. It was interesting to note, HCP-04 stated that healthcare professionals do not need to deliver video group consultations, that diabetes nurses or social prescribers could deliver them.

### **Initial reflections from HCP-04**

- HCP-04 had experience of training HCPs in face-to-face group consultations which became interchangeable with video group consultations.
- Face-to-face group consultations work better than video group consultations, but healthcare professionals feel more comfortable doing it virtually than face-to-face. However, this appeared to be conflicted multiple times throughout the interview.
- Varied definitions of video group consultations – walking groups, gardening, cooking classes, clinical consultations
- HCPs do not have to deliver video group consultations.
- Training for video group consultations is scarce.
- Coffee breaks mentioned with group consultations and tea break mentioned with video group consultations – social aspect most prominently mentioned.

### **Key reflections for further interviews:**

- Topic guide more pre-dispositioned to HCP rather than external roles, e.g. training providers
- The term 'consultation' - does this have a clinical bias?
- Number of questions asked was appropriate as managed to cover all questions in the interview time frame.
- Questions were fluid and complemented each other.
- Participant answered most questions in the first question asked, and therefore had to adapt the rest of the topic guide according to the participant responses.

### **Personal reflection:**

- I felt at times, I was thinking of the next question instead of listening to the participant. This is due to my inexperience of interviewing. The semi-structured nature of the interview meant I was able to explore ideas and opinions dependent on the participants responses, as well as maintaining a clear structure. I was aware I had to follow the questions in the topic guide as well as ensuring the participants freedom to speak. This is something I hope to work on as the interview progress.
- It was very difficult to maintain an interviewer role and make the participant feel comfortable.
- I often say do you see what I mean? to help the participant understand the question.

- Topic guide questions were fluid, with the ability to complement and flow into each other

### **HCP-01 (February 2023)**

HCP-01 is a practice nurse implementing video group consultations as part of a digital fellowship to embed the approach into practice. They saw the study advertisement on Twitter and emailed stating they would like to be involved. There was a delay in returning the consent form but they sent it across the night before the interview and appeared friendly in nature. This meant I was able to build a picture of the participants demographics to discuss at the beginning of the interview. This was my second interview and took place over MS Teams. I felt more confident going into this interview, after having an initial experience. I knew what I needed to focus on, as well as ensuring the interview was around 30 minutes long. The interview lasted for 23 minutes and 14 seconds, as HCP-01 provided answers in a concise manner but was rich in content. I felt I had to probe a lot more with this interview, compared to the first one, as the participant did not elaborate on their responses. I used non-verbal communication techniques to ensure HCP-01 felt comfortable to open up and describe their experiences. HCP-01 came across very passionate about the implementation of video group consultations, and my previous interactions with them as a stakeholder, reaffirmed their drive to implement the approach into practice. Their role as both a practice nurse and as part of a wider PCN network helped me to gather information regarding implementation at both of these levels. Their role as also a digital fellow enhanced the implementation of video group consultations, coupled with the impact of COVID-19. HCP-01 defined a video group consultation as a long-term condition review and a replacement for an annual review. Yet often interchangeably referred to video group consultations as an educational session, dependent on its use in practice. HCP-01 expressed the importance as offering video group consultations as an alternative rather than a replacement, and stated from experience, all video group consultations were offered as an alternative. HCP-01 reported the main barrier to the implementation of video group consultations is patient uptake. HCP-01 noted a top tip for implementing video group consultation is to have a facilitator and just to have a go!.

### **Initial reflections from HCP-01**

- I felt a lot of the information given reflected what I found in the cross-sectional survey of healthcare professionals



- Used video group consultations as a long-term condition annual review, but also inferred the educational aspect of the consultation
- Does not use a medical model of consultation, just what is provided by the training providers
- Process measures are evaluated but not clinical indicators. Participant wasn't sure whether there was an improvement in clinical outcomes for patients using video group consultations
- Often referred to the patient experience throughout the interview, in which I tried to ensure they were able to expand on their own personal experiences as a healthcare professional.
- Long covid and post-natal women were the most successful video group consultations
- Refers to video group consultations as video group clinics
- Better to use a PCN approach rather than a practice approach.
- Invest more time in at the start and now running video group consultations is more straightforward

#### **Key reflections for further interviews:**

- Maybe reflect on the term consultation?
- Stop using the word 'obviously' (noted from a couple of interviews)

#### **Personal reflection:**

- I felt this interview went better than the first, as I was a lot more comfortable with my topic guide which meant I was able to expand on the initial questions.
- I felt the questions were suitable for the participant yet still had to adapt according to role.

#### **HCP-06 (February 2023)**

HCP-06 contacted me regarding an interview after being sent an email invitation from a GP within their PCN. They were one of the first to come forward and identified themselves as previously delivering video group consultations as a PCN Pharmacist. The interview was conducted via MS Teams and lasted 30 minutes and 54 seconds, the longest of the interviews so far. They were able to quickly answer the questions set by the topic guide which meant I had to improvise for the majority of the interview. It was interesting that HCP-06 is now not delivering video group consultations anymore due to patients preferring group consultations. HCP-06 stated they ran a total of 5-6 video group

consultations for statin uptake, cholesterol and q-risk, but stated this has now been taken over by group consultations face-to-face. They stated they would not return to do video group consultations unless there was a different patient demographic, or it was for a new condition. They spoke little about healthcare professionals in which I tried to ask follow up questions to support this. However, the conversation always drifted back to talking about patients' experiences. I tried to gather the differences from implementing video group consultations from a practice level and a PCN level, but they found this difficult to answer. Their response was conflicted by starting off with there is no difference, to the opinion that it made a difference because if they was in one practice they wouldn't have obtained the patient population that they had access and therefore video group consultations wouldn't have been as successful. They believed that there should be a better uptake in training healthcare professionals in video group consultations as it can be quite scary at times. At the end of the interview, HCP-06 was interested to hear about how others have been using video group consultations, in which I explained the differences between clinical consultations, group education, informational sessions and social events such as coffee mornings. Participant felt that the term 'consultation' has had clinical underpinning, and was not aware of the differences between the approaches.

#### **Initial reflections from HCP-06**

- Discussion steered towards the barriers for patients, and it was difficult to obtain the benefits and challenges for HCP-06.
- Used VGCs as a follow up approach to a one-to-one consultation, medication adherence etc.
- Barriers – patient uptake due to demographics and technology.

#### **Key reflections for further interviews:**

- Important to let the participant pause and reflect on their experiences
- The semi-structured nature of the interview has been a useful method as a novice researcher as the topic guide has provided me with a structure but also the fluidity to explore further ideas and opinions of participants.
- Ask why, why do you think that?
- Try to not fill in the silences
- Maybe rephrasing of the impact question, as participants seem to misinterpret the question

### **Personal reflection:**

- This was my second interview of the day. I am slowly gaining confidence in my interviewing ability as I am able to expand on answers provided by asking follow up questions. I have found it difficult to tailor the topic guide to the individual roles (with the role being different in practice, out of practice and in a PCN role). The ability to adapt the topic guide is something I hope to gain valuable knowledge of, as I continue with the interviews.

### **HCP-03 (February 2023)**

HCP-03 saw my recruitment advert on social media and sent an email directly expressing interest in an interview. They stated their job role as a general practice nurse as well as a diabetes nurse specialist across the PCN, in which they had set-up and run a few video group consultations for this patient group. This aided a gathering of information from a PCN perspective. They quickly gave me some available time and dates for interview and completed the consent form beforehand. The interview was conducted through MS Teams and the interview lasted 38 minutes and 36 seconds. I gave the participant the opportunity to ask any questions prior to the audio recording via dictaphone and informed them if they needed to terminate the interview at any point, including at the 30-minute time frame, which would be perfectly fine. I introduced myself initially and asked if they would introduce themselves when the recording had started. As HCP-03 was a champion of video group consultations in their area, they were very passionate about ensuring that healthcare professionals have the right knowledge and tools to implement the approach. This was very evident in their responses, throughout the whole interview. They began the interview by describing their role, and defining how they use video group consultations. They described running video group consultations as a type 2 diabetes programme. They explained the motives behind running video group consultations for type 2 diabetes, reliant on funding and the clinical directors personal interest. They alluded to the difference between the face-to-face and virtual approach, and also highlighted that the video group consultations were run with patients from affluent areas who had access to technology. They appreciated that not all patients have access to technology and the same levels of digital literacy. HCP-03 stated that the approach relies on healthcare professionals doing work outside of their day-to-day role and maybe if healthcare professionals were paid for it there would be a better uptake. They stated the burden general practice and NHS has been put under recently and there needs to be a culture change. Impact was mentioned infrequently and it was hard to get the participant to talk about the

impact of the approach and how this has been evaluated. HCP-03 stated that they have collected some data for audit but would leave it to someone else to evaluate it.

### **Initial reflections from HCP-03**

- HCP-03 described that video group consultations were heavily dependent on funding and personal interest from the organisation, in this case it was the clinical director who had an interest in diabetes.
- They described video group consultations as a programme rather than an annual review for diabetes. They termed it as a 'project'.
- HCP-03 described at length the burden healthcare professionals in general practice are under and video group consultations are implemented as a separate part of their role.

### **Key reflections for further interviews:**

- Its slowly becoming evident that participants find it difficult to determine impact of the approach. It is unknown whether the question appears confusing.
- Participants tend to speak about the lack of evaluation, especially in terms of clinical outcomes, yet deem this to be a sustainable way of working. I will consider in further interviews about the importance of sustainability of the approach, given the limited evaluation and improvement made on clinical outcomes.
- Technological issues meant the interview froze when participant was speaking. It was hard to capture some of the participants responses clearly.
- Difference between F2F and virtual needs unpicking as this appeared to be blurred at times.

### **Personal reflection:**

- HCP-03 asked me if I was a nurse or healthcare professional. I told them was a nurse. I didn't want to give this information as I didn't want the answers to be leading.
- In future interviews I will not disclose whether I am a nurse, unless I am asked due to preconceptions of nursing
- At times I was leading and may have influenced the participants responses, as I was confusing probs with the questions asked

## **HCP-02 (February 2023)**

HCP-02 was identified as key to the implementation of video group consultations, as they had been involved in a national programme to implement the approach across the UK. They therefore responded to my recruitment invite via email and also had seen the Twitter recruitment advert I had posted about the study. They were very keen to share their experience. HCP-02 was the first participant I have interviewed who comes from a strategic and managerial position as part of NHS England. Therefore, I had to ensure the topic guide was relevant to their position. This allowed me to ask further questions and explore their ideas and opinions based on the experiences they were telling me. The interview was very informal, and HCP-02 was incredibly happy to share the positives and negatives of the approach, as well as the difficulties they had faced both implementing and delivering video group consultations. HCP-02 echoed the notion of confidentiality and information governance throughout the entirety of the interview and deemed this to be the major barrier to the reluctance of clinicians implementing the approach in practice. Their experience on a national basis helped to contextualise the efforts displayed in trying to implement video group consultations nationally. With a demonstrated small uptake, HCP-02 found it pivotal that there is the evidence behind video group consultations, other than the case studies they have produced, to give healthcare professionals the confidence and security in using the approach. The 'have a go' approach became evident throughout the interview and that there is evidence that's out there which supports successful use of video group consultations, e.g. 36 case studies produced by NHS England.

### **Initial reflections from HCP-02**

- Confidentiality and information governance was deemed key to successful implementation of video group consultations.
- National uptake of video group consultations is minimal, yet many practices have been trained in the approach
- Formal evaluation is limited, yet HCP-02 described the online case studies examples

### **Key reflections for further interviews:**

- Potential ways to recruit patients for the study was discussed.

**Personal reflection:**

- I was initially worried about this interview due to the participants position as a senior manager of NHS England. I felt like my age was now becoming a factor in how people perceived me and my capabilities, as I was aware I was speaking to someone senior to me, in age and profession.
- However, they looked really relaxed and was able to make jokes throughout the interview. Their choice of dress was very casual which put me at ease.
- I considered the impact of my choice of clothes on my confidence. I have always dressed smartly for my interviews but would also wear these clothes as every day.
- After speaking with my lead supervisor, they suggested maybe wearing a suit jacket, not to give a formal impression to the interviewee, but to instil some confidence in myself when speak to senior participants. I will do this in my next interview to see if it has any impact on my confidence as an interviewer.
- I felt at times the HCP-02 had an agenda which they wanted to get across to me, and therefore would talk for long periods of time. I found it hard to ask follow up questions due to the length of time the participant was talking for. This was a challenging interview yet ended up being quite valuable collecting a lot of rich data.
- On reflection, I will use a notebook to write any interesting thoughts down as the participant is speaking so I am able to address these later in the interview.

**HCP-07 (February 2023)**

I had met HCP-07 at a conference a few years ago when they were part of a digital team and expressed their involvement with video group clinics. They emailed me after seeing my recruitment advert on social media and expressed interest in taking part. They are a general practice nurse, who previously had a role in national digital team. They are currently not undertaking video group consultations but have previously conducted them for pre-diabetes consultations in Urdu language for women. They run video group consultations as a programme and ran this around a year and a half. At the beginning of the interviews, they spoke at length about the positive benefits video group consultations have had on the women who attended them. I asked further about the associated benefits for healthcare professionals, but they could only identify that they have made a difference to the lives of the women by doing video group consultations. They spoke little about the impact it had on their role, despite mentioning that video group consultations were something that were additional to their job role, they didn't get the

time for it, and they were not paid to do them. It is down to the personal interest of the clinician and the healthcare who was facilitating them to ensure video group consultations were implemented in their practice. It was interesting as they really reflected on the demographics of the population themselves, which consisted of a large proportion of different ethnicities which made video group consultations successful. Logistically they were not viewed as a challenge for HCP-07. They raised the importance of ensuring that there was whole team buy-in of the approach due to the workload associated with the implementation of video group consultations.

### **Initial reflections from HCP-07**

- HCP-07 had limited experience with video group consultations, yet their experience was valuable, in the sense that they worked with a varied population of patients.
- Considered video group consultations as a programme.
- Their role in a national digital team negated any issues with technology
- Impact was an area that the participant was unable to comment on.

### **Key reflections for further interviews:**

- Personal confidence!
- To probe further around accessibility of video group consultations
- After transcribing a number of interviews and considering the initial patterns in the data, I feel that from the interview questions asked I am already reaching data saturation/information power. I will speak to my supervisory team regarding how I adapt my topic guide and probe further surrounding the impact and sustainability of VGCs.

### **Personal reflection:**

- I feel more confident to ask probing questions and ensure the flexibility of my topic guide.

## **HCP-05 (February 2023)**

### **Initial reflections from HCP-05**

HCP-05 expressed an interest to take part in the study by replying to an email I sent out to those who have been trained in video group consultations. They are a pharmacist by background but also work as general practice partner. I found this to be interesting for the study, as HCP-05 would be able to provide an insight into video group consultations from a clinical and managerial role. HCP-05 had been running a mixture of both face-to-face and video group consultations since 2018, primarily delivering video group consultations since the COVID-19 pandemic. They now deliver hybrid-group consultations, where patients have the option to attend in person or join an online call with the rest of the group. Their experiences of running group consultations, in a variety of formats, has solely been focused on diabetes, including cardiovascular indicators. They have had ideas to do video group consultations for other medical conditions but deemed facilitation to be the major barrier to this. They expressed that they lived in a poor socio-economic area and therefore video group consultations have not been appropriate for all patients, with regards to digital literacy and access to technology. HCP-05 deemed process measures as a more accurate indicator of the successes of video group consultations, such as the knowledge health professionals gain by engaging with a range of medical data, confidence etc. I questioned the importance of measuring clinical outcomes for the sustainability of video group consultations. Their answer was noticeably clear in that video group consultations do not offer an improvement in clinical outcomes, just like a one-to-one consultation may not, as it is dependent on the individuals patient's motivations. However, it does help to save time for a practice, so that healthcare professionals can see other patients, in the time it would have taken them to see a group of diabetic patients, individually. This would be the selling point for practices to adopt the approach, rather than the intrinsic benefit of video group consultations themselves. Process measures have been evaluated by feedback forms from patients, but this was not extended to healthcare professionals. HCP-05 gave four top tips to implement video group consultations: having a champion; IT support; facilitation; and the knowledge that it takes time to implement.

### **Key reflections for further interviews:**

- I felt I was able to address the question regarding the impact and sustainability of video group consultations based on a lack of evaluation of clinical outcomes. HCP-05 did not credit the benefits of improving clinical outcomes for patients but rather viewed it as a



model of consultation which was considered time-saving and therefore would free-up time for healthcare professionals to complete other reviews.

- Technology was a problem for the interview, as there was a time lag on my voice, and I was unable to see HCP-05 video. I transferred the interview call to my mobile phone and was able to conduct the interview adequately through this platform. I will try and troubleshoot any problems that may occur before I do my next interview.
- I felt I could have asked further questions about the hybrid approach, yet I didn't as I didn't want to stray too far away from the topic guide

### **Personal reflection:**

- After a discussion with my lead supervisor, I took on the 'interviewer' role by wearing a blazer jacket, over the smart jumper I had previously worn. Whilst I believe this did not change how participants perceived me, it gave me more confidence in feeling like an 'interviewer'.
- Over the past seven interviews, I have learnt the difference between having a conversation and conducting an interview. At first, I believed this to be a similar skill set, yet I quickly realised that I wasn't also able to express my personality in the way I wanted to. Changing the way I presented myself to HCP-05 has helped me combat some of my feelings regarding imposter syndrome.

### **HCP-08 (April 2023)**

#### **Initial reflections from HCP-08**

HCP-08 was highlighted as a potential participant by another Twitter user recommending that they take part. They are an ACP/ANP by background and has worked in primary care for the last ten years. HCP-08 had run video group consultations as part of a master's programme component and had not been able to implement them into practice yet, as was only ran for the master's primary purpose. They had run face-to-face group consultations in a previous role over ten years ago. They began the interview by stating the purpose of their master's project which was to run a VGC programme which was a combination of both a consultation and educational groups. HCP-08 therefore ran video group consultations themselves and in their own time and believe nurses were the most suitable clinicians to advocate for the use of video group consultations in primary care. They demonstrated improved clinical outcomes in HbA1c, cholesterol, BMI and BP, as well as patient

activation levels with regards to knowledge, skills and confidence. They used their own surveying method to do this. They compared the reduction in HbA1c in a group and individual setting. HCP-08 spoke about the peer support in the group and how virtually this is managed in terms of the results board, chat, and engaging in discussion. They alluded to HCPs being distracted in their own homes but argued that this was not the case for patients. HCP-08 discussed the need for confidentiality agreements and maintaining governance within the group. They believed that the incentives for HCPs to run video group consultations were based on the ability to provide a mixture of different services for patients and accounted for HCPs adaptability and style. HCP-08 was a real advocate of the approach and could demonstrate that through their one programme of four sessions that there was a benefit for HCPs, patients and the practice. They concluded by stating that a 'top tip' for implementation would be 'to do it' and the benefits will come.

### **Key reflections for further interviews:**

- After modifying the topic guide, the implementation and impact of video group consultations was better explored.
- Questions regarding the impact on clinical outcomes and patient benefit became more apparent and the logistics behind running the consultation were discussed.
- In particular, the participant mentioned that VGCs were based on individual motivation and implementation due to the an individual's hard work. They felt their hard work was ruined when returning to F2F group consultations and viewed video group consultations as on a pause.
- Viewed nurses as change agents. They mentioned that video group consultations were a way for nurses to 'be heard' and 'have a voice'. I asked them to clarify this in which they meant that nurses really could be the forerunners with this approach due to their involvement in long-term condition reviews.
- As they completed video group consultations as part of a master's programme, this was something they needed to take forward to implement further. They wanted to do this at a PCN level rather than a practice level.
- I did not state that I was a nurse by background which meant they explained everything thoroughly and simply.
- The interview lasted an hour long. At the beginning of the interview, I stated that they are welcome to stop the interview at any point, in which they did not state this during the interview. During the interview, I forgot to mention that we were at the 30-minute time point, but the participant did not state that they wanted to stop the interview. This is something I will ensure I do in further interviews.

- There was a lot of trouble with internet connection and at times it was hard to hear the participant. They kept going back over their responses to make sure I had heard her. This proved to be difficult when transcribing as I had to re-listen and re-listen to make sure I had the correct words and interpretation.

### **Personal reflection:**

- I felt a lot more confident in the topic guide and the questions I was asking. I felt the participant developed a good professional rapport with myself.
- I was able to feel more confident in my abilities as an interviewer/researcher. I made sure that I noted down anything interesting, so I was able to come back and ask questions regarding previous information relayed.

### **HCP-09 (May 2023)**

#### **Initial reflections from HCP-09**

HCP-09 received information about the study by virtue of snowball sampling via email. They currently work as a Primary Care Workforce Manager but is an advanced nurse practitioner by background and also works as an associate lecturer. They also had a role within the board for the GPN 10 Point Plan. With regards to video group consultations, their role was to get practices funding to run video group consultations, after a GP expressed an initial interest in the approach. They obtained funding to run video group consultations for one practice from funding held by the GPN 10 Point Plan board. This was around £7000 and was viewed to be money that needed to be spent before the board stopped working. HCP-09 had not run VGCs themselves but supported the implementation of VGCs by providing funding for a practice. They were able to speak about their role in relation to funding, and the practicalities of VGCs in the practice. They argued that video group consultations were only feasible due to funding, providing more time for staff to develop, implement and deliver the approach. Therefore, implementation was solely dependent on funding. They discussed at length the context of primary care, in which it is not that staff do not want to consider alternative models of consultations, but its more that they do not have the breathing space to be able to develop these. There is too much demand in primary care and the incentives for HCPs are only based on patient benefit. They argued that video group consultations, need to be mandatory, as if it is a choice, it won't work.

HCP-09 spoke about the need for belief in the model and having a person in a practice who believes in the benefits, as well as someone who is digitally savvy. Despite funding given to the project, there was no requirement to produce any formal evaluation of clinical outcomes or patient benefit. This raises a dissonance between providing funding and obtaining outcomes – why fund something that doesn't have outcomes? HCP-09 alluded to the need to trust patients, which is key for confidentiality, self-management and ownership of health. They questioned whether an annual review actually had influence on patient's health. HCP-09 spoke about the difference in the group dynamic virtually and face-to-face, they believe that the peer and social support, a considered benefit of face-to-face group consultations, is lost

### **Key reflections for further interviews:**

- The context of general practice should be questioned further and its suitability for the implementation of video group consultation with the current landscape
- Mandatory VGCs vs. choice – does this depend on funding?
- Funding – is there a need to provide clinical outcomes to funders? What do they require?
- Trust in patients is key and something to explore in the patient interviews
- Peer and social support are lost in a video group consultation, in comparison to a face-to-face consultation

### **Personal reflection:**

- I quickly developed a good rapport with the participant and praised me for the work I was doing. They are a nurse themselves and spoke about how impressed they were to see a nurse completing a PhD.
- They felt comfortable to open up to me after the initial icebreaker. Although, they knew I was a nurse, they did not ask whether this was primary care based.

### **HCP-10 (June 2023)**

#### **Initial reflections from HCP-10**

HCP-10 was one of the first participants to agree to take part in the study. They are currently a salaried GP with an interest in lifestyle

medicine. They hold a significant role in a company promoting lifestyle medicine, in which they are very keen for video group consultations to excel in this area. They have previously conducted both F2F group consultations and currently delivering video group consultations. They have learnt to run F2F group consultations by engaging with formal training and had the time set aside to develop the approach, as part of their GP fellowship. Video group consultations were driven by the impact of COVID, their personal interest in lifestyle medicine and the work on video group consultations internationally. The impact of COVID made them feel they had to give it a go. They termed the approach as 'video group clinic' and most predominantly has used them for menopause and diabetes. The aim of the video group clinics is not replacing the annual review but offer a transformational approach to healthcare and management of health conditions. They were run as an option rather than a replacement. When HCP-10 set up video group consultations they were hoping to get enough funding and investment of the approach to run them regularly and to train others in how to conduct them. The issue with video group consultations is that, whilst an individual can have a great interest in the approach, there is no ability to scale it up. HCP-10 viewed confidentiality as a barrier in helping practices to implement approach, as externally, practices were not confident to give their patient lists etc. yet were still demanding help. A lot of the work surrounding the delivery of video group consultations and its advertisement is a charitable effort by HCP-10 as they are not paid extra for this time and usually has to work through their lunch and later into the day. They compared the benefits of VGCs compared to individual consultations, stating that individual consultants are transaction, as in checking data, giving the patient what they want, in comparison to VGCs which is a transformational model of care. They emphasise that VGCs are a completely different way of working and therefore is not understood well in primary care. They have run VGCs for receptionists so they understand the model of care and therefore can promote it. HCP-10 recognises the value in expert patients, and states that more often than not there are repeat attenders rather than non-attenders. One of the barriers they identified was with regards to the technology, with regards to facilitating a group dynamic online, e.g. use of mute, use of the chat function, dominant personalities. Overall, they believe that the inability to demonstrate reduction in workload, and the inability to operationalise the approach has implications for implementation into practice.

### **Key reflections for further interviews:**

- Inability to scale up
- VGCs are not sustainable
- Group dynamic is difficult to facilitate for HCPs online

- Dependent on funding
- Have to give VGCs time to be implemented
- Operationalisation and understanding of what a VGC is an issue

### **Personal reflection:**

- I think that I am getting data more aligned to the research question re. implementation and impact.
- I developed a good rapport with the participant, allowed them time to speak and managed to ask all relevant questions within an adequate time period.

### **HCP-11 (June 2023)**

#### **Initial reflections from HCP-11**

HCP-11 was recruited via snowball sampling, as identified as facilitating and delivering video group consultations in their area. They are a health and wellbeing coach across a PCN network of five practices. Their role specifically was employed to run video group consultations across the PCN with the aim to reduce backlog and view video group consultations as a time-saver for clinicians. They noted that if their role was not funded, video group consultations would not be running as there wouldn't be the capacity to run them. HCP-11 had experience of also delivering F2F group consultations in a previous role. Their interest is around helping patients to feel healthier, with a focus on long-term conditions in video group consultations. They are enthusiastic about the coaching aspect of the video group consultation, with the idea of a more personalised care approach. HCP-11 acted as the facilitator role in the video group consultation. They highlighted the importance of the virtual group dynamic, which is different to the F2F group dynamic, due to contentions with validation and anonymity. Anonymity was viewed as a benefit for video group consultations, as patients didn't necessarily have to show themselves on camera etc. However, this changes the energy of the consultation, as there is increased chance of distractions and reduced patient engagement. Patients not turning their camera on creates an added barrier to the consultation. They noted that it is important to have a group agreement at the beginning of each video group consultation to ensure the group dynamic is well facilitated. HCP-11 stated that the incentives for HCPs to deliver video group consultations would be time saved. They have had support from the practice to implement video group consultations. Administration time is the biggest barrier to implementing the approach, but this is reduced in

comparison to running 10 1:1 consultation. There have been no calculations with regards to the reduction in workload, but individually does not feel video group consultations impact on their work and time, due to the role specified to run the approach. They have run video group consultations in their own time, for their own preference. Technology was not an issue for the participant and patients are able to use the chat function easily. HCP-11 described variations in delivery with the number of patients involved in the consultation. They described delivering a video group consultation to 50 people. I asked the difference between this as a consultation and a webinar, in which they described the use of the chat function, an icebreaker, and points of engagement. In all variations in delivery of video group consultations, HCP-11 states that there is no need to collect patients clinical results but collects patient goals and expectations. The video group consultations have a more educational focus but ran for long-term conditions. There has not been any formal evaluation of video group consultations, but the participant described feedback from patient surveys. There is no need to provide any metrics within their role for the implementation of video group consultations. HCP-11 concluded the interview by discussing top tips for implementation, in which they described the need to advertise the approach, have team buy-in and measure patient feedback.

### **Key reflections for further interviews:**

- Role employed to run video group consultations specifically has helped to reduce barriers with regards to funding.
- The virtual and F2F dynamic was discussed, with the need in a F2F group for peers to provide validation to the condition – ‘normalising the abnormal’, and with video groups aid the ability for anonymity, creating a barrier for HCPs to engage with patients

### **Personal reflection:**

- I found this interview challenging as the participant stated when beginning the interview that they only had 20 minutes. I felt the interview was very task-focused and the ability to explore answers was limited.

## **HCP-12 (July 2023)**

### **Initial reflections from HCP-12**

HCP-12 contacted me after receiving an email about the study, having been identified as undertaking video group consultations. HCP-12 is a GP Partner in one practice. The practice is situated in a remarkably diverse socio-economic area, with over 50% of consultations needing an interpreter. They are a champion of video group consultations, and their initial interest led the practice to run a pilot of the approach, which was a six-week pain management programme. This programme is group education and does not focus on any clinical outcomes. The aim was to provide an alternative form of consultation for patients, especially non-English speaking patients, and as a response to the COVID-pandemic. The practice had never run face-to-face group consultations prior to video groups. Several HCPs participated in the approach, including pharmacists, nurses, physios and psychologists etc. They alluded to the challenges of video group consultations, with regards to technology access and low attendance numbers. They spoke about some of the cultural barriers and geographical barriers such as communities knowing information about each other's personal health if taking part in a video group consultation and using an interpreter in the consultation. They spoke about the use of the interpreter, which leaves a call after 15 mins, but in F2F group consultations this would not happen. This creates a barrier to accessing certain demographics of patients on a video group consultation. A barrier HCP-12 found important is that it was difficult for HCPs to be available at the same time each week for them to facilitate the programme of care. This was the main reason why video group consultations were not continued in the practice. They stated that there is a large difference between F2F and virtual in terms of the use of body language, peer support and feeling engaged. They spoke about patients tended to be in their beds when on the consultation, which left them with mixed feelings about this mode of consultation. They described that patients often just listened to the consultation, with mic and camera off, meaning there was little engagement. They spoke about patients valuing anonymity. They stated their patients preferred to consult F2F. In order to deliver video group consultations, they externally employed a master's research student and a project coordinator. The clinicians varied according to which session of the programme was in their interest or specialty. Video group consultations were run as a pilot and therefore HCP-12 deemed implementation to be an experiment. There was no need for a formal evaluation of the pilot and no outcome measures were collected. There has been no demonstrated improvement in patient benefit and/or clinical outcomes.



**Key reflections for further interviews:**

- Idea of anonymity – may need exploring further
- Deprived socio-economic status ultimately affected implementation of VGCs
- Timings of VGCs for HCPs is central
- No need for a formal evaluation or collection of clinical outcomes and/or patient benefit surveys

**Personal reflection:**

- I felt this interview went well. I managed to develop a good rapport with the participant but the way they answered the questions was difficult to follow. They often did not answer the question directly and would answer in other questions asked. This made it difficult to ensure all questions were covered adequately.

**HCP-13 (July 2023)****Initial reflections from HCP-13**

HCP-13 was recruited via an email to those who have engaged in video group consultation training. This was picked up on a reminder email sent out a month after the original study email was sent out. They were very keen to take part and connect me with other potential participants. They are a GP who has been running and implementing group and more recently video group consultations over the last eight years. Video group consultations are run over a PCN rather than a practice, which initially F2F group consultations were. Therefore, delivery has had to be scaled-out with video group consultations. Video group consultations were implemented as a response to the pandemic, as F2F group consultations were no longer possible. Due to the initial and continued interest of HCP-13, video group consultations were possible. However, funding was an imperative platform for delivery and if this had not been in place, video group consultations would have not been possible to deliver due to issues with capacity, pressures and workload. Fundamental to the implementation of video group consultations, is the added benefit. They described that general practices are not able to claim for double payment and therefore need to have an added benefit to receive funding. Whilst video group consultations were run for hypertension and diabetes, the added benefit came with the lifestyle advice. This did not replace a LTC review but was able to capture some QOF data as well as providing patients with extra lifestyle advice to

manage their condition more effectively. The additional funding creates more capacity to deliver VGCs I.e., additional time and resources needed to set up VGCs. This is instead of using alternative models of care to get the same QOF points for the GP contract and LCS when extra resources are required. HCP-13 also spoke about the differences between the group dynamics between HCPs and patients. They described that patients are more withdrawn on a video group consultation and rely on the information of the clinician or facilitator, rather than generating discussion themselves. The use of the results board is limited on a video group consultation as this dominates the screen rather than allowing peer interaction. This differed from F2F group consultations as HCP-13 described this would normally have been displayed throughout the whole of the consultations so it can be referred to. They did not believe that a video group consultation affected the clinician-patient relationship but regarded this as more distant and less engaged. HCP-13 argued that the most important factor in the implementation of video group consultation is having an individual to do all the logistical aspects of setting up and delivery. This should be an individual's job role or should be paid as an extra due to limitations in capacity and regarding the current context of general practice. They believed that video group consultations are not down to one-individual, but actually is a whole team buy-in which ultimately determines whether it is possible to implement video group consultations into practice. HCP-13 had not collected any data on improvements in patients' clinical outcomes but had collected patient feedback, which had been overwhelmingly positive. They were unsure whether they had to evidence any metrics to provide to commissioners as part of funding the service.

### **Key reflections for further interviews:**

- Double pay of commissioning – maybe a reason why video group consultations are not being ran for LTC reviews distinctly – add this as a question for the next interviews
- Patient dynamics – does virtual make this more disjointed? The results board on the screen hinders patients from seeing each other
- Do commissioners require metrics to fund video group consultations?
- Whole team buy-in vs. Championing/individual buy-in – which has been valued more?

### **Personal reflection:**

- This participant only had 25 mins for the interview and therefore I was conscious of time throughout. We developed a strong professional rapport and I felt confident in asking some of the more pressing questions around impact that I had not felt as confident to address in previous interviews.
- I feel like I am getting to the crux of the problem now, with regards to the commissioning and incentives behind implementation. However, it is important to note that this is different for all general practices due to their nature of the primary care landscape.

### **HCP-14 (July 2023)**

#### **Initial reflections from HCP-14**

HCP-14 is a dietician, identified on social media as having ran video group consultations. They agreed to participate in the study with extreme enthusiasm and also stated they would send out to the dieticians they know also running video group consultations. The interview lasted around 40 minutes, despite reaffirming that the interview shouldn't take longer than 30 minutes, they were very interested in my research and was happy to carry on. They described a video group consultation programme they had been involved in, which lasted a duration of 7-8 months for type two diabetes. This heavily focused on remission of type 2 diabetes by undertaking a low carb diet. This programme ran weekly, then extended to monthly and then bimonthly and was ran in the evenings. It was run as an addition to the annual review, where it would be mentioned by the nurse in that review. They also spoke to video group consultations they had been involved in which were more like a 'consultation'. They made a distinction to the programme that they were running to the video group consultations they had been involved in. They described VGCs as a theory, with the distinction being that in a VGC, there is a consultation with a GP. However, after describing this, they concluded that they were the same thing. This raises questions of whether there is a distinction between video and virtual approaches as they initial assumed. With regards to the programme, they were employed two days a week to convert the existing F2F group consultation programme to a virtual setting. This was as a result of the pandemic. This meant they spent time making the programme user friendly by devising videos and workbooks that patients could use at home. During the programme, they would have set points where HbA1c, blood pressure, blood sugar, weight, triglycerides were measured. Interventions such as using a Libra device were also part of the programme. They described that the programme has gone

back to being in-person and they have left the role because they did not have the personality or capacity to up-scale the approach as it was liked. The reasons why the programme went back to F2F is due to the lack of human connection in a video group. HCP-14 spoke about some of the barriers of transferring to a F2F setting to video. The main reason was the time employed to initially set up and the work needed to run the video group consultations. They stated that this took them around four months. The video group consultation programme was funded in the PCN by the local ICB/ICS. This money was given as a result of applying to a charity for funding. This meant that there were specific targets to hit to fulfil the funding criteria and also had to evidence outcome data. They believed that if the funding was not allocated to the programme, the programme still would have run due to the personal interests of the GPs to which it was hosted. The programme would have just taken longer to implement. They argued the main incentive for HCPs to run VGCs is to reach a larger number of patients and the impact of education on patient's health. HCPs also do not have to be within a particular practice to deliver a VGC and so can be conducted remotely. Therefore, patients can access a wider clinician workforce available. HCP-14 spoke about VGCs being cheaper than F2F group consultation, this was regarded in terms of the equipment, i.e. booking rooms, patients don't have to pay for parking etc. They stated that most people already have a laptop and MS Teams which has no cost employed. They were not able to provide quantitative costings of this. HCP-14 believes that the implementation of video group consultations is dependent on having the right processes at the start and consistency.

### **Key reflections for further interviews:**

- Does video and virtual have different connotations?
- Transferring from a F2F group consultation to a video group – barriers to this
- Peer dynamics – does the virtual space distort this?
- Context of general practice – access to resources, funding etc.

### **Personal reflection:**

- Personally, I was able to develop a good professional rapport with the participant from the beginning of the interview. At the end of the interview, they signposted me to a number of potential participants who had ran video group consultations. They were very keen to take part and their enthusiasm was not diminished throughout the interview.

## **Positionality Statement**

This positionality statement was updated iteratively as I commenced through the interviews and my research journey as a whole. It aims to tell a story of my thoughts, feelings and positions at different points throughout the research and provide a platform of reflection.

I have worked as a staff nurse on the Critical Care Unit since 2019, after having completed a BA (Hons) in Religious Studies at Lancaster University and an MSc in Adult Nursing at Keele University. My interest in research stemmed from both this clinical experience and academic learning which enabled my decision to apply for a PhD in the School of Nursing and Midwifery at Keele University. Having worked clinically for over a year, coupled with a MSc in Adult Nursing, made me to start questioning the need for evidence-based practice in nursing.

Undertaking a research project within my MSc allowed me to start thinking about this. I had a great interest in primary care general practice, whilst not having the clinical experience of this through my degree. This curiosity warranted further exploration. I completed my MSc dissertation about the role of the community matron in primary care. I found barriers at both structural and organisational level, which meant that the community matron role was only achievable as an extension to previously established roles. I felt the need to question the capacity of general practice due to the findings from this research dissertation.

Initially I did not think this would take the form of a PhD, however, after seeing the advertisement on Twitter for a PhD Studentship at Keele, it made sense to me that this would be a perfect opportunity to enhance my career progression with a project which I felt would make a great impact across primary care research. Video group consultations are considered a new way of working, and the impact of the COVID-19 pandemic in March 2020, made me to start questioning my own ways of working and subsequently alternative models of care. I also had the opportunity to work with Dr Andrew Finney, who supervised my MSc

dissertation project, as well as senior nurse researchers and knowledge mobilisation fellows.

I knew that I had a lot to learn at the beginning of the PhD, due to my limited clinical experience and research knowledge. I was soon to recognise this and made sure that my training needs were evident to my supervisory team. The rigorous research training would provide me with the necessary skills to help develop my understanding and passion regarding newer and alternative ways of working. I was also keen to develop my understanding of how my research could be translated into practice.

At the beginning of the PhD, I documented my training needs and maintained brief research journal notes to understand my own position as both a clinical nurse and researcher within this study. More specifically, I took detailed notes of my research journey throughout the interview study, considering my own position was shaping the research. Monthly supervision meetings also helped me to be reflexive, and academic reading allowed me to explore the potential biases in influencing research. The choice of conducting a reflexive thematic analysis (Braun & Clarke, 2021) also aided my self-awareness and the way my thoughts and decisions impact on the data and myself as a researcher. I have described some of the main learning points below.

Firstly, I considered my role as a staff nurse distinct to my role as a researcher. However, this was not the case. During my interview study, many participants asked directly whether I was a nurse or researcher. I felt this may have determined their response to the questions asked in the interview. Prior to conducting the study, this is not something that I had considered. I did not realise that my role as nurse would be considered during an interview by the interviewee. Following this, I made sure I affirmed myself only as a researcher and stated that I was nurse if asked outright. I felt this helped to establish a professional yet distanced rapport with participants. Whilst I am unable to determine the impact of this on the participants, an awareness of both my role as a nurse and researcher was more deeply considered. I recognised myself

as a researcher that I cannot be completely value-free, but I was quick to learn that this may have shaped and impacted the research data.

A further point of reflection is with regards to my own perception of age. When interviewing I increasingly thought my age was a barrier to confidence within an interview setting. I often felt insecure when interviewing professionals with extensive experience or those in high positions. I began to think that my capability was limited due to my age. I questioned whether conducting a telephone interview would have been a way to avoid this perception. However, after reflecting on this with myself and my supervisory team, it became apparent that it was my insecurities which made me feel this way. Participants tended only to see a researcher, not a younger girl, and the more I was able to embody a researcher mentality, the more I was able to see through the age barrier. This is something I never thought would be a barrier, only until I was conducting the interview study. Identification of this early in the interview study increased my awareness of how I was perceived. I quickly developed the confidence to ask the more pressing questions and felt my confidence grew quickly.

In particular, at the beginning of the interview study, I found it difficult to ask probing and additional questions after the participant had spoken for a length of time. On reflection of this, I used a notebook to write any interesting thoughts down as the participant was speaking so I was able to address these later in the interview. As the interviews commenced, I felt more confidence in asking probing questions directly related to the discussions at hand. This enabled me to gather a greater depth of data.

I also reflected on how I presented myself to the participant and how I would feel more confident. I dressed smartly for the interviews but made sure this did not look out of place for a home setting, as participants could see this by the video. After reflecting on this with my supervisory team, they suggested I wore a suit jacket for the second half of the interviews, as although I looked smart to the participants, this may instil more confidence in me. I found this to be beneficial for my mentality in the interviews, following this discussion. Despite this, as I grew in

confidence as a whole, I felt the need to dress in a suit jacket was not as necessary as first thought. Linked with my increased self-awareness and confidence in myself as a researcher benefited the research study as a whole.

Another point of reflection is that I was not part of the culture of participants being studied (healthcare professionals in general practice), and therefore whilst studying this population at PhD level, I considered myself to be an outsider (Bourke, 2014). It was important that I was aware of my own knowledge limitations, and lack of confidence in this area, as a clinician and junior researcher. I do not work in general practice and therefore will not fully understand the current demands on the workforce and organisation as a whole. I had not met any of my participants (but one) prior to interviewing them, which ensured a professional rapport was maintained.

When participants asked if I was a nurse, they assumed this to be in general practice. Their perception of my role may have been in a different capacity than they thought. I have also had little personal interaction with general practice as a patient and therefore have a limited first-hand understanding of patients' needs within primary care.

Whilst I acknowledged my personal biases and limited knowledge of both general practice and the participants themselves, I also embraced a level of subjectivity to actively construct a story between the participants and myself. Many questions asked in the interview had not been considered by participants until they discussed this with me. This made me question the co-construction of data between myself and the participants rather than data, which is determined objectively, which reaffirmed the choice of method, using interviews, to allow for multiple beliefs and realities to be embraced and reflected on. The need to iteratively develop the topic guide therefore became intrinsically important.

Further to this, the double coding of transcripts by all supervisors was helpful in ensuring an accurate account of the data is reported. However, each supervisor analysed the data with their own



backgrounds and experiences, influencing their decisions and interpretations. Identification of this was determined early on which confirmed the need to ensure a number of transcripts were coded by all members of the supervisory team, as well as, holding discussions with other researchers regarding our interpretation of findings.

With regards to the analysis of data, at first this process was viewed as messy in nature, with thousands of codes, memos, spreadsheets, transcripts etc. The 'messy' nature of qualitative research is distinct from the structured clinical environment exposed to, working as a staff nurse within ITU. Understanding that 'reflexive thematic analysis' (Braun & Clarke, 2021) is not a linear process became apparent as I commenced on the analysis journey. As I started to develop central organising concepts, these often changed when looking back at the data and in relation to the aims of the research question. Acknowledgement of the iterative development of analysis was documented in an analysis diary to ensure I was able to understand the decisions made and the process undertaken.

On a personal note, the process of 'reflexive thematic analysis' (Braun & Clarke, 2022a; 2022b) enabled me to take control of the data and to trust my conviction. Understanding that my role, thoughts, and experiences were a key influence in the development of themes, was a level of uncertainty I had not been exposed to. For example, not all participant insights were of value in answering the research question which was a learning point as the analysis process progressed.

Overall, this PhD has been pivotal in my personal and professional journey as a researcher, as the need to be reflexive concerning one's own thoughts, opinions and biases aids a greater understanding of the value of the research and to grow more confident in my knowledge of primary care general practice.

## **Video Group Consultations Survey**

### **Participant Information Sheet**

**(v0.2 18/08/2021)**

**Project Title:** A survey to evaluate the uptake and use of video group consultations by healthcare professionals in primary care general practice.

#### **Invitation**

You are being invited to participate in a survey as part of a PhD research project about the implementation, delivery, and impact of Video Group Consultations (VGCs) in primary care general practice.

We would like to gather your ideas regarding the use and uptake of VGCs across a variety of primary care general practice settings.

Before agreeing to take part, it is important for you to understand the purpose of this research, and what it will involve.

Please take your time to read this information carefully and contact the research team for any further clarification, if required.

#### **Purpose of the Survey**

We are interested in gathering your views and experiences regarding the use and uptake of VGCs in primary care general practice.

More specifically, we are keen to gather data on:

- The use of VGCs

- The uptake of VGCs by healthcare professionals in primary care general practice
- Demographics surrounding primary care settings e.g. characteristics of the practice, age ranges, etc.
- The roles associated with the VGC approach
- Which conditions are being managed using VGCs
- What are the barriers and enablers of the VGC approach

### **Why have I been invited?**

You have been invited to participate in this survey as you are currently working in a primary care general practice setting. Your views regarding the use and uptake of VGCs will aid both researchers and primary care practitioners to develop a greater understanding of how VGCs are being undertaken and embedded in practice.

### **What will the study mean for me?**

This survey will take up to 15 minutes to complete, using Microsoft Forms.

All information disclosed in the survey will be anonymised and treated in the strictest confidence.

### **What will the results of the study be used for?**

The results of this study will be used as an aspect of a PhD research project, focusing on the impact, delivery, and implementation of VGCs in primary care general practice.

We propose to disseminate results through engagement in presentations and conferences, and through publication. Any identifiable information will be removed, and all data will remain anonymous.

The results of this survey will be disseminated on social media platforms and participants can contact the research team directly. All requests for information will be dealt with individually.

**What are the benefits of taking part?**

Whilst the results of this study may not directly benefit you, it may have benefit for the future of primary care general practice in order to understand the use and uptake of VGCs. It will help to generate a greater understanding of the scale and demographics associated with the use and uptake of VGCs, such as location of practices, type of practice, size of practice, patient populations and staff demographics. It will also provide a picture of current practice, where VGCs work and do not work, and where improvements can be made to the approach to aid implementation from a health care professionals' perspective.

**What are the risks of taking part?**

There are no expected risks involved in completing this survey. There will be a time commitment of up to 10-15 minutes to answer all questions.

**How will information be used about me?**

All information will be anonymised to ensure confidentiality. No personal identifiable information will need to be provided on the survey and any reference to specific general practices will be removed. Any quotes (etc) used in publication will be anonymised.

Your consent form is in-built into the survey and will be stored on the University's password protected drive and will subsequently be destroyed according to the guidelines outlined in the Data Protection Act.

As part of a PhD research project, all data will be governed by Keele University. All information obtained from you will be used in the study

from the point of submission. Any communication with you as a participant will be destroyed immediately after the study has been completed.

You can find out more information with regards to how your information will be used at

<https://www.keele.ac.uk/privacynotices/privacynotice-researchparticipants/>

Your rights regarding access are limited, as secure management of information reflects the reliability and accuracy of the study. If you wish to withdraw participation, any information provided will be kept. At the point of submission, you will not be able to withdraw from the study. All data will be anonymous so the research team will be unable to identify individual responses. Consent is in-built within the survey and will remain anonymous. You will not be able to complete the survey if you do not give consent.

All data from the survey will be recorded and stored securely on the university's password protected drive and within Microsoft Forms. All information disclosed will be treated with the strictest confidentiality. All results will be anonymised. Anonymised data may be kept from the population to be used in further research studies. All handling, processing, storage, archiving and destruction of data is in line with the Research Data Management Policy at Keele University.

Keele University's Research Data Management Policy -

<https://www.keele.ac.uk/research/raise/datamanagement/#keele-research-data-management-policy>

You will also be able to contact National Health Service Counselling Services, and local voluntary services if you feel distressed or disclose any sensitive information you wish to talk about.

<https://www.keele.ac.uk/students/lifeoutsideofstudy/welfareandwellbeing/>

**We will work within strict protocols to ensure data confidentiality is upheld through accurate management of data.**

**Do I have to take part?**

There is no pressure to take part. Participation in this survey is **entirely voluntary**, and it is your decision whether to take part or not. A consent form will be issued at the beginning of the survey. You will not be able to participate if the consent form is not complete.

**Withdrawing from the study**

**You are not able to withdraw from the survey once the response is submitted due to the anonymity of the results. Consent is entirely voluntary at all stages of the study.**

Not participating in this research study, will not affect participation in further studies run by the School of Nursing and Midwifery at Keele University or your professional role.

**Access to information**

All data from the survey will be kept in a secure location on the University password protected drive using Microsoft Authenticator, and the Microsoft Forms interface, which will be only accessed by researchers associated with this study.

All responses are anonymised and will not bear any information which will identify you.

For further information, please see

<https://www.keele.ac.uk/propoa/usingtheinformationyouprovide/>

Any data requests will be considered individually after completion of the study.

**What if there is a problem?**

If you have a problem with any aspects of this research project, please contact Eleanor Scott on [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk) or Dr Andrew Finney on [a.finney@keele.ac.uk](mailto:a.finney@keele.ac.uk) who will be best to address your concerns. Or alternatively please contact the Research Integrity Team on [research.governance@keele.ac.uk](mailto:research.governance@keele.ac.uk) if you do not wish to contact the research team.

**If I would like to take part, what do I have to do?**

If you are interested in completing this survey, please click the link provided in the email.

Alternatively, please follow the link here which will direct you to the survey:

[INSERT LINK]

You can also find the link or QR code on the survey advert or through social media platforms.

**Contact Details for further information:**

If you have any further questions about this research project, please contact Eleanor Scott on [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk)

**We appreciate you taking the time to read this Participant Information Sheet.**

**Video Group Consultation Survey Invitation Letter (v0.2 18/08/21)**

Dear [Name],

My name is Eleanor Scott and I am a PhD student in the School of Nursing and Midwifery at Keele University. As part of a team, I am conducting a study looking at video group consultations in primary care general practice. I have enclosed a participant information sheet which describes the study more closely.

I will be conducting a survey to demonstrate the uses of video group consultations in primary care general practice. This will take up to 10-15 minutes to complete.

If you would be interested in participating in this survey, if you can either:

Follow the link:

<https://forms.office.com/r/HkCXxVw4Kg>

OR

Scan the QR code:



Consent to participate will be obtained at the start of the survey.

If we do not hear back from you, we will follow this up with an email and from which no further attempts to contact you will be made.



Please be assured all details will be kept in the strictest confidentiality.

I look forward to hearing back from you.

Kind regards,

Eleanor Scott



---

Eleanor Scott

Any questions, please feel free to email – **[e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk)**

## Appendix 21: Recruitment advert for cross-sectional survey



**Keele UNIVERSITY**  
Faculty of Medicine and Health Sciences

ARE YOU A HEALTHCARE PROFESSIONAL WORKING IN GENERAL PRACTICE?

ARE YOU INTERESTED IN HELPING US EXPLORE CURRENT PRACTICE ON

**VIDEO GROUP CONSULTATIONS**

IN PRIMARY CARE?

Then please complete our survey....

Firstly, please read the  
[Participant Information Form v0.2 18/08/21](#)

And if happy to participate, either:

Scan the QR Code



OR

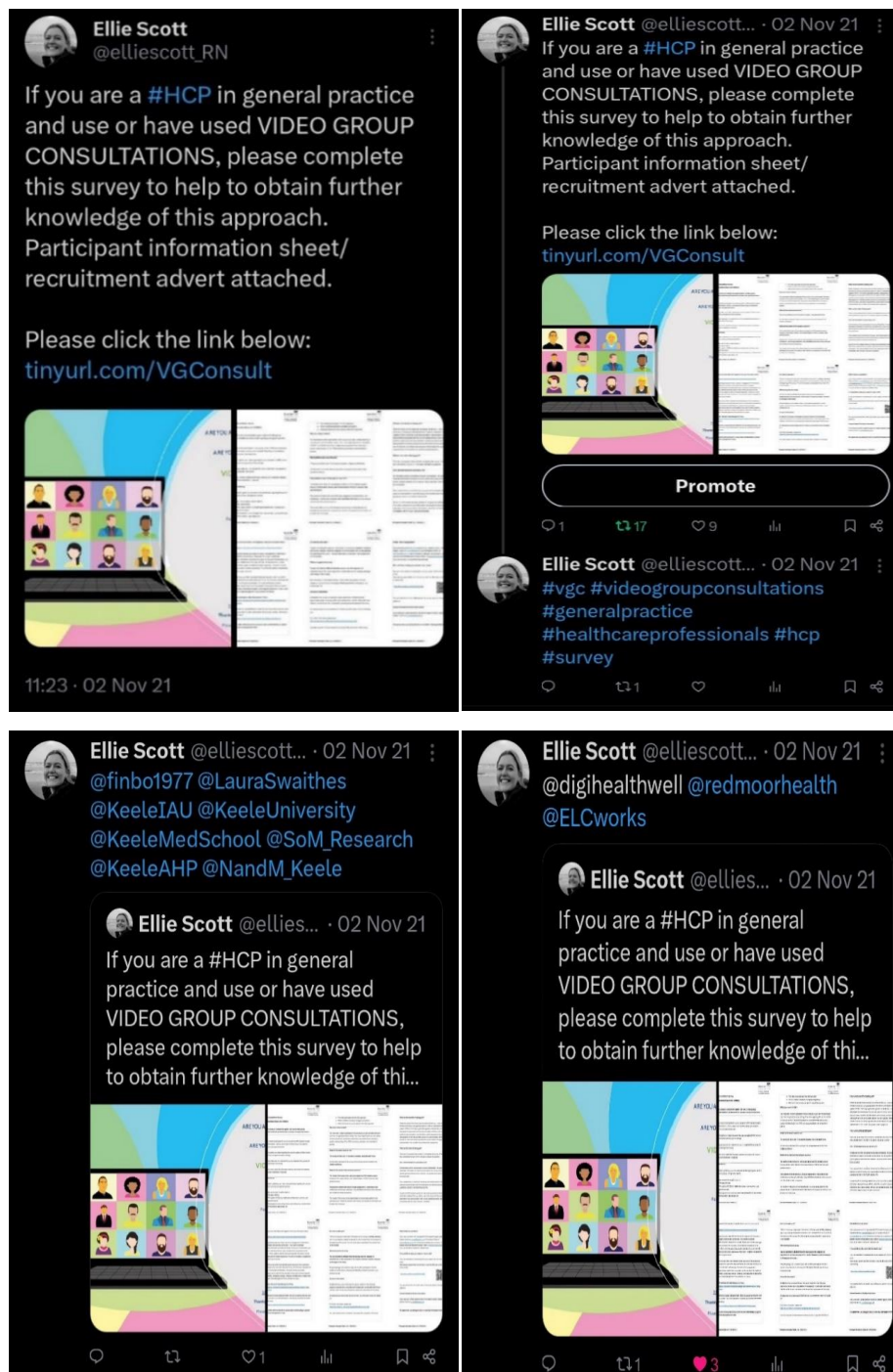
Click the link below  
<https://forms.office.com/r/HkCXvVw4Kg>

**Thankyou** for your time in completing this survey.

Please feel free to email [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk) if you have any further questions.

Social Media Recruitment Advert V0.2 18/08/21

*Social media recruitment advertisement for cross-sectional survey study*





Ellie Scott  
November 3, 2021

...

Hi everyone,

I hope you are all doing well!

We are conducting a survey questionnaire focusing on the use and delivery of VIDEO GROUP CONSULTATIONS by healthcare professionals in primary care general practice to inform future clinical practice.

If you have used or have previously used video group consultations in your practice, we would like to gather your views and experiences of video group consultations in practice.

This study is important because it aims to find out the potential value of video group consultations as an alternative model to consult with patients with long-term conditions within primary care.

...So why do we need you?

As a healthcare professional, we would like to gather your ideas around this and would like to ask if you would be willing to take part in a survey questionnaire.

Please find attached a participant information form and a recruitment advert for your information.

If you are happy to proceed, please click the link below or copy and paste the URL to access the survey. The survey will take no longer than 15 mins.

Link to survey:

<https://forms.office.com/Pages/ResponsePage.aspx...>

Any questions regarding this study, should be directed to the researcher directly (Eleanor Scott – [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk)).

Please would you be able to circulate this around your teams?

Your time and support would be greatly appreciated!

**Video Group Consultations Survey  
In-Built Consent Form  
(v0.2 18/08/2021)**

**Project Title: A survey to evaluate the uptake and use of video group consultations by healthcare professionals in primary care general practice.**

I confirm I have read and understood the Survey Participant Information Sheet version 0.2 dated 18/08/21.

I have had the opportunity to ask the researcher questions regarding the purpose of the research project.

I understand I have given voluntary consent to complete this survey and no personally identifiable information will be shared.

I understand that once I submit my response, I will not be able to withdraw from the study.

I understand that findings resulting from the survey will be stored for a minimum of 10 years, archived securely for re-use within the School of Nursing and Midwifery or other affiliated research centres in the future.

I understand that the results from this survey may be used in publications and/or reports in the future, with data being anonymously recorded.

I understand quotes from participants may be used in publication and will be anonymised.

If you have any further questions about this research project, please contact Eleanor Scott on [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk).

I agree to take part in this survey.

Clicking on the "agree" button below indicates that: - you have read the participant information provided, you voluntarily agree to participate, and you are at least 18 years of age.

If you "disagree", you will not be able to access the survey.

AGREE / DISAGREE



### **SAG Invitation PhD Briefing**

Over the last decade, primary care general practice has faced many challenges, attempting to address changing contexts in the NHS, by proposing new and more efficient models of integrative and collaborative care. However, increased pressures on practice teams have led to a recruitment and retention crisis. The importance of employing newer ways of working has thus become increasingly apparent. In early 2020, due to the COVID-19 pandemic, the general practice landscape was forced to restructure.

The initiation of video group consultations (VGCs) is regarded as one response, aiding the virtual management of groups of patients, sharing the same or similar health conditions. VGCs provide an alternative consultation method for patients and healthcare professionals, embodying digital advances, and a group consultation style model. However, due to its novelty, little is known about the role of VGCs in general practice.

This study aims to address the implementation, delivery and impact of VGCs in primary care general practice, by conducting a systematic review, survey and interviews with strong stakeholder engagement throughout. This research project hopes to inform the future of general practice, which requires the ability to adapt to new and different ways of working, impacting on both clinicians and patients alike.

### **Stakeholder Advisory Group (SAG) Agenda**

**Project Title: An exploration of the uptake and use of video group consultations in primary care general practice.**

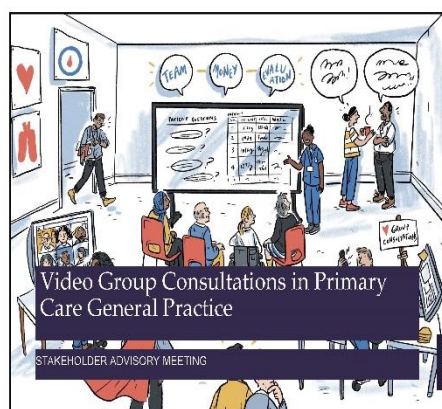
**Date: 9<sup>th</sup> June 2021 Time: 18:00 Where? Microsoft Teams**

Timings	Schedule of Events
18:00	Introduction and Housekeeping's
18:10	Ice Breaker!

<b>18:20</b>	Video Group Consultations Presentation
<b>18:30</b>	Discussion
<b>19:15</b>	Draft Survey
<b>19:30</b>	Closing Thoughts



## Appendix 24: SAG Meeting for cross-sectional survey (Presentation)



### Welcome!

Who we are –

Ellie Scott, PhD Student	
Dr Andrew Finney, Lead Supervisor	
Dr Laura Swaithes, Supervisor	
Dr Gwenllian Wynne-Jones, Supervisor	

Keele UNIVERSITY

### Agenda

Timings	Schedule of Events
18:00	Introduction and Housekeeping's
18:10	Ice Breaker!
18:20	Video Group Consultations Presentation
18:30	Discussion
19:15	Draft Survey
19:30	Closing Thoughts

### ICE BREAKER

If **YES**, please raise your hand (raise hand button on MS Teams)

Who has heard about video group consultations being used in primary care?

Would you like to know more about video group consultations?

Who has been involved in a video group consultation?

Are you considering using video group consultations in the future?



### VIDEO GROUP CONSULTATIONS

**BACKGROUND**

- Over the last decade, both the NHS and general practice have faced a number of challenging contexts:
- 'Five Year Forward View' (2013) and 'General Practice Forward View' (2016) – integrative and collaborative care
- Primary Care Networks and Sustainability and Transformation Plans

**VIDEO GROUP CONSULTATIONS (VGCs)**

- Re-structuring of general practice services due to the impact of the COVID-19
- VGCs are considered to be a response to the pandemic
- Defined as an overarching term to describe a delivery of care virtually with a group of patients (around 6-8) who share the same or similar health condition
- Used in the management of long-term conditions
- Roles involved: Clinician, Facilitator, Coordinator

**FACE TO FACE GROUP CONSULTATIONS**

- Face-to-face consultations were regarded as a solution included in one of the 'Ten High Impact Actions' (2018)
- A study by Swaithes and colleagues (2021) identified a number of Facilitators, Barriers and Practicalities of the approach

**NEED FOR NEWER WAYS OF WORKING**



## HOWEVER...

Due to the novelty of the approach, many practices have been reluctant to utilise VGCs in practice.

There is a clear disparity in engagement of practice, with those fully embedding VGCs to complete regular routine reviews and those who are unfamiliar with this concept.

Despite this, further research needs to assess and evaluate the delivery and impact of VGCs in primary care settings.




Illustration of a person sitting at a desk, looking at a computer monitor displaying a video conference with multiple participants.

```

graph LR
    subgraph PhD_Structure [THE PHD ITSELF...]
        direction TB
        S1[Step One – Systematic Review  
Factors affecting uptake and delivery of video as  
a CBRM. Rationale for the management of 20 long-  
term conditions in primary care general practice at  
a systematic review]
        S2[Step Two – Survey  
Aim – To determine the uptake and use of video in  
general practice in general practice  
Survey – Surveying 100 participating General Practice  
Surveys (n=100) (Video Consultation)]
        S3[Step Three – Semi-structured Interview  
Aim – To explore the impact and use of video group  
consultations in general practice in primary care  
general practice  
Method – Semi-structured Interview  
Sample Size – 25 participants including 10 primary care general  
practices using video group consultations]
        S1 --> S2
        S2 --> S3
    end

    subgraph Research_Question [RESEARCH QUESTION:  
An Exploration Of The Implementation,  
Delivery And Impact Of Video Group  
Consultations To Manage Long-Term  
Conditions In Primary Care General  
Practice.]
    end

    S3 --> RQ[Research_Question]

```

**THE PHD ITSELF...**

**RESEARCH METHODS**

**Step One – Systematic Review**  
Factors affecting uptake and delivery of video as a CBRM. Rationale for the management of 20 long-term conditions in primary care general practice at a systematic review

**Step Two – Survey**  
Aim – To determine the uptake and use of video in general practice in general practice  
Survey – Surveying 100 participating General Practice Surveys (n=100) (Video Consultation)

**Step Three – Semi-structured Interview**  
Aim – To explore the impact and use of video group consultations in general practice in primary care general practice  
Method – Semi-structured Interview  
Sample Size – 25 participants including 10 primary care general practices using video group consultations


**RESEARCH QUESTION:**  
An Exploration Of The Implementation, Delivery And Impact Of Video Group Consultations To Manage Long-Term Conditions In Primary Care General Practice.

# Themes for Discussion

**FOUR** key themes for discussion

1. Roles associated with VGCs
2. Implementation/Delivery
3. Practicalities
4. Enablers and Barriers to VGCs

Please feel free to speak up or use the **CHAT** function to share any ideas

[illegible]

# Draft Survey Questions

**RESEARCH QUESTION:**

AN EXPLORATION OF THE UPTAKE AND USE OF VIDEO GROUP CONSULTATIONS IN PRIMARY CARE GENERAL PRACTICE.

# What are your thoughts?....

Appendix 25: GRIPP2 report checklist to improve reporting of patient and public involvement in research (short form) (Staniszewska et al., 2017)

Section and Topic	Item	Reported in section:
1. Aim	<p>PPIE is integral to this PhD study, defined as '<i>research carried out with or being carried out by the public (or service users), rather than research on patients and public as subjects or participants</i>' (Mathie et al., 2014, p.36). The role of the patient within research can either take a passive approach (patient is a data point) or an active role (patient as a researcher) (Domecq et al., 2014). Therefore, it has been well noted that inclusion of patients and members of the public at all levels in research has great benefit in the development of research and can help to enhance uptake of new evidence and the credibility of results (Domecq et al., 2014; Nilsen et al., 2006; Staley, 2009).</p> <p>The initial considerations of PPIE in this thesis was to ensure the research was focused on relevant and pertinent issues. The role of PPIE in this research was discussed at the beginning of the PhD project, to ensure PPIE was considered throughout the duration of the research (Blackburn et al., 2018).</p> <p>The RUG group and LINK group more specifically has been involved in the development of this thesis (Jinks et al., 2016; Keele University, 2024b; Keele University, 2024c).</p>	

Section and Topic	Item	Reported in section:
	<p>The purpose of PPIE for each research study is discussed below:</p> <p><u>Cross-sectional survey</u></p> <p>Whilst the cross-sectional survey was aimed at HCPs, it was essential to gather patients views and experiences within a SAG meeting. Inclusion of PPIE members and support staff within a SAG, through the RUG, helped to gather information pertinent to service users and the local populations which is relevant to HCPs (Jinks et al., 2016; Keele University, 2024b; Keele University, 2024c). Patient engagement amongst HCPs can also help to discover important topics not currently identified by the research team, to which other stakeholders are deemed essential (Haynes et al., 2018).</p> <p><u>Semi-structured interviews</u></p> <p>Two PPIE meetings were conducted during the semi-structured interview study.</p>	<p>5.6.1 Survey questionnaire development</p>

Section and Topic	Item	Reported in section:
	<p><i>Meeting 1:</i></p> <p>The first PPIE meeting was conducted prior to the interview study. The aims and objectives of the meeting were to:</p> <ul style="list-style-type: none"> <li>• Provide feedback on patient interview topic guides, consent form and participant information sheet</li> <li>• Seek advice on the recruitment of patients for this study</li> <li>• Develop an understanding of where PPIE may be useful within this research study.</li> </ul> <p><i>Meeting 2:</i></p> <p>The second PPIE meeting was conducted during data analysis in which initial findings were discussed with the LINK groups to gather ideas and opinions on implementation and knowledge mobilisation (Appendix 50).</p>	7.6.1 Interview topic guide development
<b>2. Methods</b>	Methodologically, PPIE involvement has the potential to not only improve quality of research but to improve the accountability of researchers and ensure the research process is transparent (Boote et al., 2011).	

Section and Topic	Item	Reported in section:
	<p><u>Cross-sectional survey</u></p> <p>A lay representative from Keele University's RUG and a PPIE support member took part of a SAG to inform the cross-sectional survey. This was conducted on 9<sup>th</sup> June 2021 using Microsoft Teams and lasted one hour and a half (Appendix 51).</p> <p>Chapter 5 presents further details of the stakeholder engagement meeting methods.</p> <p><u>Semi-structured interviews</u></p> <p><i>Meeting 1:</i></p> <p>The meeting was conducted virtually using Microsoft Teams. Four RUG members attended, supported by a PPIE representative from the IAU at Keele University. The meeting lasted around 90 minutes, and a PowerPoint presentation was used to support discussion (Appendix 52). Materials used within the meeting and the PowerPoint presentation were sent to the RUG members a week before the meeting took place. The</p>	<p>5.6.1 Survey questionnaire development</p> <p>7.6.1 Interview topic guide development</p>

Section and Topic	Item	Reported in section:
	<p>meeting was recorded, allowing the candidate to use discussion to support the development of the study. Meeting notes were taken to document key insights (Appendix 53).</p> <p>An overview of the PhD project, the context surrounding VGCs and details regarding the interview were provided at the beginning of the meeting. The meeting was thus structured according to the aims and objectives of PPIE in the research study. Firstly, the RUG members were able to provide feedback on the interview topic guides. This followed by means of recruiting patients into the study and various suggestions of ways to do this. Thirdly, the participant information sheet was reviewed, in which the wording and structure of sentences was focused on, to ensure the language was suitable and understandable for patients. Finally, the RUG members provided their thoughts and opinions on the interview consent forms. The meeting was finalised with any comments regarding PPIE input throughout the PhD and where members thought PPIE may enhance the study. Contact details of the candidate were provided and channels in which the candidate could stay in touch with members were provided.</p>	

Section and Topic	Item	Reported in section:
	<p><i>Meeting 2:</i></p> <p>This PPIE meet took place as part of a virtual meeting hosted by the Impact Accelerator Unit at Keele University. Initial findings were discussed using a PowerPoint presentation, and a generalised discussion on these findings were subsequently conducted. Notes were taken throughout the meeting and were written up after the meeting to aid clarification and interpretation of discussion.</p> <p><i>Race Equality Framework for Public Involvement in Research</i></p> <p>Collaboration with the ambassador [NK] for the REFAPIR at Keele University was maintained to ensure the design of methods is inclusive to diverse populations and groups that were once considered 'harder to reach' populations (Tran et al., 2015).</p> <p><i>Knowledge Mobilisation</i></p> <p>Attendance at the UK Knowledge Mobilisation Forum [UKKMbF] (2022) and regular meetings with the West Midlands Knowledge Mobilisation group has helped the researcher consider the research in a real-world context, aiding an understanding to the applicability and relevance to patients and the public.</p>	

Section and Topic	Item	Reported in section:				
3. Study Results	<u>Cross-sectional survey</u> Chapter 5 section presents further details of the stakeholder engagement meeting results. Field notes are provided in Appendix 54.	5.6.1 Survey questionnaire development				
	<u>Semi-structured interviews</u> <i>Meeting 1:</i> Key discussion points from the first PPIE meeting are provided below:					
	<table><tr><td><b>Topic guides</b></td><td><ul style="list-style-type: none"><li>• Age</li><li>• Socio-Economic Background</li><li>• Mental Health and Young People</li><li>• Ethnicity</li><li>• Digital exclusion</li><li>• Digital Access</li></ul></td></tr><tr><td><b>Consent forms</b></td><td><ul style="list-style-type: none"><li>• Use both online and written consent forms</li><li>• ‘Agree’ and ‘Disagree’</li></ul></td></tr></table>	<b>Topic guides</b>	<ul style="list-style-type: none"><li>• Age</li><li>• Socio-Economic Background</li><li>• Mental Health and Young People</li><li>• Ethnicity</li><li>• Digital exclusion</li><li>• Digital Access</li></ul>	<b>Consent forms</b>	<ul style="list-style-type: none"><li>• Use both online and written consent forms</li><li>• ‘Agree’ and ‘Disagree’</li></ul>	7.6.1 Interview topic guide development
	<b>Topic guides</b>	<ul style="list-style-type: none"><li>• Age</li><li>• Socio-Economic Background</li><li>• Mental Health and Young People</li><li>• Ethnicity</li><li>• Digital exclusion</li><li>• Digital Access</li></ul>				
<b>Consent forms</b>	<ul style="list-style-type: none"><li>• Use both online and written consent forms</li><li>• ‘Agree’ and ‘Disagree’</li></ul>					



Section and Topic	Item		Reported in section:
		<ul style="list-style-type: none"><li>• Give participants the option to go back to the consent form and fill it in later</li></ul>	
	Participant information sheets	<ul style="list-style-type: none"><li>• Change 'surgery' to 'GP surgery' or 'health centre'</li><li>• Consider using 'clinicians' or 'healthcare professionals' instead of 'general practice staff'</li><li>• Section on patient impact</li><li>• Inclusion of images to break down text</li><li>• Consider length</li><li>• Reduce sections on data protection and confidentiality</li></ul>	
	Recruitment	<ul style="list-style-type: none"><li>• Text Message from Practice Manager</li><li>• Personal Recommendations from GOs</li><li>• Charities – SCOPE, ROS, Venus Arthritis, Disability UK</li><li>• NIHR People in Research</li></ul>	

Section and Topic	Item		Reported in section:
	<b>PPIE in this research</b>	<ul style="list-style-type: none"><li>• Meeting after the interviews to feedback results</li><li>• For data analysis</li><li>• Acknowledgements – virtual patient advisory group</li></ul>	
	<p><i>Meeting 2:</i></p> <p>Key discussion points from the second PPIE meeting are summarised below:</p> <ul style="list-style-type: none"><li>• To carry out a further study gathering patients’ perceptions of VGCs in general practice</li><li>• To consider the term ‘consultation’ – does this have a clinical connotation?</li><li>• Does impact have to be rigidly defined? Impact is not only demonstrated by reduction in cost or reduction in time, but value to patients</li><li>• Does the removal of the confidentiality aspect to a VGC make it a webinar?</li><li>• Does patient uptake of VGCs rely on the premise that NHS services are free? Compared to community interventions such as weight watchers</li><li>• Does it have to include a clinical component to be a VGC?</li></ul>		

Section and Topic	Item	Reported in section:
	Further notes made from the meeting are included in Appendix 49.	
<b>4. Discussions and conclusions</b>	<p><u>Cross-sectional survey</u></p> <p>As a RUG member participated in a SAG, the overall extent to which PPIE influenced the study overall can only be viewed in relation to this meeting.</p> <p>However, the RUG member did highlight some of the practicalities associated with the approach, with regards to an increased fragmentation of care, confidentiality, digital literacy and operationalisation of VGCs.</p> <p><u>Semi-structured interviews</u></p> <p><i>Meeting 1:</i></p> <p>This meeting was particularly useful in influencing the language used in the topic guide, consent form and participant information sheets. From this meeting, forms were amended to ensure appropriateness and readability for patient audiences.</p>	<p>5.6.1 Survey questionnaire development</p> <p>7.6.1 Interview topic guide development</p>

Section and Topic	Item	Reported in section:
	<p>Whilst this meeting provoked discussion on the ways in which patients can be recruited into the study, it was decided that patients would not be included and therefore discussions regarding recruitment were not utilised. This discussion will be useful for future potential studies with patients.</p> <p><i>Meeting 2:</i></p> <p>This meeting help to shape and interpret some of the thematic findings from the interview study, in particular, operationalisation of VGCs and the ways in which VGCs can demonstrate impact. This helped in refining themes and aiding interpretation of the findings as a whole.</p>	
<b>5. Reflections/ critical perspective</b>	<p>The virtual nature of all PPIE engagement negated face-to-face interaction and debate, reducing the need to recognise facial and body cues, which may have been used to emphasis a point of interest. However, this aided the bringing together of PPIE members across the UK, due to the virtual nature of the approach.</p> <p>Holding PPIE meetings at different stages of the research was beneficial in ensuring discussion was pertinent to each particular stage of the study.</p>	5.6.1 Survey questionnaire development

Section and Topic	Item	Reported in section:
		7.6.1 Interview topic guide development

The involvement of stakeholders to inform the cross-sectional survey study was structured using the key stages of stakeholder engagement, developed by Lawrence et al. (2000). These key stages included: understanding the issue to be resolved, identification of the stakeholders to be involved, convening a group, and defining and discussing topic options.

Firstly, understanding the issue to be resolved was of central importance. This was facilitated by conducting a SAG meeting to inform areas of discussion for the cross-sectional survey study (Appendix 55). This meeting also helped to contextualise ideas and thoughts in the development of this thesis.

Key topics of interest were discussed by stakeholders in the meeting, including:

- Demographics (inclusive of practice and patient demographics)
- Definition of a VGC
- Conditions managed by VGCs
- Practicalities of VGCs (inclusive of length, platform, time etc)
- Roles involved (in particular facilitation)
- Training requirements
- Enablers and Barriers

Secondly, understanding the issue to be resolved led to the identification of particular stakeholders. Olayinka Ladeji (2018) highlighted the importance of identifying stakeholders who have expertise in the topic, would be interested in the topic or would be affected by the research, which requires reflection throughout the stakeholder engagement process.

A taxonomy produced by Concannon et al. (2012) for stakeholder engagement in patient-centred outcomes research, helped to identify stakeholders and provide a guide for researchers on how to address this. *'The 7Ps Framework to Identify Stakeholders'* was proposed, referring to key groups to consider for stakeholder engagement: patients and the public, providers, purchasers, payers, policy makers, product makers, and principal investigators (Concannon et al., 2012). This tool helped to identify the multi-disciplinary nature of stakeholder groups, with the knowledge and experience to work between research and practice (Aungst et al., 2012; Gilbert, 2016; Parry et al., 2009).

The following stakeholders were therefore invited to this meeting:

- Representatives from Commissioning Groups
- Clinical Leads in Primary Care
- Clinicians in General Practice Primary Care, including GPs, ANPs, GPNs
- Clinicians with expertise in research
- Digital experts

- Patient and Public Involvement and Engagement Representatives – Keele University's Research User Group [RUG]

Recruitment of stakeholders was achieved through networking of individual participants, aiding the engagement of stakeholders who are pertinent to the research and thus development of the thesis. An email and invitation letter were distributed with details of a virtual meeting hosted on Microsoft Teams, outlining the reasons for both the meeting and research aim, with a copy of the meeting agenda (Appendix 51). An RSVP was attached to make sure a confirmation of numbers was collected prior to commencement of the meeting. On receiving an RSVP, a meeting link was sent out. Ethical approval was not necessary as this meeting was for the purpose of stakeholder engagement and not research.

Thirdly, convening of the group was possible using a virtual platform. This was conducted on 9<sup>th</sup> June 2021 using Microsoft Teams and lasted for 90 minutes (Appendix 24). Fourteen individuals approached to take part, ten agreed to participate and nine attended the meeting. Six primary care health professionals, one secondary care clinician, one lay representative and a PPIE support member took part in the advisory group (seven females and two males). Two of the candidate's supervisory team also attended to facilitate and participate in discussion. Both the lead supervisor and the candidate facilitated the meeting.

Participants of the advisory group included a Honorary Professor, retired GP with a commissioning background, with extensive



experience in developing and implementing telehealth in primary care; a GPN working on a Topol Fellowship on VGCs; two ANPs with experience of delivering and implementing VGCs, with special interests in evidence-based practice; a Professor of Nursing working on projects focusing on the evaluation of VGCs; a lay representative from Keele University's RUG; a PPIE representative; a Digital expert based in secondary care, implementing digital services for cardiology patients; and an ex-GPN, working on the digital-upskilling of GPNs, as part of the Advanced Learning Set Programme.

Lastly, a discussion guide and agenda were guided by the existing literature on the topic at the current stage of thesis, including NPT (May et al., 2018) constructs. Four key themes were identified to inform discussion, including: i) Roles Associated with VGCs, ii) Implementation and Delivery, iii) Practicalities of the approach, and iv) Enablers and Barriers.

An overview of the topic was presented to the group initially to outline and contextualise the thesis. This was supported with a PowerPoint presentation to aid visualisation of the approach (Appendix 24). The use of the whiteboard function allowed for quieter personalities to express views and opinions on a larger screen, without the pressures of vocalising to the group. Ideas and opinions were documented on the whiteboard throughout the discussion, relevant to the four key themes. A QR code and link was also provided to a draft of the survey questionnaire, important for the next stage of the research. Stakeholders were able to scan the QR code on screen from their phone's camera to access the survey,

in which they were able to view the questions in real-time. This provided the platform to discuss any issues with the survey, as well as ensure the questions were appropriate for general practice clinicians.

After verbal consent was obtained by the stakeholders involved, the discussion was digitally recorded and notes were recorded by a member of the supervisory team, which served as a reminder to the candidate. A de-brief meeting was scheduled after the meeting to discuss insights relevant to the development of the thesis, and any issues that arose. Field notes were taken from the recording to note down key areas of discussion (Appendix 54).

An initial descriptive analysis of notes taken was conducted. De-brief meetings identified key areas of discussion and allowed for further familiarisation with the notes taken and with the recording of the meeting for the cross-sectional survey study. These notes were transcribed from a digital video recording of this SAG meeting to aid familiarisation.

Broad themes, identified using the principles of thematic analysis (Braun & Clarke, 2006), were discussed with the supervisory team to ensure key issues were identified for consideration in the thesis.

**Sample Survey Questions v0.2 18/08/21**

CONSENT FORM	
<p>Consent - (required)</p> <p>I confirm I have read and understood the Survey Participant Information Sheet version 0.2 dated 18/08/21.</p> <p>I have had the opportunity to ask the researcher questions regarding the purpose of the research project.</p> <p>I understand I have given voluntary consent to complete this survey and no personally identifiable information will be shared.</p> <p>I understand that once I submit my response, I will not be able to withdraw from the study.</p> <p>I understand that findings resulting from the survey will be stored for a minimum of 10 years, archived securely for re-use within the School of Nursing and Midwifery or other affiliated research centres in the future.</p> <p>I understand that the results from this survey may be used in publications and/or reports in the future, with data being anonymously recorded.</p> <p>I understand quotes from participants may be used in publication and will be anonymised.</p> <p>If you have any further questions about this research project, please contact Eleanor Scott on <a href="mailto:e.r.scott@keele.ac.uk">e.r.scott@keele.ac.uk</a>.</p> <p>I agree to take part in this survey.</p>	<p>AGREE/DISAGREE</p>

<p>Clicking on the "agree" button below indicates that: - you have read the participant information provided, you voluntarily agree to participate, and you are at least 18 years of age.</p> <p>If you "disagree", you will not be able to access the survey.</p> <p>AGREE / DISAGREE</p>	
<b>PARTICIPANT DEMOGRAPHICS</b>	
<p>1. What is your age? (required)</p>	<p>A) 18-24 B) 25-34 C) 35-44 D) 45-54 E) 55-64 F) &gt;65</p>
<p>2. What is your gender? (required)</p>	<p>A) Male B) Female C) Non-Binary D) Prefer not to say</p>
<p>3. What is the highest degree or level of school you have completed? (required)</p>	<p>A) Less than high school qualifications (e.g. GCSEs) B) High school degree or equivalent (e.g. GCSEs) C) Bachelor's degree (e.g. BA, BSc) D) Master's Degree (e.g. MA, MSc, MEd) E) Doctorate (e.g. PhD) F) Other (please specify)</p>
<p>4. If you selected Other – What is the highest degree or level of school you have completed?</p>	<p>(free text)</p>
<b>PARTICIPANTS ROLE</b>	
<p>5. What is your role in your practice? (required)</p>	<p>A) General Practitioner (GP)</p>

	B) General Practice Nurse (GPN) C) Advanced Clinical/Nursing Practitioner (ACP/ANP) D) Health Care Assistant (HCA) E) Allied Health Professional (AHP) F) First Contact Practitioner (FCP) G) Administrative Support/Receptionist H) Practice Manager I) Clinical Pharmacist J) Social Prescriber K) Physicians Associate L) Other (please specify) (multiple answers)
6. If you selected Other - What is your role in your practice? (Please feel free to ignore this question if not applicable)	(free text)
7. How many years have you been qualified or registered or working in your role? (required)	A) 0-3 B) 3-5 C) 5-10 D) 10-20 E) 20-30 F) >30
8. How long have you worked in general practice? (required)	A) 0-3 B) 3-5 C) 5-10 D) 10-20 E) 20-30 F) >30
9. Do you have any specialist qualifications relating to your role? e.g. prescribing/advanced diabetes qualification/NVQ (required)	YES/NO

10. If so, what? (required)	(free text)
<b>PRACTICE DEMOGRAPHICS</b>	
11. Where is your practice located in the UK? (required) <i>(UK map to demonstrate areas/locations)</i>	A) North East England B) North West England C) Yorkshire & The Humber D) East Midlands E) West Midlands F) East of England G) London H) South East I) South West J) Wales M) Scotland N) Northern Ireland
12. What is the size of your practice? (required)	A) 0-2000 B) 2000-5000 C) 5000-10000 D) 10000-15000 E) 15,000-20,000 F) 20,000-25,000 G) >25,000
<b>USE AND UPTAKE OF VIDEO GROUP CONSULTATIONS</b>	
13. Do you use or have previously used video group consultations in your practice? (required)	B) Currently using C) Have previously used
14. If you have previously used video group consultations and stopped, why have you stopped? (optional) (Please feel free to ignore this question if not applicable)	(free text)
15. How does your practice define a video group consultation? (required)	A) Video group consultation B) Video group clinic C) Shared medical appointment D) Group Therapy E) Education Therapy F) Support Group

	G) None of the above (multiple answers)
16. Do you describe video group consultations in any other way? (optional) (Please feel free to ignore this question if not applicable)	(free text)
17. How would you define how you use video group consultations in your practice?(required) i.e. information providing, to ask questions, long-term condition review, support group, webinar etc	(free text)
18. How do you define your role in the delivery of video group consultations? (required)	A) Clinician (a healthcare professional to which the patient consults with)  B) Facilitator (A role which requires the chairing and running of the meeting)  C) Coordinator (A role which organises the meeting, any correspondence and follow up's etc.)
19. What is your role in the delivery of video group consultations in your practice? (required)	A) General Practitioner (GP) B) General Practice Nurse (GPN) C) Advanced Clinical/Nursing Practitioner (ACP/ANP) D) Health Care Assistant (HCA) E) Allied Health Professional (AHP) F) First Contact Practitioner (FCP)

	G) Administrative Support/Receptionist H) Practice Manager I) Clinical Pharmacist J) Social Prescriber K) Physicians Associate L) Health Coach M) Paramedic N) Other (please specify) (multiple answers)
20. If you selected Other - Are any other roles involved in delivering video group consultations? (optional) (Please feel free to ignore this question if not applicable)	(free text)
21. What conditions are being managed using video group consultations? (tick all that apply) (required)	A) Cardiovascular conditions (e.g. hypertension, high cholesterol etc) B) Respiratory Conditions (e.g. Asthma, COPD, COVID-19) C) Diabetes (Type 1 or Type 2) D) Weight Management (e.g. Obesity) E) Pain Management (e.g. Chronic Pain, Acute Pain) F) Cancer Care G) Musculoskeletal Conditions (e.g. Arthritis, Osteoporosis)



	H) Mental Health (e.g. depression, anxiety, loneliness) I) Long COVID J) Paediatrics (multiple answers)
22. Do you manage any other conditions through video group consultations? (optional) (Please feel free to ignore this question if not applicable)	(free text)
23. How many patients are usually included in a video group consultation? (required)	A) 2-4 B) 4-6 C) 6-8 D) 8-10 E) 10+
24. What are the age ranges of patients engaging with video group consultations? (tick all that apply) (required)	A) 10-20 B) 20-30 C) 30-40 D) 40-50 E) 50-60 F) 60-70 G) 70-80 H) 80+ (multiple answers)
25. How long does it usually take to deliver a video group consultation? (on average) (required)	A) <30 minutes B) 30-60 minutes C) 60-90 minutes D) >90 minutes (multiple answers)
26. Are patients offered the choice of a video group consultation, group consultation or a one-to-one consultation, if a video group consultation is available for a particular condition? (required)	YES/NO
27. Did your practice already deliver group consultations before offering video group consultations? (required)	YES/NO/NOT SURE
28. Which platforms are you using to deliver video group consultations? (required)	A) Microsoft Teams B) Zoom C) Accurx D) Skype E) Whatsapp F) Facetime

	G) Cisco Webex H) Attend Anywhere I) Other (please specify) (multiple answers)
29. If you selected Other - Are there any other platforms which are used? (optional) (Please feel free to ignore this question if not applicable)	(free text)
<b>ENABLERS AND BARRIERS OF VIDEO GROUP CONSULTATIONS</b>	
30. What has helped you to get video group consultations up and running? (required)	A) Training B) VGC Implementation Toolkit C) VGC Champion D) IT support E) Whole Practice Engagement F) Protected time allocated to VGCs G) Commissioning Support H) Other (please specify) (multiple answers)
31. What other factors have played a role in the set-up of video group consultations? (optional) (Please feel free to ignore this question if not applicable)	(free text)
32. Have you found any barriers or challenges in the uptake and use of video group consultations? (required)	(free text)
<b>VIDEO GROUP CONSULTATION TRAINING</b>	
33. What skills/training do you think are needed to deliver a video group consultation, if any? (required)	(free text)
34. Have you been involved in a formal training session for delivery video group consultations? (required)	(free text)

35. What training provider was used, if known? (optional)	(free text)
36. Do you know how many of your practice staff have been trained in video group consultations? (required)	A) 0 B) 1-3 C) 4-7 D) 8-10 E) 10+ F) Not sure
37. Would you want to engage with formal training on video group consultations? (required)	YES/NO/MAYBE
38. What would you require from VGC training which would make you feel more comfortable in implementing this approach? (required)	A) Session Flow B) Understanding of Roles in a VGC C) Confidentiality and Consent D) Technical Tips E) Planning for a Successful VGC F) Managing Group Dynamics G) Other (please specify)
39. If you selected Other – What would you require from VGC training which would make you feel more comfortable in implementing this approach? (optional)  (please feel free to ignore this question if not applicable)	(free text)
<b>END</b>	
Thank you for your time and expertise in completing this survey.  Your participation has greatly helped us in this research project and we hope to use the findings to better inform the future of primary care practice.	

## Appendix 28: Example of content analysis coding sheet

All Codes relating to each question:

How would you define how you use video group consultations in your practice	If you have previously used video group consultations and stopped, why have you stopped	Do you manage any other conditions through video group consultations	Have you found any barriers or challenges in the uptake and use of video group consultations	What other factors have played a role in the set-up of video group consultations	What skills/training do you think are needed to deliver a video group consultation, if any	What would you require from VGC training which would make you feel more comfortable in implementing
<ul style="list-style-type: none"> <li>An online group</li> <li>Enabling discussion</li> <li>A group of patients with similar health issues</li> <li>Chronic disease management</li> <li>Consultation with patient and medical student in remote locations</li> <li>Diabetic review</li> <li>Diabetic review</li> <li>Long-term condition review</li> <li>Group support</li> <li>Information providing</li> <li>Goal setting</li> <li>Group support</li> <li>Information providing</li> <li>Enabling discussion</li> <li>Interactivity</li> <li>Information providing</li> <li>Long-term condition review</li> <li>Information providing</li> <li>Experience of sharing</li> <li>Group support</li> <li>Questions and answers</li> <li>Information providing</li> <li>Health promotion</li> <li>Information sharing</li> <li>Group support</li> <li>Information providing</li> <li>Group support</li> <li>Fostering patient experts</li> <li>Long-term condition review</li> <li>Long-term condition review</li> <li>Cancer care review</li> <li>Post-natal care review</li> <li>Long-term condition review</li> <li>Long-term condition review</li> <li>Long-term condition review</li> <li>Disease Management</li> <li>Long-term condition review</li> <li>Group support</li> <li>Questions and answers</li> <li>Mental Health</li> <li>Presentation of different speakers</li> <li>Long-term condition review</li> <li>Long-term condition review</li> <li>Disease Management</li> <li>Long-term condition review</li> <li>Coaching</li> <li>Lifestyle medicine approach</li> <li>Long-term condition review</li> <li>Lifestyle medicine care</li> <li>Group support</li> <li>Questions and answers</li> <li>Long-term condition review</li> <li>Group support</li> </ul>	<ul style="list-style-type: none"> <li>Change in job role</li> <li>Buy-in from practice manager</li> <li>Low attendance</li> <li>Difficulty with recruitment</li> <li>Additional workload</li> <li>Facilitator moved away</li> <li>High Did Not Attend Rate</li> <li>Lack of Practice Investment</li> <li>Lack of Investment for the Sustainability of VGCs</li> <li>Lack of capacity</li> <li>Push back from patients</li> <li>VGC programme ended</li> <li>Low attendance</li> <li>Time intensive for a small group</li> <li>Preparation of resources</li> <li>Technology support</li> <li>Clinician support</li> <li>Administrative support</li> <li>Lack of motivation and uptake from patients</li> <li>Face-to-face vs. virtual</li> </ul>	<ul style="list-style-type: none"> <li>Medical Student Teaching</li> <li>Menopause</li> <li>Menopause</li> <li>Men's Health</li> <li>Post Natal Care</li> <li>Condition chosen by patients for group consultation</li> <li>Pre-Diabetes in Urdu Language for women</li> <li>Pre-Diabetes</li> <li>Newly Diagnosed Diabetes</li> <li>Exercise Class</li> <li>Menopause</li> <li>Disease Prevention</li> <li>Cancer</li> <li>Dementia</li> <li>No</li> <li>No but shortly</li> <li>Not yet</li> <li>Not at the moment</li> <li>Not yet</li> </ul>	<ul style="list-style-type: none"> <li>Technology</li> <li>Digital Literacy</li> <li>Patient access to Technology</li> <li>Recruitment</li> <li>Scheduling of VGCs</li> <li>Low patient uptake</li> <li>Scheduling of VGCs</li> <li>Availability of patients</li> <li>Timing of VGCs</li> <li>Lack of sustainability</li> <li>High Did Not Attend Rates</li> <li>Technology</li> <li>Low patient uptake</li> <li>Cancer</li> <li>Slow patient uptake</li> <li>Attendance</li> <li>Patient buy-in</li> <li>Sense-making of group consultations</li> <li>Challenging Doubters</li> <li>Confidence with Technology</li> <li>Digital Exclusion</li> <li>Resource Required for VGCs</li> <li>Administration</li> <li>Patient buy-in</li> <li>Individual vs. group</li> <li>IT access</li> <li>IT access</li> <li>Technology</li> <li>Patient demographics</li> <li>Sense-making of VGCs</li> <li>Alternative consultation styles</li> <li>Low attendance</li> <li>Face-to-face vs. virtual</li> <li>Technology</li> <li>Patient preference of in-person vs. virtual</li> <li>Lack of confidence</li> <li>Making time to plan</li> <li>New ways of working</li> <li>Primary care being "stuck in a rut"</li> <li>Too busy to innovate</li> <li>GDPR stifling innovation</li> <li>Lack of funding</li> <li>Sense-making of VGCs</li> <li>Training</li> <li>Time-Saving</li> <li>Face-to-face vs. virtual</li> <li>Patient and Staff Buy-in</li> <li>Administration</li> <li>Time</li> <li>Planning</li> <li>No time for planning recall of patients</li> <li>Zoomed out</li> <li>Technology</li> <li>Face-to-face vs. virtual</li> </ul>	<ul style="list-style-type: none"> <li>Administration support</li> <li>Liaising with other practices</li> <li>Administration support</li> <li>Support from GPs</li> <li>Reluctancy to change</li> <li>Believing in the model</li> <li>CCG buy-in</li> <li>COVID</li> <li>Replacement consultation model due to COVID</li> <li>Increased digital engagement</li> <li>Determination</li> <li>Enthusiasm from staff</li> <li>Government funding</li> <li>Group support</li> <li>Time</li> <li>Initial work-up reduces admin</li> <li>Professional confidence</li> <li>Interest in various patient groups</li> <li>Utilising experts already running VGCs</li> <li>Commissioning</li> <li>Organisational support</li> <li>External funding</li> <li>Personal interest</li> <li>Organisational support</li> <li>Practice enthusiasm</li> <li>Desire to be more digital</li> </ul>	<ul style="list-style-type: none"> <li>A knowledge of mental health and wellbeing</li> <li>Group facilitation skills</li> <li>Empathy</li> <li>Patience</li> <li>Approachability</li> <li>Enthusiasm</li> <li>IT skills</li> <li>Project management</li> <li>Coaching skills</li> <li>Coaching skills</li> <li>Knowledge base of conditions</li> <li>Coaching skills</li> <li>Group facilitation skills</li> <li>Communication skills</li> <li>IT skills</li> <li>Communication skills</li> <li>Group management skills</li> <li>Confidence</li> <li>Adaptability</li> <li>Confidence</li> <li>Most people working in primary care already have the necessary skills</li> <li>Enthusiasm</li> <li>Personability</li> <li>Engagement</li> <li>Emotional Intelligence</li> <li>Group management skills</li> <li>Ability to motivate and inspire</li> <li>Time management</li> <li>Communication skills</li> <li>Presentation skills</li> <li>Facilitator training</li> <li>On-going support and accreditation</li> <li>Formal training on consent</li> <li>Consultation skills</li> <li>Communication skills</li> <li>Approachability</li> <li>Formal training</li> <li>Adaptability</li> <li>How to facilitate a session for staff</li> <li>How to access a session for patients</li> <li>IT training</li> <li>Facilitator training</li> <li>Knowledge base of conditions</li> <li>IT skills</li> <li>IT skills</li> <li>Project management</li> <li>Stakeholder engagement training</li> <li>Adaptability</li> <li>Creativity</li> <li>Problem solving</li> <li>Presentation skills</li> <li>Trainer skills</li> <li>Administration</li> </ul>	<ul style="list-style-type: none"> <li>Automation of Administration processes</li> <li>Increasing attendance</li> <li>Recruitment</li> <li>Dealing with Changing Dynamics</li> <li>Face-to-Face vs. virtual</li> <li>Measuring Outcomes</li> <li>Funding</li> <li>Staff Promotion</li> <li>Encouragement of patients to attend</li> <li>Presenting skills</li> </ul>

## Breakdown of codes in relation to a particular question:

DEFINITION	Initial Coding	Grouping	Frequencies	Categorisation	Abstraction
<b>How would you define how you use video group consultations in your practice</b>					
An online group that enables discussion amongst a group of patients with similar health issues' -P14 (GPN)	An online group	Long Term Condition Review	16	<b>Conditions</b>	<b>Code Category</b>
An online group that enables discussion amongst a group of patients with similar health issues' -P14 (GPN)	Enabling discussion	Group Support	8	<b>Long Term Condition Review</b>	Long-Term Condition Review
An online group that enables discussion amongst a group of patients with similar health issues' -P14 (GPN)	A group of patients with similar health issues	Information Providing	3	Diabetes	Lifestyle Medicine
Chronic disease management' - P11 (ACP/ANP)	Chronic disease management	Enabling Discussion	2	Cancer Care	Group Support
Consultation with patient and medical student in remote locations' - P16 (GP)	Consultation with patient and medical student in remote locations	Lifestyle Medicine	4	Disease Management	Health Promotion
Only for diabetes annual review at present - hope to expand when this is fully integrated into our systems' - P10 (ACP/ANP)	Diabetic review	Health Promotion	1		Consultation Style
Diabetes review' - P25 (GP)	Diabetic review	Diabetic Review	4	<b>Lifestyle Medicine</b>	Classification
Long term health clinics' - P26 (ACP/ANP)	Long-term condition review	Online Group	1	Weight Management Groups	
Group support' - P03 (HC)	Group support	Group with similar health issues	1	CBT for Menopause Groups	
Group support and information' - P03 (HC)	Information providing	Consultation with patient and medical student in remote location	1	Post-Natal Care	
Goal-Setting' -P03 (HC)	Goal setting	Goal setting	1	Mental Health	
Support group' - P21 (NC)	Group support	Interactivity	1		
Information providing discussion' - P13 (GP)	Information providing	Questions and Answers	4	<b>Characteristics</b>	
Information providing discussion' - P13 (GP)	Enabling discussion	Fostering patient experts	1	<b>Group Support</b>	
Interactive questions' - P13 (GP)	Interactivity	Cancer Care Review	1	Enabling Discussion	
Information providing' - PP8 (GP)	Information providing	Post-Natal Care Review	1	Interactivity	
Long-term condition review' - P27 (NC)	Long-term condition review	Mental Health	1	Method of connecting	
Information providing' - P34 (GP)	Information providing	Presentation of Different Speakers	1	Experience of sharing	
Experience sharing' - P34 (GP)	Experience of sharing	Coaching	2		
Peer support' - P32 (PM)	Group support	Experience of sharing	1	<b>Health Promotion</b>	
Q&A' - P32 (PM)	Questions and answers	A remote/digital version of what would happen face to face	1	Goal Setting	
Information providing' - P13 (GP)	Information providing	Method of connecting	2	Coaching	
Health promotion' - P13 (GP)	Health promotion	Weight management groups	1	Information Providing	
Information sharing' - P23 (SP)	Information sharing	CBT for menopause groups	1		
Peer support' - P23 (SP)	Group support	Disease Management	2	<b>Consultation Style</b>	
Informative and engaging peer groups' - P20 (AHP)	Information providing			Question and Answers	
Informative and engaging peer groups' - P20 (AHP)	Group support			Fostering patient experts	
Aimed at fostering patient experts' - P20 (AHP)	Fostering patient experts			Presentation of different speakers	
Managing long-term condition' - P20 (AHP)	Long-term condition review				
LTC review, CCR and post natal' - P12 (GPN)	Long-term condition review			<b>Classification</b>	
LTC review, CCR and post natal' - P12 (GPN)	Cancer care review			Online group	
LTC review, CCR and post natal' - P12 (GPN)	Post-natal care review			Remote Consultation (patients and medical students)	
Long term condition management' - P21 (ACP/ANP)	Long-term condition review			Group with similar health issues	
Long term condition management' P22 (ACP/ANP)	Long-term condition review				
Long term condition review and management' - P17 (ACP/ANP)	Long-term condition review				
Long term condition review and management' - P17 (ACP/ANP)	Disease Management				
Long term condition review' - P28 (GP)	Long-term condition review				
Peer support' - P07 (GPN)	Group support				
Answering questions, more time to go through long term conditions' - P07 (GPN)	Questions and answers				
Tackle any anxieties and loneliness' - P32 (PM)	Mental Health				
Different speakers on each month' - P32 (PM)	Presentation of different speakers				
Long term condition management a.g lipids, diet advice' - P08 (GPN)	Long-term condition review				
For long term conditions' - P23 (GP)	Long-term condition review				
Long term conditions' - P32 (PM)	Long-term condition review				
Long term condition support' - P04 (GP)	Long-term condition review				
Empowering coaching group' - P04 (GP)	Coaching				
Lifestyle medicine approach' - P04 (GP)	Lifestyle medicine approach				
Long term condition review' - P33 (GP)	Long-term condition review				
Lifestyle medicine care' - P33 (GP)	Lifestyle medicine care				
Group support for patients' - P05 (GPN)	Group support				
Support and answering questions' - P34 (GP)	Questions and answers				
Review of long term conditions' - P03 (ACP/ANP)	Long-term condition review				
Peer to peer support facilitated by coach and clinician' - P02 (AHP)	Group support				
Peer to peer support facilitated by coach and clinician' - P02 (AHP)	Coaching				
Providing information' - P31 (GP)	Information providing				
Providing information on a dietary approach to diabetes treatment plus support patients if they chose to follow that plan in de-medicating' - P31 (GP)	Diabetic review				

STROBE Statement—Checklist of items that should be included in reports of **cross-sectional studies**

	Item No	Recommendation	Chapter in thesis
Title and abstract	1	(a) Indicate the study’s design with a commonly used term in the title or the abstract	Title and Abstract
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	Abstract
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	Chapter 1; Chapter 2
Objectives	3	State specific objectives, including any prespecified hypotheses	Chapter 2; Chapter 4
Methods			
Study design	4	Present key elements of study design early in the paper	Chapter 4; Chapter 5
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Chapter 5
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	Chapter 5

Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	N/A
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	N/A
Bias	9	Describe any efforts to address potential sources of bias	Chapter 5
Study size	10	Explain how the study size was arrived at	Chapter 5
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	Chapter 5; Chapter 6
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	N/A
		(b) Describe any methods used to examine subgroups and interactions	N/A
		(c) Explain how missing data were addressed	N/A
		(d) If applicable, describe analytical methods taking account of sampling strategy	N/A
		(e) Describe any sensitivity analyses	N/A
<b>Results</b>			
Participants	13*	(a) Report numbers of individuals at each stage of study—e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	N/A

		(b) Give reasons for non-participation at each stage	N/A
		(c) Consider use of a flow diagram	N/A
Descriptive data	14*	(a) Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential confounders	Chapter 6
		(b) Indicate number of participants with missing data for each variable of interest	N/A
Outcome data	15*	Report numbers of outcome events or summary measures	
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95% confidence interval). Make clear which confounders were adjusted for and why they were included	N/A
		(b) Report category boundaries when continuous variables were categorized	N/A
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A
Other analyses	17	Report other analyses done—e.g. analyses of subgroups and interactions, and sensitivity analyses	N/A
<b>Discussion</b>			
Key results	18	Summarise key results with reference to study objectives	Chapter 6
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	Chapter 6



Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	Chapter 6
Generalisability	21	Discuss the generalisability (external validity) of the study results	Chapter 6
<b>Other information</b>			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Funding acknowledgements

\*Give information separately for exposed and unexposed groups.

**Reflexive Journal – Cross-sectional survey**

Reflection	Insights	Action	Research Journey	Thesis
<p>Why was the recruitment of participants so difficult?</p> <p>Why is there such a small sample size?</p>	<p>Due to the impact of the pandemic, general practice teams are stretched and therefore have minimal time to complete survey's etc.</p> <p>It would be useful to find out how many individuals have been trained in video group consultations vs. the survey response rate.</p>	<p>The use of a virtual questionnaire allowed for the recruitment of participants across the country, making it more likely to obtain participants</p>	<p>This is something I have not come across before as my first experience of collecting primary data.</p> <p>It is important to consider the landscape and context when determining the size of a sample. Due to the impact of the pandemic, primary care is facing increased pressures.</p> <p>Having spoken to academics within the field (ML), the difficulties around recruitment are widely expressed surrounding this topic.</p>	<p>Survey Discussion Chapter</p>
<p>Was there a reason why participants disagreed with the consent form?</p>	<p>Was it by accident?</p>	<p>The consent form was embedded into the beginning of the survey</p>	<p>Disagreement with the consent form is something I did not foresee.</p>	<p>Survey Discussion Chapter</p>

Reflection	Insights	Action	Research Journey	Thesis
	<p>General practice staff are too busy with the pandemic to complete survey's</p> <p>Was there something wrong with the consent form?</p>	<p>which clearly outlined what the intention of the survey was, as well as providing details of a participant information sheet.</p> <p>If the participant disagreed with the consent form, they were not able to access the survey questionnaire.</p> <p>MS Forms does not allow monitoring of responses and therefore it cannot distinguish between an individual that has submitted one response or two responses.</p> <p>For the interview recruitment, the consent</p>	<p>Maybe the online nature of the survey made it easier to discard?</p>	

Reflection	Insights	Action	Research Journey	Thesis
		form will have an extra question which states 'are you sure you want to disagree' with the consent form to ensure that participants have not pressed this by accident		
Why use MS Forms, and not another platform?	MS Forms was deemed the most appropriate choice, due to the ease and accessibility of importing this data into excel for analysis.	Another platform – survey monkey – was proposed. However, I felt more comfortable with the functionalities on MS Forms as it was my first time using this software and conducting an online survey. I wanted to ensure I was able to analyse the results in an accessible and easy to use format.	This is my first time obtaining primary data and online survey platforms. MS Forms was easy and accessible, with the ability to import data into excel at a click of button.	Survey Discussion Chapter
Why have I chosen content analysis to analyse the qualitative component of the survey?	Flexible and categories data into themes using a quantitative/qualitative method	Qualitative content analysis  Conceptual analysis	It is recommended that content analysis is an accessible and straightforward approach to	Survey Methodology Chapter

Reflection	Insights	Action	Research Journey	Thesis
	Content analysis is typically used in studies where the aim is to better understand factors such as behaviours, attitudes, values, emotions, and opinions.		<p>data analysis for the novice researcher.</p> <p>I appreciate that this may take some time as it is the first time, I have conducted content analysis. I have ensured there is enough time in the PhD to get to grips with this form of analysis. I have supervisors who are experienced in qualitative data analysis and therefore can be of assistance as I go through this process of data analysis.</p>	
Why were only participants who are using or have previously used video group consultations included in the survey?	The reason why participants were only eligible to complete the survey is if they are using or have previously used video group consultations as due to the predicted small sample size, I did not want to skew the findings to	I ensured there was a differentiation between those who are currently using and those who have previously used.	I was challenged on the eligibility criteria from a practice nurse who stated she hoped the survey would be to get opinions on why people are not using video group consultations and if	Survey Methodology Chapter

Reflection	Insights	Action	Research Journey	Thesis
What about those who do not use video group consultations?	<p>include reasons why people did not use them as this is not the central aim of the research.</p> <p>The aim of the research is to find out the views and experiences of those who are conducting or have conducted video group consultations to gather data surrounding use and uptake of the approach.</p>	One question relates to – if you previously used video group consultations, why did you stop? - which allows me to gain some insights to why video group consultations are not being used whilst maintaining a relatively small sample size.	<p>this is not the case, sadly I will not receive many responses.</p> <p>I reflected on this – should I have included participants that did not use video group consultations?</p> <p>However, I reaffirmed myself with the research aims and objectives ensuring that the methods I had chosen were had 'methodological integrity' and therefore appropriate to answer the research aim.</p>	
<p>Multiple emails from healthcare professionals regarding a participant's eligibility to the study</p> <p>Either</p>	Was the information provided clear enough? Explicitly stated only those who are using or have previously used video group consultations	Informed participants that I am only interested in those participants who have used or have previously used video group consultations.	This is a point to consider when recruiting for interviews to ensure participants correctly understand their eligibility before taking part in the research.	Survey Discussion Chapter

Reflection	Insights	Action	Research Journey	Thesis
<ul style="list-style-type: none"> <li>- Only completing one to one video consultations</li> <li>- Never have used video group consultations</li> </ul> <p>Some participants also emailed to state they have completed half the survey only to realise that they were not eligible when getting to the question – are you currently using or have previously used video group consultations in practice.</p> <p>One participant emailed stating that it was a waste of her time, as they realised halfway through, they were not eligible,</p>	<p>Could they not access the participant information sheet. Invitation letter, recruitment advert which stated the sample population?</p>		<p>Maybe to move the question – are you currently using or have previously used video group consultations in practice – to the top of the survey</p>	

Reflection	Insights	Action	Research Journey	Thesis
despite giving them information about the study prior to participation.				
Why descriptive not inferential statistics?	<p>Descriptive statistics were favoured as they focus on the sample rather than the whole population. They are able to describe a sample population but not make inferences to the entire population.</p> <p>As the use and uptake of video group consultation is so vast, it would be impossible to make inferences or correlations to the entire population based on such a small and non-comparative sample size.</p>	To ensure this is explained clearly due to the aims and objectives of the study. Whilst there may be some correlation between groups, the anonymity of the survey results makes it difficult to make direct inferences between groups.	I am a novice at quantitative research as I have not undertaken this type of research before. The Research Methods in Health module at Keele in January 2022 will help me to gain a greater understanding of quantitative data which will be useful in analysis of the survey data.	Survey Methodology Chapter
Inclusivity of survey (location of practices)	Due to the small response rate from the survey questionnaire, it was decided to make the survey more inclusive by also including	To expand the survey to make it more inclusive of other areas of the UK	To include Wales, Scotland and Northern Ireland was not considered initially, as it was expected that a small response rate would be	



Reflection	Insights	Action	Research Journey	Thesis
	<p>Wales, Scotland, and Northern Ireland to practice location.</p> <p>This was highlighted as a pitfall by a potential participant, who identified that they could not complete the survey as the area they were from was not available on the questionnaire.</p> <p>This inclusion of further locations did not alter the research question or have any impact on the results, but purely extended the survey to make it more inclusive.</p>		<p>obtained in a small geographical location due to feedback from stakeholders etc. However, it came apparent that feedback from potential participants, that the survey needed to be more inclusive. Therefore, it was decided to add further geographical locations.</p>	
GIFS	<p>It was suggested that the use of GIFs may be appropriate when advertising the survey to make it more attractive</p>	<p>To consider the use of GIFs on social media to promote the interview research</p>	<p>This is my first time conducting primary data collection through social media – having advice from those on twitter, on what they find appealing, has great insight for the development of my research</p>	Survey



Keele University FMHS Faculty Research Ethics Committee

[g.p.j.moss@keele.ac.uk](mailto:g.p.j.moss@keele.ac.uk)

26<sup>th</sup> October 2021

Dear Ellie

<b>Project Title:</b>	A survey to evaluate the uptake and use of video group consultations by healthcare professionals in primary care general practice
<b>REC Project Reference:</b>	MH-210196
<b>Type of Application</b>	Main application

Keele University's Faculty of Medicine and Health Sciences Research Ethics Committee (FMHS FREC) reviewed the above project application.

### **Final Opinion**

Thank you for summarising the amendments in a detailed but extremely clear manner. The FMHS FREC can now recommend that this study receives a **Favourable Ethical Opinion**.

### Conditions / recommendations:

There are no **conditions** attached to this application. There are, however, standard reporting requirements to consider, below:

### **Reporting requirements**

The University's standard operating procedures give detailed guidance on reporting requirements for studies with a favourable opinion including:

- Notifying the relevant FREC of substantial amendments to an approved study
- Notifying the relevant FREC of issues which may have an impact upon ethical opinion of the study
- Progress reports, as appropriate
- Notifying the relevant FREC of the end of the study

#### **Documents reviewed**

The documents reviewed were:

<b>Document</b>	<b>Version</b>	<b>Date</b>
All documents submitted with MH-210196 including revisions		


Yours sincerely,

**Dr Gary Moss**


**Chair**

Cross-Sectional Survey:

---



Medical  
Research  
Council



NHS  
Health Research  
Authority

Do I need NHS REC review?

**i** To print your result with title and IRAS Project ID please enter your details below:

Title of your research:

A survey to evaluate the uptake and use of video group consultations by healthcare professionals in primary care general practice

IRAS Project ID (if available): 299031

Your answers to the following questions indicate that **you do not need NHS REC review for sites in England.**

This tool only considers whether NHS REC review is required, it does not consider whether other approvals are needed. You should check what other approvals are required for your research.

You have answered **"YES"** to: Is your study research?

You answered **"NO"** to all of these questions:

**Question Set 1**

- Is your study a clinical trial of an investigational medicinal product?
- Is your study one or more of the following: A non-CE marked medical device, or a device which has been modified or is being used outside of its CE mark intended purpose, and the study is conducted by or with the support of the manufacturer or another commercial company (including university spin-out company) to provide data for CE marking purposes?
- Does your study involve exposure to any ionising radiation?
- Does your study involve the processing of disclosable protected information on the Register of the Human Fertilisation and Embryology Authority by researchers, without consent?

**Question Set 2**

- Will your study involve potential research participants identified in the context of, or in connection with, their past or present use of services (NHS and adult social care), including participants recruited through these services as healthy controls?
- Will your research involve prospective collection of tissue (i.e. any material consisting of or including human cells)

from any past or present users of these services (NHS and adult social care)?

- Will your research involve prospective collection of information from any past or present users of these services (NHS and adult social care)?
- Will your research involve the use of previously collected tissue and/or information from which individual past or present users of these services (NHS and adult social care), are likely to be identified by the researchers either directly from that tissue or information, or from its combination with other tissue or information likely to come into their possession?
- Will your research involve potential research participants identified because of their status as relatives or carers of past or present users of these services (NHS and adult social care)?

#### Question Set 3

- Will your research involve the storage of relevant material from the living or the deceased on premises in England, Wales or Northern Ireland without a storage licence from the Human Tissue Authority (HTA)?
- Will your research involve storage or use of relevant material from the living, collected on or after 1st September 2006, and the research is not within the terms of consent for research from the donors?
- Will your research involve the analysis of human DNA in cellular material (relevant material), collected on or after 1st September 2006, and this analysis is not within the terms of consent for research from the donor? And/or: Will your research involve the analysis of human DNA from materials that do not contain cells (for example: serum or processed bodily fluids such as plasma and semen) and this analysis is not within the terms of consent for research from the donor?

#### Question Set 4


- Will your research involve at any stage procedures (including use of identifiable tissue samples or personal information) involving adults who lack capacity to consent for themselves, including participants retained in study following the loss of capacity?
- Is your research health-related and involving offenders?
- Does your research involve xenotransplantation?
- Is your research a social care project funded by the Department of Health and Social Care (England)?
- Will the research involve processing confidential information of patients or service users outside of the care team without consent? And/ or: Does your research have Section 251 Support or will you be making an application to the Confidentiality Advisory Committee (CAG) for Section 251 Support?

If your research extends beyond **England** find out if you need NHS REC review by selecting the 'OTHER UK COUNTRIES' button below.


**OTHER UK COUNTRIES**

If, after visiting all relevant UK countries, this decision tool suggests that you do not require NHS REC review [follow this link for final](#)

## Semi-Structured Interview study:



Medical  
Research  
Council



Health Research  
Authority

Do I need NHS REC review?

**i** To print your result with title and IRAS Project ID please enter your details below:

Title of your research:  
The implementation and impact of video group consultations by healthcare professionals and patients in primary care general practice: a semi-structured interview study

IRAS Project ID (if available):

Your answers to the following questions indicate that you do not need NHS REC review for sites in England.

This tool only considers whether NHS REC review is required, it does not consider whether other approvals are needed. You should check what other approvals are required for your research.

You have answered 'YES' to: Is your study research?

You answered 'NO' to all of these questions:

**Question Set 1**

- Is your study a clinical trial of an investigational medicinal product?
- Is your study one or more of the following: A non-CE marked medical device, or a device which has been modified or is being used outside of its CE mark intended purpose, and the study is conducted by or with the support of the manufacturer or another commercial company (including university spin-out company) to provide data for CE marking purposes?
- Does your study involve exposure to any ionising radiation?
- Does your study involve the processing of disclosable protected information on the Register of the Human Fertilisation and Embryology Authority by researchers, without consent?

**Question Set 2**

- Will your study involve potential research participants identified in the context of, or in connection with, their past or present use of services (NHS and adult social care), including participants recruited through these services as healthy controls?
- Will your research involve prospective collection of tissue (i.e. any material consisting of or including human cells) from any past or present users of these services (NHS and adult social care)?
- Will your research involve prospective collection of information from any past or present users of these services (NHS and adult social care)?
- Will your research involve the use of previously collected tissue and/or information from which individual past or present users of these services (NHS and adult social care), are likely to be identified by the researchers either directly from that tissue or information, or from its combination with other tissue or information likely to come into their possession?
- Will your research involve potential research participants identified because of their status as relatives or carers of past or present users of these services (NHS and adult social care)?

**Question Set 3**

- Will your research involve the storage of relevant material from the living or the deceased on premises in England, Wales or Northern Ireland without a storage licence from the Human Tissue Authority (HTA)?
- Will your research involve storage or use of relevant material from the living, collected on or after 1st September 2006, and the research is not within the terms of consent for research from the donors?
- Will your research involve the analysis of human DNA in cellular material (relevant material), collected on or after 1st September 2006, and this analysis is not within the terms of consent for research from the donor? And/or: Will your research involve the analysis of human DNA from materials that do not contain cells (for example: serum or processed bodily fluids such as plasma and semen) and this analysis is not within the terms of consent for research from the donor?

**Question Set 4**

- Will your research involve at any stage procedures (including use of identifiable tissue samples or personal information) involving adults who lack capacity to consent for themselves, including participants retained in study following the loss of capacity?
- Is your research health-related and involving offenders?

- Does your research involve xenotransplantation?
- Is your research a social care project funded by the Department of Health and Social Care (England)?
- Will the research involve processing confidential information of patients or service users outside of the care team without consent? And/ or: Does your research have Section 251 Support or will you be making an application to the Confidentiality Advisory Committee (CAG) for Section 251 Support?

If your research extends beyond **England** find out if you need NHS REC review by selecting the 'OTHER UK COUNTRIES' button below.

**OTHER UK COUNTRIES**

If, after visiting all relevant UK countries, this decision tool suggests that you do not require NHS REC review follow this link for final confirmation and further information.

[Print This Page](#)

NOTE: If using Internet Explorer please use browser print function.

[About this tool](#) [Feedback](#) [Contact](#) [Glossary](#) [Algorithm](#) [Accessibility](#)

**The implementation and impact of video group consultations by healthcare professionals and patients in primary care general practice: a semi-structured interview study**

**Individual Interview  
Participation Information Sheet (HCPs)  
(v0.2 28.09.2022)**

**Invitation**

You are being invited to participate in an individual video interview as part of a PhD research project about the implementation and impact of video group consultations in primary care general practice. I understand that video group consultations have been implemented within your practice and you have been involved with the initiation, set-up, implementation, delivery or previous delivery of the approach.

**Before agreeing to take part, it is important for you to understand the purpose of this research, and what it will involve. Please take your time to read this information carefully and discuss with other for any further clarification.**

---

**Purpose of the Interview**

I am interested in your views and experiences of the initiation, set-up, implementation, delivery or previous delivery of video group consultations in your practice.

More specifically, I am keen to understand your views on:

1. The implementation and facilitation of video group consultations
2. The benefits and associated challenges for the practice, healthcare professionals and patients
3. The associated challenges to implementation in primary care general practice
4. The impact of video group consultation on your role in the practice
5. Sustainability of video group consultations as an alternative means of consultation
6. Recommendations for implementation

---

**Why have I been invited?**

You have been invited as your practice has been involved in initiating, setting-up, implementing, delivering or previously delivering video

---



---

group consultations. Your views and experiences will help both researchers and primary care health professionals to gather a more-informed understanding of the implementation and impact of video group consultations and the associated barriers and facilitators to this approach.

Approximately 10 healthcare professionals and 10 patients will be involved in the study, and you will be interviewed individually to explore personal experiences and insights regarding the implementation and impact of video group consultations.

---

### **What will the study mean for me?**

I am inviting you to participate in a video interview using an online platform such as Microsoft Teams, which will last approximately 30 minutes. This interview will focus on your involvement and experiences of video group consultations in your practice and any benefits or issues with the approach. I may ask your questions which arise from the discussion.

All information disclosed will be treated in strict confidentiality. You do not have to answer any questions you don't feel comfortable in doing so.

---

### **What will the results of the study be used for?**

The results of this study will be used as an aspect of a PhD research project, focusing on the impact, delivery and implementation of video group consultations in primary care general practice.

I propose to disseminate results through engagement in presentations and conferences, and through publication. A lay summary of the results will also be distributed via social media and using existing networks to aid dissemination of results and raise awareness of the work.

All identifiable information will not be disclosed, replaced with pseudonyms to ensure complete anonymisation.

The results of the study can be released to you at your request.

---

### **What are the associated benefits (if any) of taking part?**

Whilst the results of this study may not have no direct benefit to you, it may have benefit for the future of primary care general practice in understanding the implementation and impact of video group consultations by individuals using and implementing this approach. It will generate a better understanding of how video group consultation models can contribute to service transformation in primary care.

---

### **What are the associated risks (if any) of taking part?**

---

---

There are no expected risks (in terms of safety or physical harm) involved of participation in an interview. There will be a time commitment of approximately 30 minutes to participate in this research.

If you do not wish to discuss or share particular insights, it is your choice whether to disclose them.

---

### **How will information be used about me?**

All information will be anonymised to ensure confidentiality. You will be given a unique study number so that your personal details remains confidential. The online consent form containing your contact details will be stored in a separate password protected folder on the University's secure drive and will be deleted after the study. All information will subsequently be destroyed according to the guidelines outlined in the Data Protection Act.

The interview will be audio recorded. Everything you say in the interview will be treated with the strictest confidence. The interview recording will be recorded on a dictaphone and then uploaded to the secure university drive, deleted from the portable device and typed out. The paper transcript will not contain any information that could potentially identify you. All audio files and transcripts will be stored securely and separately on the University drive, with strict access limitations, until a minimum of 10 years after the end of the study. Following this, all audio files and transcripts will be destroyed. All handling, processing, storage, achieving and destruction of data is line with the relevant regulatory bodies at Keele University.



Keele University's Research Data Management Policy  
(policy will be sent via email, on request).

If you agree, quotations from the interviews will be used in the study, but no personal identifiable information will be attached. Any references to other individuals will be anonymised, so they are unable to be identified. On this basis, anonymised data may be kept from the interviews to be used in further research studies.

As part of a PhD research project, all data will be governed by Keele University. All information obtained from you will be used in the study and Keele University will act as the data controller for this project. Keele University will keep all identifiable information until completion of the study, after this, it will be destroyed.

You can find out more information with regards to how your information will be used by scanning this QR code  
(policy will be sent via email, on request).



If you wish to withdraw participation, any information provided will be kept. If you withdraw within two weeks of the

---

---

interview, agreement for quotations to be used in the reports of the study can be withdrawn by contacting myself directly.

You will also be able to contact National Health Service Counselling Services, and local voluntary services if you wish to talk about anything shared in the interview (*policy will be sent via email, on request*).



**Your participation in this research will not be disclosed to individuals outside of the research team.**

---

### **Do I have to take part?**

No. Participation is **entirely voluntary**, with your decision to take part or not. An online consent form will be provided if you do decide to take part, and you will be given a copy to keep (if required).

---

### **Withdrawing from the Study**

**You are able to withdraw from the interview without giving any reasons at any time during the interview and within two weeks of the interview, by contacting myself directly.** All audio files and transcripts will be deleted and agreement for quotations to be used in the reports of the study can also be withdrawn by contacting myself directly.

Although, withdrawal of participation two weeks after the interview will not be possible due to the inability to delete transcripts as data analysis will have commenced.

There will be at least seven days between indicating consent and the interview. This will allow you time to read the Participant Information Sheet, ask any questions and give you the opportunity to withdraw from the study.

Withdrawal of consent for this research study, will not affect participation in further studies run by the School of Nursing and Midwifery at Keele University.

---

### **Access to Information**

The electronic audio recording of the interview and transcription will be kept in a separate password protected folder on a secure university drive, which will only be accessed by researchers associated with this study. If you do agree to be interviewed, the information transcribed will be available to other researchers in the future.

---

---

All transcripts are anonymised and will not bear any information which will identify you.

For further information, please see:  
(*policy will be sent via email, on request*)



---

### **What if there is a problem?**

If you have a problem with any aspects of this research project, please don't hesitate to contact Eleanor Scott on [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk) or Dr Andrew Finney on [a.finney@keele.ac.uk](mailto:a.finney@keele.ac.uk) who will be best to address your concerns. Or alternatively please contact the Research Integrity Team on [research.governance@keele.ac.uk](mailto:research.governance@keele.ac.uk) if you do not wish to contact myself directly.

---

### **If I would like to take part, what do I have to do?**

If you are interested in taking part in this research project, please contact myself (Eleanor Scott) directly at [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk).

I will then contact you to arrange a convenient time and date for interview over video-call.

I am interested in gaining your knowledge, experience and insights, so no preparation is needed.

---

### **Contact Details for further information:**

If you have any further questions about this research project, please contact Eleanor Scott on [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk)

---

**I appreciate you taking the time to read this Participant Information Sheet.**

---

## **Email Invitation to Potential Participants (HCPs)**

Dear [xxx],

We are conducting an interview study focusing on the implementation and impact of video group consultations in primary care general practice. This study is important as it aims to provide an evidence-base for the potential use of video group consultations in practice and will inform future practice regarding this approach. As a healthcare professional yourself working in general practice, we would love to gather your experiences and insights of this approach.

To conduct this research, we would like to ask you if you would be willing to take part in one interview lasting approximately 30 minutes (over MS Teams).

**You must have previously been involved, initiated, set-up, implemented, delivered or previously delivered video group consultations and work in general practice to take part in this research.**

Please find a participant information sheet and invitation letter with further information about the study.

If you are willing to be interviewed, I would be grateful if you could contact the researcher directly (Eleanor Scott - [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk)) who can answer any questions and arrange a suitable time for an interview.

An electronic consent form will be shared if you agree to take part.

Best wishes

Eleanor Scott

1<sup>st</sup> August 2022



Dear All,

**Re: The implementation and impact of video group consultations in primary care general practice**

My name is Eleanor Scott and I am a PhD student in the School of Nursing and Midwifery at Keele University. I am contacting you as a healthcare professional who is currently working in general practice and has been involved in initiating, setting-up, implementing, delivering or previously delivering video group consultations in practice. I am keen to understand your views and experiences of the implementation and impact of video group consultations in general practice. I would like to invite you to take part in the study.

The study aims to; i) to gather a greater understanding of the perspectives and lived experiences of healthcare professionals and patients who have been involved, attended, initiated, set-up, implemented, delivered or have previously delivered video group consultations, ii) to clarify definitions of video group consultation and its use in practice, iii) to identify the barriers and enablers to implementation and delivery, and iv) to develop a robust evidence-base for the future use of video group consultations in general practice.

If you are willing to take part in this research, you will be invited to have an interview, via an online platform such as Microsoft Teams. The interview will last approximately 30 minutes.

I have enclosed a participant information sheet which describes the study more closely.

If you would like to take part in the study or have any questions about the research, please contact me directly on the email address below. If you do decide to take part in the study, an online consent form will be sent to you and a convenient time/date will be arranged for the interview.

If I do not hear back from you, we will follow this up with an email and from which no further attempts to contact you will be made.

Please be assured all details will be kept in the strictest confidentiality.

Thank you for reading this letter and for considering being part of this study. I look forward to hearing back for you.

Kind regards

Eleanor Scott  
PhD Student / Adult Nurse  
School of Nursing and Midwifery  
Keele University  
Stoke on Trent  
ST5 5BG  
Email – [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk)

v0.1 01.08.2022  
Invitation Letter – HCPs

**The implementation and impact of video group consultations by  
healthcare professionals and patients in primary care general  
practice: a semi-structured interview study**

**MS Forms: Interview Consent Form (Healthcare Professionals)**

**(v0.2 28.09.2022)**

**Name:** (free-text)

**Gender:** (Male / Female / Non-Binary / Prefer Not to Say)

**Current Role in Practice:** (free-text)

**Duration of Current Role:** (free-text)

**Years Qualified** (if applicable): (free-text)

**Location of Practice:** (North East England / North West England /  
Yorkshire & The Humber / East Midlands / West Midlands / East of  
England / London / South East / South West / Wales / Scotland /  
Northern Ireland)

**Size of Practice:** 0-2,000 / 2,000-5,000 / 5,000-10,000 / 10,000-15,000  
/ 15,000-20,000 / 20,000-25,000 / >25,000

**Are you:** Patient/Healthcare Professional

**Have you either attended, initiated, set-up, implemented, delivered  
or previously delivered a video group consultation in general  
practice:** YES/NO

**Consent:**



- I confirm I have read and understood the Interview Participant Information Sheet version v0.2 dated 28.09.2022.
- I have had the chance to speak to the researcher about the research project and ask any questions.
- I have agreed to take part in the research and I have the right to withdraw or to answer any questions asked without giving a reason\*. \* After two weeks, I will be able to withdraw from the study but would not be able to withdraw the interview data as the researcher is unable to identify individual interviews after this time.
- I understand that the interview will be audio recorded and transcribed and will be stored on the university secured drive in a separate password protected folder. Transcripts will bear no personal identifying information.
- Audio recordings and electronic transcripts will be stored separately and securely for a minimum of 10 years for re-use within the School of Nursing and Midwifery at Keele University or other associated research centres.
- Identifiable information on the returned online consent forms will be stored securely and will be deleted on completion of the study.
- I understand that sentences or phrases gathered in the interview may be used in publications and/or reports in the future. You will not be identified by this data.
- If you have any further concerns or questions about this research project, please contact Eleanor Scott on e.r.scott@keele.ac.uk.
- I agree to take part in the above study.

If you agree, click on the “agree” button below confirming - you have read the participant information sheet provided, you agree to be a part of the research, and you are at least 18 years of age.

If you “disagree”, you will not be able to take part.

AGREE/DISAGREE

**Contact Details** (Email): (free-text)

**Thank you for filling in the consent form and I will be in touch with you shortly to arrange an interview at a convenient time.**

If you have any further enquires or questions regarding this research project, please feel free to contact myself directly by email – [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk)

*Appendix 35: Recruitment advert for semi-structured interview study*

Please contact the researcher (Eleanor Scott) directly to find out more - [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk)

DO YOU DELIVER VIDEO GROUP CONSULTATIONS IN PRIMARY CARE GENERAL PRACTICE...  
...WANT TO GET INVOLVED?

**Keele**  
UNIVERSITY  
Faculty of Medicine and Health Sciences

SOCIAL MEDIA RECRUITMENT ADVERT Y01 01/08/2022

## Social media recruitment advertisement for semi-structured interview study



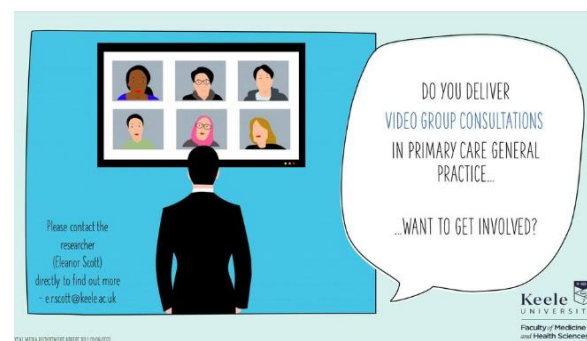
**Ellie Scott**  
January 23, 2023 · 🌐

Are you a healthcare professional in general practice? Do you use or have previously have been involved with VIDEO GROUP CONSULTATIONS in primary care? If so, we would like to hear from you!

Please contact the researcher on [e.r.scott@keele.ac.uk](mailto:e.r.scott@keele.ac.uk) to express your interest.

**#videogroupconsultations #primarycare #generalpractice #research**

Keele University



## **Interview: Topic Guide**

**v0.1 01/08/2022**

### **The implementation and impact of video group consultations by healthcare professionals and patients in primary care general practice: a semi-structured interview study.**

#### **Checklist:**

- Digital Recorder/Microphones/Batteries
- Clock
- Informed Consent

#### **Introduction:**

- Welcome and Introductions
- Before we start, I would like to thank you for your interest and for taking the time to speak to me. As it says in the information sheet, the research study aims to explore your views and experiences of implementing video group consultations within your practice and their associated impact.
- This is an informal discussion, and I would like to repeat that all the information that you provide will be treated in the strictest confidence and used only for the purpose of the research.
- Just to let you know, I will be referring to my questions throughout the interview to make sure we've covered everything. (I have them here in front of me!)
- If we also reach 30 minutes into the interview, I will ask you if you are happy to continue to interview or if you'd like me to conclude it.
- Do you have any questions? Before we proceed, please may I reaffirm consent before beginning the interview?
- Offer opportunity to switch off video.

**\*\*START RECORDING\*\***

## **Topic Guide:**

**For the purpose of the recording, the consent form has now been received and the interview is now being recorded.**

### **So, tell me a bit about your role and where you work?**

*(sex/current role/years working in current role/practice location/size of practice/using or have previously used video group consultations)*

- Do you offer groups to patients in other areas?
- What are the characteristics of your demographic population?

### **Tell me a bit about VGCs in your practice and what your role is?**

*(have you done F2F group consultations before?)*

- Do you do VGCs as part of your role or is this additional?
- What does your working day look like when running a VGC?

### **What were the reasons behind initiating/setting-up/delivering/implementing video group consultations?**

- What were you hoping to achieve when you set up VGCs?
- Do you think it works at PCN/practice level? What are the advantages and disadvantages?
- Who are the decision makers?
- Who are the gatekeepers? Would you have to ask permission to run VGCs?

### **How long have you been delivering video group consultations?**

***And if you have previously delivered VGCs, why did you stop?***

- Is this now or during COVID?
- Was this tech related or that health priorities changed during COVID?

### **Do you think VGCs work and have they been successful?**

- Have you found any similarities or differences between the virtual and face to face approach?
- What are the differences with seeing patients in a group and on a 1:1 basis?
- What metrics have you collected?

### **Have you experienced any challenges, if so, what?**

- Are these challenges the same as F2F GCs? What do patients prefer in F2F GCs?
- What does facilitation involve online?
- What do you need for it 'get easier'? At what point did it get easier for you?
- How have barriers regarding technology been overcome?

**How have you managed patient confidentiality and governance within the groups?**

- Is this different from virtual and F2F?
- How is consent gathered?
- Does the consent process need to be repeated each time?

**How have video group consultations impacted on your current role in practice?**

- In terms of workload, technology, knowledge, skills, time?
- By how much does the workload reduce?
- Does it decrease your workload and increase admin?
- How does your day look when you are running a VGC?
- Are you still able to have your lunch break and go home on time?
- What are the incentives for HCPs to run VGCs?

**Have video group consultations impacted your practice in any other ways? Has this had impact on the practice itself?**

*(cost?, process measures?, time of consultation? back-log?, clinical outcomes? Whose evaluating them? What metrics have you collected Etc.?)*

- Has it helped to address any concerns regarding backlog?
- Have you seen a difference in clinical outcomes?
- Time commitments?
- What do the rest of the practice think about VGCs?
- Do you need additional members of the team to run VGCs?
- What if patients don't turn up? How are these followed up? In what time slot?

**What are the logistics surrounding the set-up and running of video group consultations? *(booking slots, coding, funding etc)***

- What happens when the money runs out? How are they funded? Is there a QOF incentive?
- What does the tech involve?
- What platforms have you used?
- How does the chat function work? What is it used for?
- How are patient's clinical results collected? Who collects them? How long does it take? Do you share this on screen or in the chat?
- What additional resources are necessary?

**Have you felt there is benefits to patients using this approach?**

- What patient outcomes have you collected to demonstrate the benefits?

- Have you asked patients whether they have a better understanding of their condition?
- Do patients want interaction?
- Can each patient hear each other's consultation like in a F2F GC?
- Why do patients want to come back to F2F?
- Why do patients not turn up?
- Do patients show themselves on camera?
- Is there a difference between the patient and clinician dynamic in a group setting? Is this different F2F and online?

**How do you manage the group dynamics of the video group consultations?**

*(Do you set ground rules?, how do you deal with dominant personalities etc?)*

- How does the peer support element of a group consultation happen virtually?
- Do patients appear distracted on screen? Was this the case F2F?
- Do patients chat amongst themselves whilst other consultations are taking place? How is this transferrable to VGCs?
- How much time do patients get to speak during a VGC? Is that different to face-to-face?
- What happens to patients not offered a VGC?

**Do you think practices should be trained in how to conduct a video group consultation?**

- Do you train people?
- Have you been on formal training yourself?

**How do you structure your video group consultation? Is this based on a previously established consultation model?**

- Is there any standardisation in consultation?
- Do you think that there is a format that could be replicated?
- How does the result board look online and F2F?

**Have you considered the hybrid group consultation model? What does this look like?**

- Who monitors the chat?
- Is there two results boards?
- Do they all have the same consent?
- How do you facilitate this?



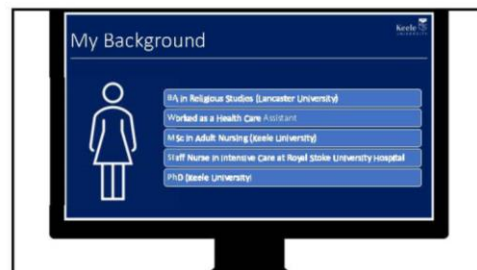
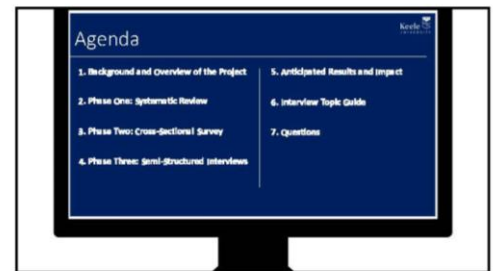
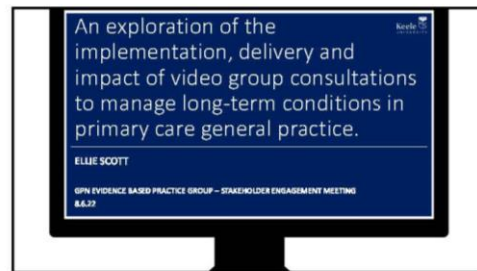
**Clinical outcomes vs. patient benefit – how is this measured or valued?**

- What does this mean for the practice?
  - What does this mean for the patients?
  - What does this mean for HCPs?
- 
- **Do you have anything to add? Would you do anything differently if video group consultations were implemented now? Any top tips? Have there been any unexpected challenges and/or benefits in utilising the approach?**

**Closing Statement:**

- Thank you so much for participating in this study and for taking the time to share your views and experiences with me today. Do you have any further questions? I would be happy to share the results of the study with you if you are interested. I am due to complete my PhD in November 2024. You can keep in contact with me via my email.

*Appendix 37: SAG Meeting for interviews (GPN evidence-Based Practice Group) (presentation)*



An exploration of the implementation, delivery and impact of video group consultations to manage long-term conditions in primary care general practice

**PHASE ONE: SYSTEMATIC REVIEW**

Factors affecting uptake and delivery of video group consultations for the management of long-term conditions in primary care general practice

**STAKEHOLDER ENGAGEMENT**

Phases two and three will include a stakeholder engagement meeting to inform survey questionnaire and interview topic guide

**PHASE TWO: SURVEY QUESTIONNAIRE**

The uptake and use of video group consultations by healthcare professionals in primary care general practice

**PATIENT AND PUBLIC ENGAGEMENT**


To inform the interview topic guide, consent forms, participant information, recruitment and the role of PPI in the study

**PHASE THREE: INTERVIEWS**

The implementation and impact of video group consultations by healthcare professionals in primary care general practice


### Phase One: Systematic Review

- Factors affecting uptake and delivery of video group consultations to manage long-term conditions in general practice
- Seven databases (MEDLINE, CINAHL, EMBASE, EMCARE, JBI, PUBMED, COCHRANE)
- Searches from November 2020 – August 2021
- Screening
- Quality Appraisal
- Narrative Synthesis (Popay et al., 2006)




### Phase Two: Cross-Sectional Survey

- Healthcare professionals in general practice who are using, or have previously used video group consultations (around 10 responses)
- Online survey
- Microsoft Forms
- Purposive, random and snowball sampling
- Both open and closed-ended questions to produce quantitative and qualitative data
- Descriptive Statistics (SPSS) appropriate analysis of open-ended responses
- Content Analysis (Crabtree & Knight, 2006)
- Findings will be mapped to Normalisation Process Theory (May et al., 2006) to aid interpretation



### Phase Three: Semi-Structured Interviews

- Healthcare professionals and patients in general practice who are using, or have previously used, video group consultations (around 20 participants)
- Interview schedule and format
- Purposive, random and snowball sampling
- Interview support notes
- Thematic Analysis (Crabtree & Knight, 2006)
- Participant information, data coding, generating initial themes, developing and refining themes, refining and defining themes, writing the report
- Findings will be mapped to Normalisation Process Theory to aid interpretation (May et al., 2006)



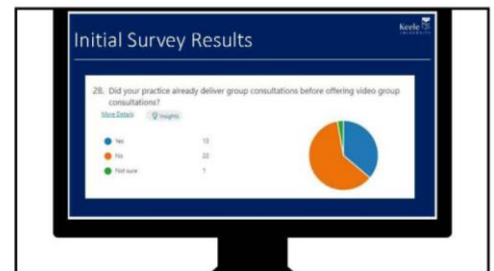
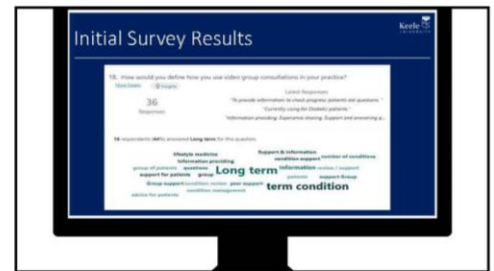
So, what have I found so far?

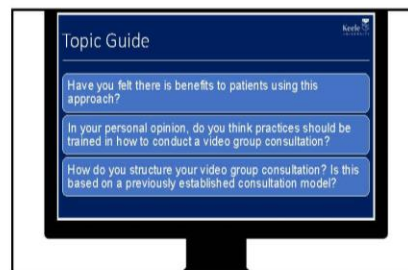
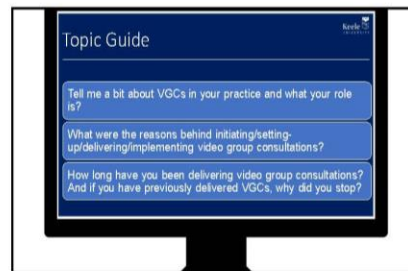
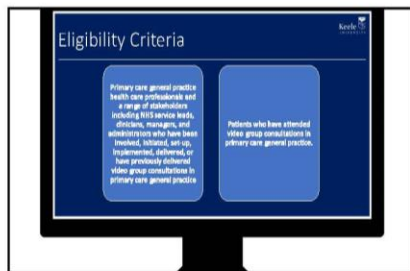
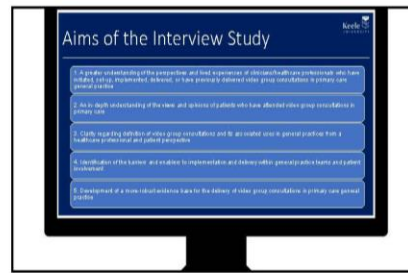
### Initial Survey Results

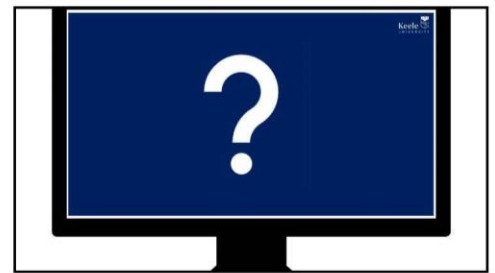
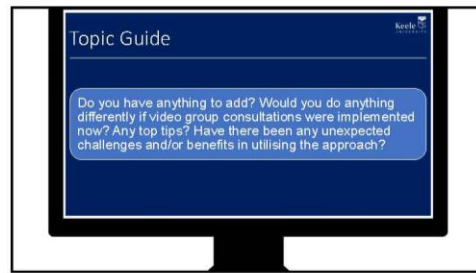
1.2: Where is your practice located in the UK?



Region	Count
1. North East England	1
2. North West England	2
3. Yorkshire & The Humber	2
4. East of England	2
5. London	2
6. South East	2
7. South West	2
8. Wales	2
9. Scotland	2
10. Northern Ireland	2







Like the cross-sectional survey SAG, this involvement was structured using the key stages provided by Lawrence et al. (2000). A SAG was conducted to understand the issue to be resolved. This led to the identification of stakeholders, relevant to the implementation and impact of VGCs in primary care general practice.

A previously established GPN evidence-based practice group was used to identify stakeholders. The GPN evidence-based practice group (Keele University, 2024a) aims to find the best evidence to underpin primary care general practice, highlighting the gaps in evidence, provide the best evidence which could be implemented in practice and sharing the knowledge and expertise amongst clinical and academic colleagues (Keele University, 2024a). CATs are raised from real-world clinical problems or concerns, in which a clear answer is not evident. The group aims to answer CAT questions by completing a literature search, appraising the evidence and seeking input from researchers in order to generate new primary care evidence (Keele University, 2024a). This group helped to develop the topic guide a previous interview study focusing on the experiences of implementing and delivering group consultations in UK general practice (Swaithes et al., 2021).

An email, online link and agenda was sent out prior to the meeting by the Lead Supervisor who leads the GPN evidence-based practice group. Members were encouraged to express attendance, either face-to-face or virtually. Ethical approval was not required due to the nature of the stakeholder meeting as an advisory group rather as a means of research.

The convening of the group to inform the interview topic guide was conducted face-to-face and streamed virtually on 8<sup>th</sup> June 2022, as a component of the GPN evidence-based practice quarterly meeting (Appendix 37). Five GPNs attended the stakeholder advisory meeting, and included additional roles in CCGs, GPN Training and pre-registration nursing lecturers. One of the candidate's supervisory team also attended to help to facilitate and guide discussion.

The SAG meeting for the semi-structured interview study was informed by discussion raised from the cross-sectional survey and previous existing literature. An overview of the PhD project and results found so far were presented to provide a background to the topic guide. A PowerPoint presentation was utilised to demonstrate this (Appendix 37). The topic guide was displayed on the presentation, as well as providing printed handouts to participants to ensure clear visualisation of the topic guide. The meeting was not recorded, but short notes were taken from the discussion held. This allowed for modification of the topic guide as recommended by the GPN evidence-based practice group.

As the SAG meeting for the interview study was not recorded, the candidate was not able to re-familiarise themselves with the meeting, but notes made on the topic guide handouts by participants enabled clarification of discussion and direct written modification of the topic guide. As the topic guide was presented to the participants during the meeting, initial notes were made during this time. Modifications were discussed with the supervisory team after the meeting. Broad themes were identified through the principles of thematic analysis (Braun & Clarke, 2006).



### Verbatim Transcript

I: OK, just for the purpose of the recording, the consent form has now been received and the interview is now being recorded. So [xxx], will you tell me a little bit about your role and where you work?

IV: So I am, I'm a practice nurse and I'm also a diabetes nurse specialist for the trust. So this role as group consultations is in my practice nurse role where I do sessional work for [xxx] and our, my role is, along with a GP to, erm, try and implement group consultations at diagnosis of type 2 diabetes and run an educational programme alongside the group consultation part.



Ellie Scott

Practice nurse role

@mention or reply

Ellie Scott

Additional HCP role

@mention or reply

Ellie Scott

Wider network

@mention or reply

Ellie Scott

Organisational priority to implement GC

@mention or reply

## Appendix 40: Example of Reflexive Thematic Analysis coding spreadsheet

Initial Central Organizing Concept	Description	Fourth Order Codes	Third Order Codes	Second Order Codes (Clustered by meaning)	Second Order Codes (Colour Coded by Participant)	First Order Codes
<b>1. CONTEXT ENFORCED CHANGE</b>	<i>Context enforced change, due to the impact of the pandemic most general practices had to make use of a virtual consultation model. This became a way practices could maintain connection with patients when there were COVID restrictions in place.</i>	Impact of the pandemic on general practice, including change enforced by context, backlog of LTC reviews, Media depictions of general practice	Impact of the pandemic/ context enforced change - backlog of LTC reviews - Media of GP	Impact of the pandemic	Impact of the pandemic	Impact of the pandemic
		Pandemic Consultation model, including alternative ways to see patients, maintaining contact, solution to care, support group, alternative service provision, VGCs prior to the pandemic, impact on patients	Covid restrictions - Inability to see patients/reduced F2F - restriction - essential need - isolation - neglect	Inability to see patients	Inability to see patients	Impact of the pandemic
		Pandemic restrictions, including essential need, isolation, neglect, inability to see patients, reduced F2F, no choice, shielding of nurses	Virtual shift	Connecting with patients	Connecting with patients	Inability to see patients
		Restructuring of healthcare, including virtual shift	Impact on patients	Maintaining relationships with patients	Maintaining relationships with patients	Connecting with patients
			VGCs prior to the pandemic	Distanced consultations	Distanced consultations	Maintaining relationships with patients
			Pandemic consultation model - alternative way to see patients - maintaining contact	Re-connectedness	Re-connectedness	Impact of the pandemic
				Natural progression	Natural progression	Distanced consultations
				Essential need	Essential need	Re-connectedness
				Plan for VGCs prior to the pandemic	Plan for VGCs prior to the pandemic	Impact of the pandemic
				Isolation for patients	Isolation for patients	Impact of the pandemic
				Virtual approach was forced	Virtual approach was forced	Impact of the pandemic
				Media and COVID	Media and COVID	Impact of the pandemic
				Context of general practice	Context of general practice	Natural progression
				Neglect of long-term condition reviews	Neglect of long-term condition reviews	Impact of the pandemic
				Not a balanced approach	Not a balanced approach	Essential need
				Covid restrictions	Covid restrictions	Impact of the pandemic
				Current practice on the back foot	Current practice on the back foot	Plan for VGCs prior to the pandemic
				Covid driver	Covid driver	Impact of the pandemic
				Context enforced change	Context enforced change	Isolation for patients
				Maintaining contact	Maintaining contact	Impact of the pandemic
				Pandemic consultation model	Pandemic consultation model	Virtual approach was forced
				VGCs prior to the pandemic	VGCs prior to the pandemic	Media and COVID
				Changes to COVID rules	Changes to COVID rules	Context of general practice
				Restriction	Restriction	Impact of the pandemic
				No choice	No choice	Impact of the pandemic
				Little impact of the pandemic	Little impact of the pandemic	Neglect of long-term condition reviews
				Virtual shift	Virtual shift	Not a balanced approach
				Move to online forms of consultation	Move to online forms of consultation	Impact of the pandemic
				Isolation due to COVID	Isolation due to COVID	Covid restrictions
				Seeing patients in their own homes	Seeing patients in their own homes	Impact of the pandemic
				Reducing isolation	Reducing isolation	Current practice on the back foot
				Lifeline for certain populations	Lifeline for certain populations	Impact of the pandemic
				Support for patient groups during the pandemic	Support for patient groups during the pandemic	Impact of the pandemic
				Services halted	Services halted	Covid driver
				COVID was stressful for patients	COVID was stressful for patients	Context enforced change
				Impact of social distancing measures	Impact of social distancing measures	Covid driver
				Rapid restructuring of healthcare	Rapid restructuring of healthcare	Maintaining contact
				Reduced face-to-face interaction	Reduced face-to-face interaction	Pandemic consultation model

2. DEMOGRAPHIC BACKGROUNDS	<i>Demographic backgrounds of the practice and patient population. This theme refers to the populations involved with VGCs. It is evident that VGCs are dependent on patient need.</i>	Practice demographics, including PCN vs. practice, no geographical constraints	Practice demographics - PCN vs. practice - no geographical constraints	Practice demographic	Practice demographic	Practice demographic
		Patient demographics, including, deprivation vs. affluence, mixed ethnicities, generational divide, working population, patients ability	Patient demographics - affluence - deprivation - mixed ethnicity/language; generational divide - working population	Demographic divide	Demographic divide	Demographic divide
		Having the 'correct' patient population, including 'working with the willing', cherry picked patients, suitability, success, purposive selection, familiarity	Having the 'correct' patient demographics for VGCs - working with the willing - cherry picked patients	Wider practice network in PCN	Wider practice network in PCN	Wider practice network in PCN
		No specific patient population, including those with an interest in VGCs, anyone and everyone, bums on seats	No specific patient demographics - anyone and everyone	Practices individually running VGCs	Practices individually running VGCs	Practices individually running VGCs
		Access, including widening access, convenience for patients, accessible populations, lack of private space	Access - to tech, services, healthcare	More staff involved	More staff involved	More staff involved
		Workforce, including greater number of staff involved, wider clinician workforce available	Workforce - wider clinician workforce available - presence	Demographics of patients	Demographics of patients	Demographics of patients
				All demographic characteristics	All demographic characteristics	All demographic characteristics
				No geographical constraints	No geographical constraints	No geographical constraints
				Patient demographics	Patient demographics	Patient demographics
				Appeals to older patients	Appeals to older patients	Appeals to older patients
				Patient inequalities	Patient inequalities	Patient inequalities
				Appropriateness	Appropriateness	Appropriateness
				Particular patient demographics	Particular patient demographics	Particular patient demographics
				Widening access	Widening access	Widening access
				Geographical flexibility	Geographical flexibility	Geographical flexibility
				Patient ability	Patient ability	Patient ability
				Suitability for particular patient populations	Suitability for particular patient populations	Suitability for particular patient populations
				Encouragement	Encouragement	Encouragement
				Targeting affluent areas	Targeting affluent areas	Targeting affluent areas
				Mixed population	Mixed population	Mixed population
				Flexibility with job roles	Flexibility with job roles	Flexibility with job roles
				People with better jobs can access online	People with better jobs can access online	People with better jobs can access online
				PCN level	PCN level	PCN level
				Preference for practice level VGCs	Preference for practice level VGCs	Preference for practice level VGCs
				Successful for the right demographic	Successful for the right demographic	Successful for the right demographic
				Practices as organisations	Practices as organisations	Practices as organisations
				Practice vs. PCN	Practice vs. PCN	Practice vs. PCN
				Ran at practice and PCN level	Ran at practice and PCN level	Ran at practice and PCN level
				Deprived demographic area	Deprived demographic area	Deprived demographic area
				Mixed ethnicity of patients	Mixed ethnicity of patients	Mixed ethnicity of patients
				Access	Access	Access
				Deprived demographic	Deprived demographic	Deprived demographic
				Patients convenience	Patients convenience	Patients convenience
				Perceptions of patient factors	Perceptions of patient factors	Perceptions of patient factors
				Familiarity with patients	Familiarity with patients	Familiarity with patients
				Recognising patient suitability	Recognising patient suitability	Recognising patient suitability
				Large PCN network	Large PCN network	Large PCN network
				Generational divide	Generational divide	Generational divide
				Right demographic of patients	Right demographic of patients	Right demographic of patients

## **DEVELOPMENT OF CODES TO THEMES**

### **Reasons for 1<sup>st</sup> categorisation (initial cluster categorisation - fourth order codes):**

**1. Context enforced change:** Codes related to the impact of the pandemic, including the impact of the pandemic on general practice, pandemic consultation model, pandemic restrictions and restructuring of healthcare.

*These codes were combined as a COC as contextually these factors have been seen to be a barrier or facilitator to the implementation of VGCs. Consideration of the context of the pandemic to which VGCs were implemented is an important finding to highlight.*

**2. Demographic Backgrounds:** Codes related to practice demographics, patient demographics, having the 'correct' patient population, no specific patient population, access and workforce.

*These codes were combined as a COC as the demographic background of both the practice and patient is an important consideration for the conditions of implementation of VGCs into a general practice context. Access was grouped in this COC due to widening accessible populations, and convenience for different demographic populations. Workforce was also categorised within this concept, as VGCs provide the opportunity to widen the demographics of the workforce and doesn't not entail just one practice.*

**3. Professional Background:** Codes related to the professional background of the clinician, interest in VGCs and roles involved in VGCs.

*These codes were combined as a COC as the professional background of the clinician influences the use and uptake of VGCs dependent on personal and professional interests. Interest in VGCs was central the professional background of clinician and is a major factor for buy-in. Roles involved with VGCs were categorised in this concept due to the influence of ARRS roles and the nurse as an implementer. This is important to understand the roles which are likely to deliver and implement VGCs in general practice.*

**4. Roles in a VGC:** Codes related to the facilitator role, clinical role, coordinator role, ARRS roles, implementation of VGCs as a role and coherence vs. dissonance with role.

*These codes were combined as a COC due to the logistical roles involved in delivering a VGC. Consideration of whether VGCs sat coherently within a role or were distinct is a pivotal aspect of this category. Implementation of VGCs as a distinct role has a connection to barriers to sustainability. These codes were grouped together due to the practicalities involved with VGCs when considering roles.*

**5. Organisational Investment:** Codes related to organisational buy-in, funding launchpad, funding as imperative, and having an added benefit.

*These codes were combined as a COC as initially organisational investment was primarily discussed in relation to funding payments. However, as more interviews were completed the importance of organisational buy-in and an organisational conceptualisation of the model was more apparent. Having an added benefit is central to organisational investment, as organisations are less likely to support an intervention if it does not have an added benefit.*

**6. Model of Care:** Codes related to the conceptualisation of VGCs, variation in delivery, understanding the model and variation in use.

*These codes were combined as a COC as these commonalities related to how VGCs are conceptualised, defined, delivered, used and understood. This forms a basis of how they are implemented in primary care, based on conceptualisation alone.*

**7. HCP Buy-in:** Codes related to understanding the model, advocates, lack of breathing space, need for change and blockers.

*These codes were combined as a COC as understanding of the model has a direct impact whether HCPs buy-in to the idea of VGCs. Having the breathing space to actually implement VGCs was identified as a challenge. The need for advocates to implement this approach is central to the buy-in of VGCs, and many of the HCPs I interviewed did consider themselves to be advocates in VGCs. The need for change for HCPs is a motivating factor to buy-in to the approach. Not all HCPs want buy-in of the approach and therefore consider to be a blocker to implementation of VGCs.*

**8. Time and Workload:** Codes related to time involved with VGCs, workload, VGCs in relation to the professional role, aim of VGCs, lack of evidence in reduction of time and workload and lack of breathing space.

*These codes were combined as a COC as they all related to the time and workload employed to implement VGCs. Lack of evidence in reduction of time and workload was placed in this category as it is referring to time and workload specifically despite evidence base. Lack of breathing space was included as often HCPs experienced a lack of breathing space and therefore the time and workload were too much to implement VGCs.*

**9. Incentives for HCPs:** Codes related to enhancement of knowledge, increased job satisfaction, need for alternative ways of working, a way to keep HCPs in work during the pandemic, and pay incentive.

*These codes were combined as a COC as each code is considered to be a motivating factor for the implementation of VGCs into practice. This is at a practical and conceptual level.*

**10. Training:** Codes related to the need for training, formal vs. Informal training, practicalities of training and training on particular VGC roles.

*These codes were combined as a COC as each code related to training, and resource of training in general practice. This is seen to be a facilitator for the implementation of VGCs. Training is also something that was considered to be a logistics of VGCs in the cross-sectional work.*

**11. F2F vs. Virtual:** Codes related to F2F vs. virtual approach, control of F2F vs. virtual, logistics of F2F GCs, successes with F2F GCs and a lack of evaluation of F2F GCs.

*These codes were combined as a COC as a pragmatic way to organise this data set. This is not something to be viewed as a COC in and of itself, but at this stage of the analysis, categorisation of meaning based on the distinction between the F2F and virtual approach. This is something that has been recognised early in the analysis.*

**12. Technology:** Codes related to digital exclusion, technological capabilities, technological support, reactive response and digital security.

*These codes were combined as a COC as they relate to the use of technology for the ability for VGCs to be implemented. Digital exclusion and technological capabilities were categorised here due to issues with patient having the necessary knowledge and skills to be able to participate in a VGCs. This is something to consider in future research around patients and VGCs. Technological support is viewed as a logistical necessity in relation to VGCs due to the reactive response of general practice due to the national context of the pandemic. Digital security is also a key consideration in relation to technology.*

**13. Logistics:** Codes related to timings, practicalities, attendance, registration, recruitment, capacity, QOF points and resources.

*These codes were combined as a COC as pragmatically they are considered to be the logistics behind the implementation of VGCs. The workload involved in administration, recruitment and resources is a central aspect. Timings of VGCs are associated with both HCP and patient buy-in. Capacity is considered to be a resource of general practice, i.e. having the capacity to practically deliver VGCs.*

**14. Implementation:** Codes related to implementation as trial and error, lack of normalisation, culture change/resistance, lack of headspace, belief or lack of belief in the model, lack of implementation, implementation dependent on benefits, mandatory vs. optional, need to plan for VGCs and the need for implementation support.

*These codes were combined as a COC as each described barriers or facilitators to implementation. Key codes relating to implementation as ad hoc have significant meaning for the implementation and impact of VGCs. The importance of support and planning is also imperative. Participants spoke about needing VGCs to be mandatory rather than optional to be implemented which is an important consideration to take further. Ideas surrounding capacity and lack of headspace have direct influence within this category.*

**15. Evaluation and Outcomes:** Codes related to unable to establish clinical benefit, need for evidence, lack of formal evaluation, need for perseverance, VGCs cannot be measured in numbers but the smiles on patients faces, measurement of biometrics, perceived cost benefit and no evidence to demonstrate time saved or reduction in workload.

*These codes were combined as a COC as they relate to associated impact of VGCs. This is in an evaluation sense or a clinical indicator sense. This is of important consideration for the sustainability of the approach.*

**16. Sustainability:** Codes related to the lack of sustainability, need for perseverance, responding to patient need, support mechanisms disappeared, lack of initial benefits, clinician belief, and fed up with the virtual approach.

*These codes were combined as a COC as due to issues with sustainability. Codes provide reasons to why VGCs were not sustained and related to a conceptual, practical and individual level.*

**17. Patient benefits:** Codes related to peer support, peer learning, therapeutic aspect and ownership of health.

*These codes were combined as a COC as they are reported as perceived patient benefits of being involved with VGCs. These codes need further research to explore patients experiences of VGCs.*

**18. Patient buy-in:** Codes related to patient engagement, reluctance, patient benefits and suitability of patients.

*These codes were combined as a COC as centred around reasons for why patients may engage or not engage with VGCs.*

**19. Team buy-in:** Codes related to whole team effort rather than a motivated individual, understanding the model, practice and patient demand and resistance.

*These codes were combined as a COC as they referred to the team as a whole. Implementation is dependent on a team effort, which requires an understanding of the model. Practice and patient demand is a factor to which team buy-in is achieved. Resistance of the team causes VGCs not to be effectively implemented despite having an advocate.*

**20. Facilitation:** Codes related to lack of control, managing patient dynamics, facilitator role, informal/formal consultation style and clinician/patient dynamic.

*These codes were combined as a COC as due to a common idea of facilitation and the style of consultation. Codes surrounding control were also included due to participants feelings around a lack of control regarding facilitation with a virtual setting and a change in clinician/patient dynamic. Codes specific to a facilitator role are categorised here.*

**21. Confidentiality and Control of information:** Codes related to information governance, control, security of space, digital security and confidentiality.

*These codes were combined as a COC as related to the space, control and information governance. Codes related to the lack of control of the clinician in a virtual space is an important aspect which needs further consideration.*

**22. Context of General Practice:** Codes related to the impact of the pandemic, lack of capacity, transactional care and funding.

*These codes were combined as a COC, which was identified later in the interviews, but relates to the context to which VGCs are implemented. The pandemic and lack of capacity directly impact the ways in which VGCs are implemented, causing transactional care. Funding in the context of general practice has a direct impact on how the approach is implemented.*

**23. Group Dynamic:** Codes related to condition validation, virtual space vs. physical presence, lacking group support, anonymity, patient/clinician dynamic, group dynamic is maintained in a VGC, maintaining group dynamic virtually and buy-in from patients.

*These codes were combined as a COC as facilitation seemed to be a lot broader than just how VGCs are facilitated, but more so about the group dynamic itself. The idea of the difference between F2F and virtual is something to be considered and issues surrounding anonymity. Patient benefits such as maintaining the group dynamic and condition validation are also central.*

**24. Use of Care:** Codes related to ownership of health, convenience, and added benefit to VGCs.

*These codes were combined as a COC as interviewees described a change in the use of care using the VGC model, in which there is a greater ownership of health in a group and VGCs offer something other forms of consultation cannot. Convenience is something to consider for patient buy-in.*

**25. Capacity:** Codes related to lack of capacity, need for added benefit and funding increases capacity.

*These codes were combined as a COC as they are associated with reasons why VGCs are or are not implemented. The practicalities of lack of capacity are evident and the need for an added benefit helps to increase capacity. Additional funding for VGCs also increases capacity.*



## **Reasons for 2<sup>nd</sup> categorisation:**

**CONTEXT:** Structured into three levels: national, practice and patient.

Nationally, the impact of the pandemic, pandemic consultation model, restrictions. This caused a change in context due to a restructuring of healthcare, a reactive response and ultimately transactional care.

At a practice level, contextually, VGCs were viewed as a way to keep HCPs in work, there was a need for an alternative way of working due to backlog of patients and inability to see patients using traditional methods, the need for change, and practice demographics.

With regards to patients, the context of patient demographics, having the 'correct' patient demographic and no specific patient population.

These were placed under the theme of context, and they contextually provide an overview of what was happening at a national, practice and patient level, which ultimately impacts how VGCs are implemented.

*(including context enforced change, demographic background, context of general practice)*

**CONCEPTUALISATION:** Conceptualisation is viewed as an overarching term to describe data regarding the definition, understanding and use of VGCs.

Conceptualisation in terms of definition refers to how VGCs are defined, understanding of the model and aims of VGCs.

Conceptualisation at a pragmatic level refers to variation in use, variation in delivery, F2F vs. virtual approach, and informal/formal consultation styles.

These codes are categorised under this COC due to the variation of conceptualisations of the approach. Conceptualisation has a strong tie to buy-in.

*(including model of care)*

**BUY-IN:** Buy-in is viewed as multi-factorial. Codes were structured at a national, practice, HCP and patient level.

Buy-in is viewed as an overarching concept nationally. The need for support mechanisms, such as funding is viewed as imperative for buy-in. A greater understanding of the model, in terms of conceptualisation aids its understanding of use and delivery in practice.

At a team level, organisational buy-in and priorities are central. It is viewed as a whole team effort rather than a motivated individual, although, teams face increasing resistance to the approach.

*For HCPs, an advocate must be identified who has an interest in VGCs. This may be someone who has a professional background or role in this area. However, at an HCP level, buy-in is dependent on belief in the model, with many becoming blockers and expressing reluctance to engage. HCPs also express the benefits of VGCs which aid buy-in, including, increasing job satisfaction and enhancement of knowledge.*

*Professional background was removed from the COC as it was used to gather some data around the background of the participants rather than addressing the research question itself.*

*Perceived beliefs of patients regarding buy-in are associated with patient benefits, convenience and patient engagement. However, despite the perceived patient benefits, attendance was reported by HCPs to be low by patients. Many patients express reluctance to engage with the approach.*

*These codes are categorised under this COC as they describe the influences at a national, practice, HCP and patient level which hinder or promote buy-in of VGCs. Many codes overlap with context and patient benefits.*

*(including HCP buy-in, organisational investment, professional background, incentives for HCPs, patient buy-in, patient benefits, team buy-in, use of care)*

**ADDED BENEFIT:** *Added benefit was created using a common thread in the data. The need to provide an added benefit for commissioners, buy-in and sustainability is apparent.*

*On a wider scale, added benefit refers to offering something different and recognition of need.*

*The need to provide an added benefits aids commissioning, and the need to evidence a cost benefit by achieving QOF points is described.*

*Patient and practice demand determines this added benefit.*

*Added benefit is constructed based on the need to evidence an extra to otherwise usual routine consultations. This aids implementation with funders, the practice and individual HCPs.*

*(including organisational investment, capacity, use of care)*

**RESOURCES:** *Resources relate to the additional staff and supplies needed to implement VGCs.*

*Roles surrounding VGCs are viewed as central with participants describing additional roles needed, coherence vs. dissonance with role, facilitator roles, clinical roles, and ARRS roles. The need for*

*implementation of VGCs as a distinct role was highlighted, as well as increased workforce due to expansion of staff.*

*Technology is a key resource for implementation, including technology support and having an IT role.*

*The need for training is ad hoc with competing interests regarding the need for informal or formal training, the need for training on particular roles and the practicalities of training,*

*Implementation of resources, with the need to plan for VGCs and have implementation is necessary.*

*This viewed initially to be synonymous with capacity, yet it was decided to be a theme in and of itself, due to the distinction between capacity having a greater bearing on context and resources having an association with logistics. Therefore, these COC were split to account for this variation.*

*(including roles in a VGC, technology, training, implementation)*

**CAPACITY:** *Codes related to the capacity of context, capacity in the practice and individual capacity were grouped under this COC.*

*Participants often referred to the context of practice, relating this to a lack of capacity to demonstrate newer ways of working. Participants used terms such as a 'lack of headspace'. Capacity here can be viewed at an abstract level.*

*Within practice, capacity is perceived as limited, with no time to do VGCs due not being able to free-up staff and reduce backlog. Although, funding aids some areas of capacity.*

*Individually, participants experienced 'a lack of breathing space', due to the time employed with the approach.*

*These codes were categorised under 'Capacity' as they are brought together by the notion that the contextual factors surrounding VGCs are dependent on capacity and can be different at a practice and individual level. Whilst this was not a question that was asked directly too participants, many responses alluded to these responses.*

*(including context of general practice, capacity)*

**LOGISTICS:** *Logistics associated with the implementation of VGCs were grouped under this COC.*

*Administration, including recruitment, organisation and space are practicalities surrounding the approach.*

*Time and workload relate to access, timings of consultations and resources.*

*Information governance and confidentiality are viewed as a logistical challenge, according to participants.*

*Technology relates to digital exclusion and technological capabilities of patients and HCPs.*

*These codes have been grouped under this COC due to the practicalities associated with VGCs. Codes are viewed synonymously with resources.*

*(including time and workload, technology, logistics, confidentiality and control)*

**DYNAMICS:** *Dynamics of a group consultation were dependent on several factors identified in the data.*

*Control of the consultation, anonymity and an altered clinician/patient dynamic relate to a significant thread across the dataset.*

*Digital security, including security of space and virtual space vs. physical presence are identified as factors related to the virtual space.*

*Maintaining a group dynamic and suitability of patients relate to the delivering and running of VGCs which cause variation in dynamics of the consultation. Peer support and learning are considered to be benefits of a group dynamic.*

*Patients also experience greater control of their condition, VGCs have a therapeutic effect regarding condition validation, which thus increases ownership of health.*

*Facilitation was moved into group dynamic, as facilitation was identified to be an aspect of the group dynamic, rather than in and of itself.*

*These codes are categorised under this COC due to different factor associated with the dynamics of the consultation. Many codes relate to patient benefits. An underlying thread around control seems to be identified.*

*(including group dynamic, facilitation, use of care, confidentiality and control)*

**EVALUATION:** *Evaluation is associated with the need for further evidence of VGCs.*

*Lack of formal evaluation and need for evidence is central to this theme.*

*From this, there is an inability to establish clinical benefit, no evidence to demonstrate time or workload saved and the inability to measure VGCs by numbers. Measurement of biometrics was varied according to HCPs.*

*The contrast between F2F GCs and VGCs is apparent.*

*These codes were brought together with a common meaning of a lack of evaluation and the need to provide evidence. This demonstrates an uncertainty regarding impact.*

*(including evaluation and outcomes, F2F vs. Virtual, implementation, sustainability)*

**SUSTAINABILITY:** *Sustainability was structured at three levels: abstract, pragmatic, individual.*

*In abstract terms, sustainability relates to the need for a culture change and being fed-up of the virtual approach. Implementation is often viewed as trial and error, with the need for perseverance, to normalise and sustain the approach.*

*At a pragmatic level, sustainability is dependent on benefits, with the need for funding and the ability to make VGCs mandatory.*

*Individually, the sustainability of VGCs is dependent on the appropriateness of patient need.*

*These codes are grouped under this COC as they refer to the ability or inability to sustain the implementation of VGCs.*

*(including context of general practice, implementation, sustainability)*

### **Reasons for 3<sup>rd</sup> categorisations:**

#### **CONTEXT + CAPACITY: CONTEXT AS A DRIVER VS. RESTRICTION**

*'Context as a driver vs. restriction' was structured by three subthemes: The national context of the pandemic; context at practice level; and a consideration of patient demographics.*

*Context and capacity were considered as intertwined as I developed through the analysis process. The context of general practice at the time of the pandemic and the initiation of VGCs meant there was very little capacity to think about newer ways of working, prioritising essential need and urgent care. After interpreting the initial codes, the influences of context (at a national, practice and patient level) and capacity were either considered to drive VGCs or restrict them. Therefore, the theme of 'context as a driver vs. restriction' encompasses this tension. Capacity was removed from naming the theme as viewed to be a by-product of the context of general practice at the time, rather a theme in and of itself.*

#### **CONCEPTUALISATION + BUY-IN: CONCEPTUAL PARTICIPATION**

*'Conceptual Participation' was formed through a grouping of four subthemes: Conceptualisation of definition, use and delivery; Organisational investment of VGCs; HCPs as advocates; and Patient engagement with VGCs.*

*It was very much debated that conceptualisation was viewed as distinct, however, upon reflection and throughout the process of analysis, it became clear that conceptualisation of the approach was a reason why practices/HCPs/patients bought into the idea of VGCs. An understanding of VGCs determined how it was used and delivered in practice and was ultimately applied pragmatically according to practice or patient need. The flexibility of conceptualisation aided implementation as practices would employ VGCs to suit their own needs. Organisational investment, HCPs as advocates and patient engagement with VGCs were also viewed as key component for practices/healthcare professionals/patients to buy-in to the approach. Having the support of the organisation, in terms of practice priorities and funding, having an HCP as an advocate of VGCs, and the need for patient engagement was key, but their participation is grounded in the conceptualisation of the approach.*

#### **CONTROL OF DYNAMICS + LOGISTICS + RESOURCES: PRACTICALITIES IN PRACTICE**

*Practicalities in practice was conceptualised into two sections: 'Controlling the group dynamic' and 'Resources to run VGCs'. 'Controlling the group dynamic' consisted of four subthemes: Maintaining the group dynamic virtually; Ownership of patient's health,*

*Security of the virtual space; and a Distancing of control. 'Resources to run VGCs' consisted of four subthemes: Roles associated with VGCs; Training for VGCs; Logistics of VGCs; and Having the digital capability.*

*A question posed by Professor Liz Halcomb regarding whether the issue of this theme was the group aspect of the consultation or the virtual aspect? This led to the conceptualisation of this theme into two sections: Managing the group dynamic and Resources to run VGCs.*

*Pragmatically, there are many considerations in the implementation of VGCs, which led to the groupings made in this theme. With regards to 'Managing the group dynamic', issues around lack of control, anonymity and managing a group virtually were apparent and reflecting how the group dynamic was managed in a VGC. In terms of 'Resources to run VGCs', the pragmatic and practical considerations for implementing VGCs were highlighted, for example, roles, training, logistics and digital capabilities.*

*Confidentiality and information governance were moved from 'Resources to run VGCs' to 'Managing the group dynamic virtually' as it aligned greater to the issues with remote monitoring of participants and how this can be controlled.*

*Whilst not intrinsically linked to each other, the connection between them resides in the practicalities in practice, offering considerations for those implementing VGCs.*

## **SUSTAINABILITY + ADDED BENEFIT + EVALUATION: UNCERTAINTY OF IMPACT**

*Uncertainty of impact was structured by four subthemes: The lack of formal evaluation; Uncertainty of measuring impact; Determining an added benefit; and The inability to sustain*

*Throughout the process of analysis, it became apparent that the inability to evidence an added benefit creates problems with sustainability. The lack of evidence in terms of patient benefit, clinical benefit or a reduction in time or workload is evident and the need to provide formal evidence is necessary for the future sustainability of VGCs. However, whilst not viewed descriptively in the data, there was a sense that participants were unable to measure impact, due to time constraints, lack of training, inability to conceptualise what is being measured and limited understanding regarding impact. In terms of added benefit, many practices would only be funded if they could provide an added benefit, rather than just employing an alternative model of care to collect the same clinical results or QOF points. A lack of evidence creates issues with sustainability as there isn't a theoretical grounding to which VGCs developed from. What has currently been evaluated does not necessitate sustainability.*

*This theme takes the analysis process in a full loop, as the inability to sustain VGCs reflects the current context and capacity to which VGCs were introduced as a reactive response.*

### **Reasons for 4<sup>th</sup> Categorisation:**

#### **CONTEXT + CAPACITY: THE CONTEXT OF IMPLEMENTATION**

*'Context as a driver vs. restriction' was renamed 'The context of implementation' as the theme was better understood as the contextual factors associated with the implementation of VGCs. This theme was then further structured by three subthemes: The influence of the COVID-19 pandemic; The context of general practice; and a consideration of patient characteristics.*

*Refinement to each subtheme was evidence in the fourth categorisation. Each subtheme was viewed on a macro, meso, micro level.*

*'The national context of the pandemic' was developed into 'The influence of the COVID-19 pandemic'. The reformulation of the subtheme allowed the candidate to deeply explore the national role of the pandemic on the implementation of VGCs as a contributing factor. Whereas the previous iteration did not focus on the 'influence' the pandemic had, in particular.*

*'Context at practice level' was refined further to focus on 'The context of general practice'. Not only does this subtheme identify practice level considerations but looks at implementation through the lens of the general practice itself.*

*'A consideration of patient demographics' was considered to be related to the 'characteristics' of the patient population rather than the demographics. The demographics of the population did not seem to have a direct impact on the implementation of VGCs, but rather the characteristics the patient population poses were key factors in the implementation of the approach.*

#### **CONCEPTUALISATION + BUY-IN: CONCEPTUAL PARTICIPATION**

*'Conceptual Participation', in the fourth iteration of the themes, led to a re-thinking of the language used with regards to patient engagement of the approach.*

*The candidate iteratively decided that the sub-theme did not represent engagement but rather how patients perceived the approach which either aided or created a barrier to engagement.*

*All other sub-themes (Conceptualisation of definition, use and delivery; Organisational Investment of VGCs; HCPs as advocates) remained the same, for further consideration as the analysis process progresses.*

#### **CONTROL OF DYNAMICS + LOGISTICS + RESOURCES: PRACTICALITIES IN PRACTICE**



*Whilst the theme name remained the same, the way the theme was structured was reformulated in the fourth iteration. The two sections, identified in the third iteration, were: 'Controlling the group dynamic' and 'Resources to run VGCs'. However, the candidate believed that some of the sub-themes overlapped e.g. a distancing of control and maintaining group dynamics virtually, and therefore were reduced.*

*Due to the overlapping ideas and concepts, the two main themes were removed which allowed for a further interpretation of the data set, from 8 sub-themes to 4 core sub-themes.*

#### **SUSTAINABILITY + ADDED BENEFIT + EVALUATION: UNCERTAINTY OF IMPACT**

*Within the fourth iteration, no amendments were made to the 'Uncertainty of Impact' theme. Further consideration of this theme will be undertaken as the analysis process progresses.*

### **Reasons for 5<sup>th</sup> categorisation:**

#### **CONTEXT + CAPACITY: THE CONTEXT OF IMPLEMENTATION**

*Within the 5<sup>th</sup> categorisation each subtheme was still considered to be viewed on a macro, meso, micro level.*

*'The influence of the pandemic' was restructured in terms of the barriers and facilitators associated with the influence of the pandemic and how this directly affected the implementation of VGCs.*

*'The context of general practice' was reinterpreted as 'The culture of general practice' as the sub-theme encompassed the nature of initiating change in relation to the processes and systems within general practice. The sub-theme also addressed factors affecting implementation at an meso, organisational level.*

*'A consideration of patient characteristics' was developed to encompass 'The inclusivity of patient characteristics'. As the analysis progressed, patient characteristics were seen to be a consideration in determining the inclusivity of VGCs, which had a subsequent effect on the implementation of the approach.*

#### **CONCEPTUALISATION + BUY-IN: CONCEPTUALISING IMPLEMENTATION**

*'Conceptual Participation' in the fifth iteration of the themes, led to a re-thinking of the language used within the theme title and with regards to organisational investment of VGCs and patient engagement of the approach.*

*'Conceptual Participation' was re-named 'Conceptualising Implementation', which was considered to align more to the needs of the research question and data set.*

*'Organisational Investment of VGCs' was renamed 'Organisational Resources' as investment of the approach was seen to be one resource amongst others, at a practice level, which influenced the implementation of VGCs. Renaming this sub-theme allowed for further interpretation.*

*With regards to patient perceptions within the fourth iteration, it was decided that the sub-theme represented patient perceptions, however, the engagement was seen to be an overriding factor in whether or not VGCs were implemented. Therefore, this sub-theme was left open to further interpretation, renaming 'Patient engagement and perceptions'.*

*'HCPs as advocates' was reinterpreted as 'Roles involved with VGCs'. This allowed the researcher to consider the roles of HCPs as both advocates and the practicalities of the roles involved. This sub-theme is still being iteratively developed.*

*Sub-theme (Conceptualisation of definition, use and delivery) remained the same, for further consideration as the analysis process progresses.*

## **CONTROL OF DYNAMICS + LOGISTICS + RESOURCES: THE PROCESS OF IMPLEMENTATION**

*The theme was renamed 'The process of implementation' which was viewed to incorporate the 'Practicalities in practice' associated with the approach. This allowed the researcher to more broadly focus on the barriers and facilitators associated with the process of implementation.*

*Further interpretation of subthemes meant the 4 sub-themes identified in the fourth iteration were considered into two central subthemes: Creating an optimum virtual group dynamic and Mobilising Resources.*

*These two subthemes were seen to be central concepts in relation to the process of implementation, highlighting factors within the sub-themes which were considered to be a barrier or facilitator to implementation.*

*'Security of the virtual space' was encompassed within 'Creating an optimum group dynamic', expanded to mean 'Creating an optimum virtual group dynamic'.*

*'Training methods for VGCs' were also addressed within 'Mobilising Resources'.*

*This also allowed the researcher to eliminate repetition within the theme, ensuring the research question is well addressed.*

## **SUSTAINABILITY + ADDED BENEFIT + EVALUATION: CAPTURING IMPACT**

*Within the fifth iteration, the theme was renamed 'Capturing Impact' as it was decided that the theme encompassed aspects of uncertainty but this, as a whole, related to an ability to adequately capture impact, which had a direct influence on whether VGCs were implemented.*

*Sub-themes (Uncertainty of measuring impact; The need for an evidence base; Determining an added benefit; The inability to sustain VGCs) remained the same, for further consideration as the analysis process progresses.*

### ***Reasons for 6<sup>th</sup> categorisation:***

#### **THE CONTEXT OF IMPLEMENTATION**

*Within the 6<sup>th</sup> categorisation each subtheme was still considered to be viewed on a macro, meso, micro level.*

*'The inclusivity of patient characteristics' was renamed 'Patient inclusivity' incorporating characteristics and social determinants which make VGCs inclusive or not. This has been restructured based on interpretative meaning rather than description.*

#### **CONCPETUALISING IMPLEMENTATION**

*'Roles involved with VGCs' was reflected on and interpreted as 'Individual and group motivations', as this incorporated both the role of HCPs as advocates and the roles involved with VGCs. This has been restructured based on interpretative meaning rather than description.*

#### **THE PROCESS OF IMPLEMENTATION**

*'Mobilising Resources' was renamed 'Processes and training' as when writing up the theme, the theme described the pragmatic processes and training needs identified with the approach. This has been restructured based on interpretative meaning rather than description.*

#### **CAPTURING IMPACT**

*'The inability to sustain VGCs' was renamed to 'The adaptability to sustain' as upon writing the theme, it became apparent that there was a need to account for the adaptability of the approach in aiding or hindering sustainability. This has been restructured based on interpretative meaning rather than description.*

### ***Reasons for 7<sup>th</sup> categorisation:***

#### **THE CONTEXT OF IMPLEMENTATION**

*Within the 7<sup>th</sup> categorisation each subtheme was still considered to be viewed on a macro, meso, micro level.*

*'The inclusivity of patient characteristics' was renamed 'Patient characteristics' referring to the practice populations to which VGCs cater for. This has been restructured based on interpretative meaning rather than description.*

## Appendix 42: Mapping of central organising concepts and corresponding codes



Mapping conducting on 04.09.23

Appendix 43: Final themes and subthemes with examples of quotes

THEME	QUOTES
<b>THEME 1: THE CONTEXT OF IMPLEMENTATION</b>	
i. <b>The influence of the COVID-19 pandemic</b>	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>'...a complete closed door and pushing, pushing everybody towards kind of a, a video or a telephone interaction didn't, didn't feel like send the message that we knew had to had to happen'(P02_NC)</i></li> <li>• <i>'...you know long term conditions didn't go away during, during COVID, but they were parked. Why? Why did we do that?'(P02_NC)</i></li> <li>• <i>'...it was a way of keeping up that relationship with the patients that we'd lost, erm, because of COVID'(P01_GPN)</i></li> <li>• <i>'...we saw these women who some of them hadn't been out of the house because, again, it was during COVID for quite a long time, or they've just been out, you know, for the walk that you could do, so they were quite isolated'(P07_GPN)</i></li> <li>• <i>'...we had the social distancing measures that forced health care to undergo rapid restructuring'(P08_ANP)</i></li> <li>• <i>'...But the pressures were huge as, as, I'm sure you'll remember, and, and so there's an awful lot of other things going on and a lot of other things having to kind of having to take priority and that that delayed things a bit'(P13_GP)</i></li> <li>• <i>'...there's a great deal of pressure on everybody's time just to do the things that actually tick boxes for things like quality outcome framework and now we've got IIFs where we've got to prove that we're, you know, we're doing these different things'(P09_NC)</i></li> <li>• <i>'...we hadn't got it set up to do long term condition reviews because usually a long-term condition review involves having your bloods done first, having, you know, your weight checked or your BMI checked or whatever, and we weren't able to do those things'(P09_NC)</i></li> <li>• <i>'...it was the pandemic that accelerated it'(P02_NC)</i></li> </ul>

THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...and I could see it all dwindling down and ruining all my hard work'(P08_ANP)</i></li> <li>• <i>'...totally get that and, and that was where the media coverage at particular points in time didn't do us any favours, because, erm, I'll actually, erm, if I was to, you know, be so bold as saying, actually, that the general practice itself wasn't exactly doing itself any favours either'(P02_NC)</i></li> <li>• <i>'...so we'd already had to close the doors to patients with long term conditions'(P09_NC)</i></li> <li>• <i>'...particularly with telephone consultations that are being snuck in with, you know, five minutes, these are becoming transactional micro consults, which are too pointless that that you almost, they're not worth doing, in fact, they can be harmful'(P10_GP)</i></li> <li>• <i>'...So they [HCPs] weren't able to come into work and because of the way sick pay works in primary care, they weren't working, so they weren't getting paid, so it was a way of trying to get them working so they would be seeing patients'(P09_NC)</i></li> </ul>
ii. The culture of general practice	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>'...it just makes me really, really sad...it's made me dissatisfied with doing things as we are... it's made me think this isn't working what we're doing...it's made me want to do work differently' (P03_GPN)</i></li> <li>• <i>'...we're being pulled from pillar to post, we're just machines, we're just commodities, you know, there's that, we're all getting, really, really, aren't we?'(P03_GPN)</i></li> <li>• <i>'...But we haven't got the time or the headspace for it at the moment. You need a breather to be able to look at what you're doing and realise that you could do it better and we don't have the breathing space'(P09_NC)</i></li> <li>• <i>'...We either need more staff or less patients, ideally both. More staff and less patients'(P09_NC)</i></li> <li>• <i>'...we haven't got enough time to commit to being able to provide this service'(P07_GPN)</i></li> <li>• <i>'...And although this work needs to be done anyway, and I believe we are, often not, we're on the back foot and we're getting more on the back foot all the time, takes a lot of effort to get on the front foot and then you can stay there and it gets easier'(P03_GPN)</i></li> </ul>

THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...they'll say to this person, can you do this for me? And that person can, but you've got to have that person and it's got they've got to have time to do it, they've got to have a dedicated time to do it'(P13_GP)</i></li> <li>• <i>'...I think with the virtual ones, I think part of the problem in primary care is that there aren't enough people trying to do the day job and patient expectation and demand is, is enormous'(P09_NC)</i></li> <li>• <i>'...I don't know maybe they wanna change, haven't got the energy'(P03_GPN)</i></li> <li>• <i>'...And it's just I don't think anyone else has the capacity to do it'(P11_HWC)</i></li> <li>• <i>'...it, I think, is because morale, and part of it is because the negative, really negative thing that I think, which I don't like saying, but is, resistance to change in the NHS'(P03_GPN)</i></li> <li>• <i>'...I would love somebody to do a study, that I think would drive us to implement these is because the only thing that motivates anyone in primary care, maybe anyone in the NHS at the moment, is reduction in workload. Nothing. We've got enough money. It's reduction in workload. It's just not enough staff, not enough time. Too many patients, too much need'(P10_GP)</i></li> <li>• <i>'...it was having to happen at the same time as pandemic pressures...I think finding the will and incentive for that at a time of huge pressure is very, very difficult practically'(P13_GP)</i></li> <li>• <i>'...You know, just because it's different, it doesn't mean it's, it's off limits'(P04_NC)</i></li> <li>• <i>'...It means they do them in addition to their other clinical sessions, as opposed to needing to take clinicians out of clinical sessions at a time when clinical sessions are, are so pressurised so'(P13_GP)</i></li> <li>• <i>'...I think you would probably need to limit it to the number of clinicians that go so that you're not you don't feel like your using too many of your staff for fewer patients'(P12_GP)</i></li> </ul>



THEME	QUOTES
iii. Patient characteristics	<p>Examples:</p> <ul style="list-style-type: none"> <li>• <i>'...Maybe that just generation just didn't like speaking to groups in that way as well'(P06_P)</i></li> <li>• <i>'...it's you know we we don't kind of we don't set a certain kind of age range or or anything like that, but depending on the condition with diabetes, it's usually sort of people over 40 and the long COVID group I was doing is is anyone and everyone really, there's not kind of a specific sort of demographic'(P11_HWC)</i></li> <li>• <i>'...you are not going to reach everybody and you're probably not going to reach the people you should reach because they don't have, they don't have the tech'(P09_NC)</i></li> <li>• <i>'...we sort of had assumptions that our patients because of language difficulties and because of poverty wouldn't be able to get online'(P07_GPN)</i></li> <li>• <i>'...it's quite basic stuff that we just can do automatically, but for them it was something completely new to them in terms of knowing what to do with the technology'(P07_GPN)</i></li> <li>• <i>'...maybe it would be a bit better now because their son could actually come round and help them do it, whereas previously they were just a bit on their own, for a lot of people'(P06_P)</i></li> <li>• <i>'...the people that have come to the video groups, the people that are, are a bit more familiar with technology'(P05_P)</i></li> <li>• <i>'...it takes a while to work out, they have all got tech or if they've got a phone they haven't got much Internet or, and people don't like to say that because everybody supposed to have it these days, aren't they?...actually the group of people who haven't got it often kind of almost hide, sort of hide it'(P03_GPN)</i></li> <li>• <i>'...Just go for whoever is up for trying this approach. Bums on seats, doesn't matter. If they're not even sick in any way, you know, you just want people are gonna turn up'(P10_GP)</i></li> <li>• <i>'...in a week, 73% of my patients needed an interpreter to have a consultation'(P07_GPN)</i></li> <li>• <i>'...we sort of had assumptions that our patients because of language difficulties and because of poverty wouldn't be able to get online'(P07_GPN)</i></li> <li>• <i>'...it allows better access sometimes for those that would prefer it'(P14_D)</i></li> </ul>

THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...Our total ethnic minority populations is probably about 50% and as well as our black, African and Caribbean population, we've got a lot of Sri Lankan, erm, and other Asian populations'(P13_GP)</i></li> <li>• <i>'...A new interpreting service has been commissioned in [xxx] and we've realised that they cut off after 15 minutes because we believe because they the pay drops with the interpreters after 15 minutes and we've been trying to work out what glitches in the IT system, but now I've realised that the calls often get cut at 15 minutes and you have to start again with the interpreter'(P12_GP)</i></li> <li>• <i>'...erm, they will absolutely sing the praises of, of video group clinics and they're in their 80s, so you know it's not, it's not an age issue'(P14_D)</i></li> <li>• <i>'...But I think with the wrong people, they don't work. No, that's not particularly yes or no answer, is it? But, the ones that have, where it's worked, it's worked really well, but it didn't work well enough because of the barriers to it'(P06_P)</i></li> <li>• <i>'...you aren't sort of randomly picked patients who were not going to turn up or who were going to turn up and then not say anything, so they, they, they cherry picked their patients for this'(P09_NC)</i></li> <li>• <i>'...they said, you know I can't do it? or they'd go on to teams, they would be like which button do I press? And no, I can't see the chat, Ohh you're on mute and you know got a bit painful'(P06_P)</i></li> <li>• <i>'...I definitely think that it's got, I think now that patients are more used to this as a as a as a platform you know to having a consultation online rather than physically going and sitting in the waiting room with all the journey folks from down the road'(P09_NC)</i></li> </ul>

THEME	QUOTES
<b>THEME 2: CONCEPTUALISING IMPLEMENTATION</b>	
i. Conceptualisation of definition, use and delivery	<p>Examples:</p> <ul style="list-style-type: none"> <li>• <i>'...as wide as it is long'(P04_NC)</i></li> <li>• <i>'...almost down to the imagination'(P04_NC)</i></li> <li>• <i>'...so there's another form set in primary care, they do something called VGC's...so it's in a virtual group and it's a normal consultation, so it's a clinic consultation...I sort of amalgamated the two so it is like a clinic, cause all eight patients are there at once, but it's, it's not quite a normal group session because you know they are able to talk to each other. I guess it's the same isn't it?(P14_D)</i></li> <li>• <i>'...are you gonna run it as an education session or are you gonna run it as you know an annual review?'(P01_GPN)</i></li> <li>• <i>'...you can easily do one without the checks'(P01_GPN)</i></li> <li>• <i>'...another, erm, element of tool in the box'(P02_NC)</i></li> <li>• <i>'...it's not replacing the, the, the annual review that, that patients have within their normal practice, it is, it is providing a lot of extra in terms of a lot of the lifestyle support and the kind of the understanding behind people's conditions'(P13_GP)</i></li> <li>• <i>'... it makes it a little bit easier for us because we're doing it at PCN level and therefore annual reviews need to stay within their practice and be within the practice record'(P13_GP)</i></li> <li>• <i>'...I think most clinicians, recognised very strongly, have always recognised, and particularly in our post pandemic world, that our patients are not getting the lifestyle, self-care, education support that we would like them to be getting'(P13_GP)</i></li> <li>• <i>'...it's a kind of a consult-, it is a consultation, erm, but it's also kind of group education as well'(P06_P)</i></li> <li>• <i>'...it, it would all depend on how you wanted to scope it'(P01_GPN)</i></li> <li>• <i>'...we we're not even entirely sure what their recent kind of diabetes data is, but that education for them'(P11_HWC)</i></li> </ul>

THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...it seems to work, you know really well as a, a vehicle for getting, you know, groups of patients together'(P04_NC)</i></li> <li>• <i>'...in video group consultations I'm incorporating video group clinics, work, coffee mornings, erm, health education opportunities, any anything which brings together people with similar symptoms and problems, and engages them as a group'(P04_NC)</i></li> <li>• <i>'...so it wasn't quite like structured education where it was dictated and it's a set topic every week, it was all based on patient needs'(P08_ANP)</i></li> <li>• <i>'...weekly initially, then it went to like and monthly and then yeah, like a bit longer. So, it went then every two months, so sort of weaning off the care, but it was nearly an 8 to 9 months programme'(P14_D)</i></li> <li>• <i>'...And so that's where we've pitched our group consultations and in some ways, it makes it a little bit easier for us because we're doing it at PCN level and therefore annual reviews need to stay within their practice and be within the practice record'(P13_GP)</i></li> <li>• <i>'...It doesn't have to be a clinical consultation, although that's the, I guess, that's where it all started from'(P01_GPN)</i></li> <li>• <i>'...it felt like we needed to be just more of a, a, of a chat really because of our patient population group'(P07_GPN)</i></li> <li>• <i>'...it's a replacement, for, for their normal diabetic face to face appointments that we used to have'(P05_P)</i></li> <li>• <i>'...I think that the, the, the idea behind it was that it would be a replacement for the annual review'(P09_NC)</i></li> </ul>

THEME	QUOTES
ii. Organisational resources	<p>Examples:</p> <ul style="list-style-type: none"> <li>• <i>'...the practice wouldn't have paid for it'(P09_NC)</i></li> <li>• <i>'...doing our child vaccine and vaccines and getting our women in for smear tests and things was felt to be more important'(P07_GPN)</i></li> <li>• <i>'...it pushes and pushes and it's like, 'oh, well, we'll do it this month' and then it hasn't quite happened, and...we'll do it next month and we'll do it the month after'(P13_GP)</i></li> <li>• <i>'...is a long-term thing and I think commissioners at work on a sort of yearly cycle'(P10_GP)</i></li> <li>• <i>'...how many patients could those three members of staff see...because then there was kind of a 1/2 an hour planning before and half an hour of the briefing at the ends, that was like a two hours just around the patients, besides the planning of the whole sessions...you could have had eight patients in those two hours three times over, so 24 patients and they weren't actually dealing with 24 patients'(P12_GP)</i></li> <li>• <i>'...I wasn't quite sure why they needed an administrator, a note taker and a clinician'(P09_NC)</i></li> <li>• <i>'...sometimes it's good to not have a clinician there, and that's where it's it, you know works, works really, really well...perhaps don't need a clinician. [urm] You know it, it might be a, a care coordinator who specialises in diabetes or a diabetes nurse'(P02_NC)</i></li> <li>• <i>'...it's not like a normal appointment when they have a choice, you know, it's, it's 13:00 o'clock or not so, it's been difficult to fill the clinic'(P10_GP)</i></li> <li>• <i>'...continue it because it was really difficult to find a time in the week when everybody was free at the same time'(P12_GP)</i></li> <li>• <i>'...work on their days off'(P12_GP)</i></li> <li>• <i>'...the infrastructure to support digital interactions on a, on a multiple basis'(P02-NC)</i></li> <li>• <i>'...I said let's have a 5-minute meeting in the evening tonight after work, we'll arrange to meet, I'll send you a link, you need to join the link...and then you're confident you know how to use it'(P08_ANP)</i></li> </ul>

THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...I put a bid in to the GPN 10 Point Plan people and asked for some money to fund a small pilot for this nurse and her practice to do some video group consultations'(P09_NC)</i></li> <li>• <i>'...there were all these people that were in charge of it who all just disappeared, you know, off a cliff edge... I think they knew that they were going and that they had to get rid of the funding'(P09_NC)</i></li> <li>• <i>'...when the funding from that obviously stopped, erm, there was a little gap in us doing them'(P01_GPN)</i></li> <li>• <i>'...it's quite tricky to get the practice to invest in, in, in doing them all the, you know all the time'(P01_GPN)</i></li> <li>• <i>'...PCN is, is great, as well, because then you've got somebody at the top, who's saying do this, but somebody at the top saying do this'(P03_GPN)</i></li> <li>• <i>'...the key barrier to implementing any form of group consultation is, the basic logistic of just getting it to happen, and that's partly about people understanding what they need to do to get it to happen'(P13_GP)</i></li> </ul>
<b>iii. Individual and group motivations</b>	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>'...really passionate about it to take it forward'(P02_NC)</i></li> <li>• <i>'...if people are just told to do this, they won't do it'(P03_GPN)</i></li> <li>• <i>'...a person who really believes in it rather than somebody where they practice manger has just gone right, you're not doing anything, you can do it'(P09_NC)</i></li> <li>• <i>'...our biggest advocates during this period of introduction and implementation were the nurses themselves'(P08_ANP)</i></li> <li>• <i>'...it fits very nicely with her role as a health coach because as a facilitator, she's then kind of doing that kind of coaching style and she's able to bring in her knowledge into terms of kind of what's available for people'(P13_GP)</i></li> <li>• <i>'...the first admin person was crying because she didn't wanna take this on...because it was being given to her in her role'(P03_GPN)</i></li> <li>• <i>'...it's not even just about one motivated individual, we have got a few individuals within [xxx] who are very motivated around group consultations but setting up a group consultation and practice or a PCN, and it's not about one individual, it's about a whole team and releasing that whole team needs funding'(P13_GP)</i></li> </ul>

THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...the best one really is the one where the nurse and the doctor are gonna join up together with us...and we've got the partner saying, yeah, go for it'(P03_GPN)</i></li> <li>• <i>'...making sure that all the members of staff in your practice are aware of what you're doing and are on board with it'(P07_GPN)</i></li> <li>• <i>'...you've gotta pick the people around you to make sure that you know they'll, they'll go along with you and support you'(P01_GPN)</i></li> <li>• <i>'...they don't think this is gonna work anyway...they don't think it's time saving...they don't think it's gonna be easy to do...we don't think it's gonna be a goer generally...they think, it's not gonna work, it's too much work'(P03_GPN)</i></li> <li>• <i>'...I think there's, there's, you know, a little bit of a wobble occasionally when you, you, you, get GP's or clinicians who are keen to do it and try it out, but the moment it sort of gets close to doing it, they get a little bit of a wobble and, and they think, urm, not 100% certain on this'(P04_NC)</i></li> <li>• <i>'...They don't understand the concept, but then you know, every time I hear somebody challenge me like that, I just simply think, well, it's because I haven't explained it properly'(P10_GP)</i></li> <li>• <i>'...It's they they've been able to kind of bring together the team, train, co-train some of the receptionists and healthcare support workers to be involved in it and things like that, so it, it, it's what we wanted'(P03_GPN)</i></li> <li>• <i>'...So a lot has changed but there are, there are opportunities now where if one person's at that those type of slightly upper levels, so a PCN or an ICB stands there as an advocate and says you know, let's do this'(P02_NC)</i></li> <li>• <i>'...They didn't see the benefit of actually getting, erm, patients together at all, in fact'(P02_NC)</i></li> <li>• <i>'...So, yeah, I think there is something to be said for the personality of the person doing it, but I think you'd have to be a certain personality anyway to want to do this, 'cause, erm, you're sort of putting yourself out there really aren't you?'(P01_GPN)</i></li> </ul>

THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...it's been difficult because some of the partners have been like, well, can't you just get the health coach to do it? It's like well they can't prescribe, so there's a real difficulty'(P10_GP)</i></li> <li>• <i>'...so it's either got to be within their, within their clinical role, and therefore within their paid time or you've got to be giving people a little bit of extra cash'(P13_GP)</i></li> </ul>
<b>iv. Perceived patient engagement</b>	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>'...if they had parking issues, you know, transport, mileage, fuel. If they were a little bit poorly or physical disabilities, they didn't have to worry if they were working, they could take some time out to join the group'(P08_ANP).</i></li> <li>• <i>'...there's definitely there's a huge place for people, especially working people who can hop on and access health in the middle of their day, if they're able to, or, so it's good for those people that can do that'(P03_GPN)</i></li> <li>• <i>'...there are few people who find them really useful and keep coming back'(P10_GP)</i></li> <li>• <i>'...the difficulty is probably keeping up, keeping up the numbers...the numbers weren't necessarily there from the patients'(P01_GPN)</i></li> <li>• <i>'...the effort that went into it for the number that we got...it wasn't worth continuing'(P12_GP).</i></li> <li>• <i>'...you will have empty, low attended clinic clinics in the first three to six months'(P10_GP)</i></li> <li>• <i>'...making them feel better, making them feel a bit happier during that time'(P07_GPN)</i></li> <li>• <i>'...there's a social element in ill health, which, if you're lonely and you've got nobody else, is a really big thing'(P09_NC)</i></li> <li>• <i>'...they were really, really successful, erm, and, and probably to a lot to do with the fact that you know a lot is around patient support of each other, you know?'(P01_GPN)</i></li> <li>• <i>'...more likely to leave with what they need and wanted, but they may not have asked'(P03_GPN)</i></li> <li>• <i>'...they could all talk with each other, they could recognise that they had, you know, some of the you know very, very similar things and then pass on'(P02_NC)</i></li> </ul>



THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...that's why we carry on doing it...not because I'm going to make a meaningful impact on the patients...they're gonna do what they want, erm, but they've got the best opportunity to learn from each other and actually listen to what we're saying in a meaningful way'(P05_P)</i></li> <li>• <i>'...there was this whole perception of, well, why can't I just speak to, you know, on the phone? Why does it have to be a video?'(P05_P)</i></li> <li>• <i>'...feeling that they were supported and that we still cared about them, even though we couldn't actually see them in person'(P07_GPN)</i></li> <li>• <i>'...the stress of having some long-term conditions, some newly diagnosed conditions are, erm, are never really addressed other than within a one, one to one conversation'(P02_NC)</i></li> <li>• <i>'...I make sure I deal with everyone else first and then they just chip in, often they're just sitting there because they want to learn more and they just enjoy the experience, so I don't, don't worry about the repeated attenders'(P10_GP)</i></li> <li>• <i>'...We're trying to, but it was it was, the numbers were too small, really'(P12_GP)</i></li> <li>• <i>'...you get you know what the response is you don't feel like you're talking to an empty room, which it can do when you do sort of big group things online'(P06_P)</i></li> <li>• <i>'...I've not, I think for patients it, it seems, to suit them just as well, if not better because they don't have all the logistics'(P10_GP)</i></li> <li>• <i>'...it felt less like you were wasting somebody's time, than if you didn't turn up to a clinic appointment, that kind of thing'(P12_GP)</i></li> </ul>

THEME	QUOTES
<b>THEME 3: THE PROCESS OF IMPLEMENTATION</b>	
<b>i. Creating an optimum virtual group dynamic</b>	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>'...because they're not, they're not in the room together'(P09_NC)</i></li> <li>• <i>'...there is that loss with the social stuff. I think that is a big miss'(P09_NC)</i></li> <li>• <i>'...they're focused on you on the screen...they're looking to, to the clinician and the facilitator for, for the guidance....they're less, they will chip in, they will make, but they've got to be encouraged to do it a bit more. It's not quite as natural for them'(P13_GP)</i></li> <li>• <i>'...to take it down quite quickly, to allow then the bigger screen and people's faces to be present and, and to get better interaction'(P13_GP)</i></li> <li>• <i>'...when your Teams screen sharing, people can't actually see that they've got a hand up and stuff'(P14_D)</i></li> <li>• <i>'...there's definitely benefits in virtual ones because I feel like there's more of an anonymity'(P11_HWC)</i></li> <li>• <i>'...I've found that people have not completely shut me down when I've said, well, you could just have your camera off and listen and just see if you like it'(P12_GP)</i></li> <li>• <i>'...are they as likely to exchange a bit of chitchat in a virtual consultation, as they would if they were sat next to somebody in a waiting room? I'm, I'm not sure'(P09_NC)</i></li> <li>• <i>'...I would have stopped my video to say, 'do people want to chat?', 'does anyone want to share anything?'(P14_D)</i></li> <li>• <i>'...I find it very difficult to keep track of people because the splitting screen keeps moving around so I can't work out, remember who I've asked the question'(P10_GP)</i></li> <li>• <i>'...to break the ice and make people talk to each other, erm, and, and kind of get their questions out and I think, that's, that's quite difficult'(P05_P)</i></li> <li>• <i>'...no mobiles going off, no one else in the room, respectful of each other when we're talking, the hands up when they want to say something etcetera, so no one's over talking and, and everyone being heard'(P08_ANP)</i></li> <li>• <i>'...what's in the room, stays in the room and that kind of thing'(P12_GP)</i></li> </ul>

THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...if somebody's intent on recording the session and then doing something stupid with it, they will'(P02_NC)</i></li> <li>• <i>'...the idea that somebody else could be listening into a conversation so certain sensitive issues...we recognise that and recognise that could be a problem'(P07_GPN)</i></li> <li>• <i>'...some of which you can police and others quite frankly you can't'(P02_NC)</i></li> <li>• <i>'...it's quite high trust thing and you are trusting them to behave appropriately that's rightly or wrongly'(P09_NC)</i></li> <li>• <i>'...I think because of body language and feeling engaged and involved, our patients definitely prefer face to face anyway'(P12_GP)</i></li> <li>• <i>'...in the same way...we can't stop the two that have gone for coffee talking about the other one, oh well she says this, and I know she doesn't'(P09_NC)</i></li> <li>• <i>'...There's a big social element attached to the physical problem'(P09_NC)</i></li> <li>• <i>'...So I know that the group online group method can work for people who don't want to be identified'(P12_GP)</i></li> <li>• <i>'...it adds like a layer of of difficulty in terms of really kind of getting where somewhere, someone is'(P11_HWC)</i></li> <li>• <i>'...So we were actively trying to allow people to peer support each other because I don't have diabetes and I don't live with it, but they live with it and that and really finding that that peer support is really helpful'(P14_D)</i></li> <li>• <i>'...I have people saying to me, how do you do it safely in a group? It's like, well, I'd say, how do you do safely in 10 minutes?'(P10_GP)</i></li> <li>• <i>'...people are generally pretty, erm, you know they they'll usually kind of speak when they've got their hand up or anything like that so'(P11_HWC)</i></li> <li>• <i>'...so you that you know which ones you can manage in the group and which ones just want to talk and you have to say well, look, I'm sorry, but you can't it's this person's turn now, so yeah, it's just thinking through them'(P05_P)</i></li> <li>• <i>'...I think, if we don't have to do the, how are you? How's your mother? You know, how have you got on bit? And somebody else has done that, that shortens the appointment time'(P09_NC)</i></li> </ul>

THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...patients don't often, you know they're not listening. And we found that initially with the with the face-to-face consultations that you know you'd spent all these years telling patients what a HbA1c was and they'd be, like, what's that then in the groups?'</i>(P05_P)</li> <li>• <i>'...Are they as likely to exchange a bit of chitchat in a virtual consultation, as they would if they were sat next to somebody in a waiting room? I'm, I'm not sure'</i>(P09_NC)</li> <li>• <i>'...there was no one else in the room'</i>(P08_ANP)</li> <li>• <i>'...if there is anybody else in the room, they've probably got the consent to be there'</i>(P02_NC)</li> </ul>
ii. Processes and training	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>'...the groundwork took longer than the actual consultations'</i>(P09_NC)</li> <li>• <i>'...really putting in those processes at the start and thinking about where the problems might be, where might people fall out and planning that out really well'</i>(P14_D)</li> <li>• <i>'...once you get it organised, the workload does go down and, but if you can't get over that then, you've, you've had it'</i>(P03_GPN)</li> <li>• <i>'...everybody's saturated and everybody's you know the workload is just so high...there was no way she could take that on'</i>(P03_GPN)</li> <li>• <i>'...we've got all the that sort of material, send the text out, then you've gotta get somebody to receive those, those replies and that needs to be sort of in a different pocket to the general saturation'</i>(P03_GPN)</li> <li>• <i>'...the big crux for us was getting the right person to kind of lead and run and be responsible for the kind of day-to-day for maintenance...but you've got to have someone to do it and everybody works such pressurised jobs that if you don't make it someone's role and therefore give them the dedicated time, it won't happen'</i>(P13_GP)</li> <li>• <i>'...the crux was getting somebody to own this and getting, getting [xxx] in post was really the you know that took a little bit of time'</i>(P13_GP)</li> <li>• <i>'...train your receptionists, the people's gonna book them, that's the people that we missed out the first time'</i>(P05_P)</li> </ul>

THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...was funded for a session a week or two, within the practice...to get some leadership training as part of the [xxx] Health Education England GP Fellowship scheme'(P10_GP)</i></li> <li>• <i>'...there are people out there who have done it, I suppose like me, who...can offer support in that way'(P01_GPN)</i></li> <li>• <i>'...it's a sort of apprenticeship thing more than it is, it's a skill, it's an art'(P10_GP)</i></li> <li>• <i>'...you can't do it by half'(P02_NC)</i></li> <li>• <i>'...doesn't mean we couldn't do it, we absolutely could but again, we've just not quite kind of crossed that boundary in terms of what the admin would look like'(P13_GP)</i></li> <li>• <i>'...you're getting a much more effective use of every single, if you like, clinical resource that's involved in this'(P02_NC)</i></li> <li>• <i>'...She's employed at a PCN level, and it's her job description, within her job description is to run our video group consultations and that's really been the big game changer and that's been now in place for the last couple of years, two, maybe even 2 1/2 years, I think'(P13_GP)</i></li> <li>• <i>'...You are going to have to promote it and and and just ride through those first few when you may only get two or three it doesn't matter'(P10_GP)</i></li> <li>• <i>'...then we won't get good uptake cause why would patients book into them because they don't know that there'(P10_GP)</i></li> <li>• <i>'...a lot more organisation that needs to be done, erm, you know, in, in the background'(P02-NC)</i></li> <li>• <i>'...But it's having a process, I guess, and now if you, you know what the process is, you just do it automatically'(P05_P)</i></li> <li>• <i>'...The other reason is that we, the model we set up with the videos, of course doesn't require a space, a physical space and there's then being a concern about finding that physical space because we're now running the, the group consultations at PCN level'(P13_GP)</i></li> <li>• <i>'...the governance does not catch up with the, you know, erm, with the capabilities so that the technological capabilities didn't really match'(P02-NC)</i></li> </ul>

THEME	QUOTES
<b>THEME 4: CAPTURING IMPACT</b>	
i. <b>Uncertainty of measuring impact</b>	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>'...how do you measure that they've got a better experience?'(P02_NC)</i></li> <li>• <i>'...is just kind of patient's words...it's not really data'(P11_HWC)</i></li> <li>• <i>'...I couldn't, I couldn't put that into, into numbers in terms of in terms of a clinical benefit...I don't think I could, I couldn't quantify that'(P13_GP)</i></li> <li>• <i>'...it's still hard to quantify, it's how much benefit it is to the patient'(P02_NC)</i></li> <li>• <i>'...I don't know what happened to the GPN 10 Point board. I think it just disappeared along with a lot of things in COVID, but nobody's ever chased it...It was kind of like, you know, you gave, this, this £6000 and this is what we've spent it on and nobody seemed to care but, I mean [general practice nurse] did write it all up as a report and have a copy of the report'(P09_NC)</i></li> <li>• <i>'...I just want to expand it a bit more to get more data and research'(P08_ANP)</i></li> <li>• <i>'...I've got a lovely spreadsheet, because I want to write it up...I've also got a more, erm, sort of actual data, sort of thing of whose, did you start with that? did you not? Did your cholesterol come down, blah blah blah? So, a bit of actual, actual Excel spreadsheet exciting data'(P06_P)</i></li> </ul>

THEME	QUOTES
ii. The need for an evidence base	<p>Examples:</p> <ul style="list-style-type: none"> <li>• <i>'...where's the evidence?'</i>(P02_NC)</li> <li>• <i>'...I don't know whether that's going with any sort of evidence-based thing or anything'</i>(P03_GPN)</li> <li>• <i>'...it's not all about the evidence'</i>(P02_NC)</li> <li>• <i>'...if we all, you know, stopped doing things because there wasn't the evidence there already, you just wouldn't make any innovative progress'</i>(P02_NC)</li> <li>• <i>'...if I ever think what the hell I'm doing you know, I just read, read the anonymous feedback and think blimey, this is so needed'</i>(P10_GP)</li> <li>• <i>'...don't measure the outcomes of video group clinics with numbers, measure it on the smiles of people's faces'</i>(P02_NC)</li> <li>• <i>'...don't measure the outcomes of video group clinics with numbers, measure it on the smiles of people's faces'</i>(P02_NC)</li> <li>• <i>'...we've had a couple of, couple of responses to a survey, but we've never done like a we've not got masses and massive data of, of kind of measures, outcome measures for people'</i>(P11_HWC)</li> <li>• <i>'...rather than me saying oh, well, somebody's HbA1C's gone down by 4 points because they were in a video group clinic...we didn't evaluate it in, in those ways really'</i>(P01_GPN)</li> <li>• <i>'...we keep people chugging along, but actually does anybody's annual review actually make them change their behaviour for a sustained point of time? Very, very rarely'</i>(P09_NC)</li> <li>• <i>'...focused on four elements, HbA1c, which is average glucose over three months and then BMI, measured their blood pressure and also got data on their existing cholesterol'</i>(P08_ANP)</li> <li>• <i>'...what we found was HbA1c from three, in three months had reduced from an average of 75 to 55 millimoles, which was approximately 28%...BMI reduced from 33 to 31, which was an average reduction of 4% in three months...Blood pressure reduced by 1% as an average'</i>(P08_ANP)</li> <li>• <i>'...people obviously managed to put their diabetes into remission and lose loads of weight'</i>(P14_D)</li> </ul>

THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...if you want it as an annual review, you kinda can't really avoid the needing the bloods...you need to see people's feet...you have to cheque people's pulses...there are things that you can't get round'(P01_GPN)</i></li> <li>• <i>'...you know primary care has not got the time to be, if you like wading through, erm, books, etc., so what we needed to really do is make it as simple as possible'(P02_NC)</i></li> <li>• <i>'...I think just have a go'(P01_GPN)</i></li> <li>• <i>'...because if you don't learn from it, it doesn't, erm, you know, erm, it doesn't improve anything'(P02_NC)</i></li> <li>• <i>'...you just gotta do it'(P03_GPN)</i></li> <li>• <i>'...just do it and see what happens. What could go wrong?'(P06_P)</i></li> <li>• <i>'...Let's just give it a crack because someone's told us to, and we'll see what happens and it's been successful'(P06_P)</i></li> <li>• <i>'...well, I'll give that a shot'(P10_GP)</i></li> <li>• <i>'...so we thought we would give it a go'(P12_GP)</i></li> <li>• <i>'...getting an, an understanding of what people needed to feel more comfortable with this as a principle was one of our, our kind of learning points, so evidence was key'(P02_NC)</i></li> <li>• <i>'...So, you, your, your general practice decisions that were kind of every day bread and butter, but they want to see or where's the evidence for it?'(P02_NC)</i></li> <li>• <i>'...My surgery only, to my population only, which not, not, not, might not be generalizable to other areas'(P08_ANP)</i></li> </ul>
<b>iii. Determining an added benefit</b>	<b>Examples:</b> <ul style="list-style-type: none"> <li>• <i>'...they've got to see an added benefit, so they've got to put that in when they're commissioning and then paying for something'(P13_GP)</i></li> <li>• <i>'...offering something that you can't get in a one-to-one appointment'(P12_GP)</i></li> <li>• <i>'...like all GPs, I think once you can prove that it's going to be of benefit to them, they'll be like, let's go ahead then'(P08_ANP)</i></li> </ul>



THEME	QUOTES
	<ul style="list-style-type: none"> <li>• <i>'...the added benefit comes within the lifestyle delivery within the greater understanding within the support for self-care...that was what we were paying for and from a practice and, and a delivery point of view'(P13_GP)</i></li> <li>• <i>'...we were struggling to get practices to get involved with group consultations without that added payment because that added payment just takes the pressure off in terms of people giving people the capacity to do it'(P13_GP)</i></li> <li>• <i>'...you're already paying for the annual review within the normal GP contract, we couldn't then be adding extra payment to practices to do that again'(P13_GP)</i></li> <li>• <i>'...the only thing that motivates anyone in primary care, maybe anyone in the NHS at the moment, is reduction in workload. Nothing. We've got enough money. It's reduction in workload. It's just not enough staff, not enough time. Too many patients, too much need'(P10_GP)</i></li> <li>• <i>'...where's results, where the savings'(P10_GP)</i></li> <li>• <i>'...that saving is so difficult to quantify and then putting people off'(P13_GP)</i></li> <li>• <i>'...in terms of money, we're talking primary and secondary care demand savings of a thousand, thousand, £1002 per patient, per year'(P08_ANP)</i></li> <li>• <i>'...if I were to pull something together, looking at kind of time saved, in terms of like this GP ran the diabetic group with me, and then we were able to see 16 patients in one session, you know, so I would kind of do it that way'(P11_HWC)</i></li> <li>• <i>'...that was also the intention behind the commissioning which I think was a, was an interesting thing and, and, probably slightly at odds with how kind of group consultations have been framed in other places'(P13_GP)</i></li> </ul>

THEME	QUOTES
iv. The adaptability to sustain	<p>Examples:</p> <ul style="list-style-type: none"> <li>• <i>'...one size doesn't fit all basically'(P07_GPN)</i></li> <li>• <i>'...while ever it's nice to have rather than a must have, then we'll do what we're paid to do, which is on day appointments, long term reviews, screening, vaccinations'(P09_NC)</i></li> <li>• <i>'...one of the nurses retired, erm, and another nurse left, and basically, we had to stop doing it and we haven't done it for about 18 months now'(P07_GPN)</i></li> <li>• <i>'...we'd have different admins, we'd have to stop, no admin, then an admin, then that person went, and the next person came, and they went'(P03_GPN)</i></li> <li>• <i>'...most people now want to come back in as opposed to, erm, do video groups'(P05_P)</i></li> <li>• <i>'...because they've only done it, you know, once or twice or for one particular subject area'(P02_NC)</i></li> <li>• <i>'...the perseverance gets you past that barrier and then you start to see the, the, the benefits streaming'(P02_NC)</i></li> <li>• <i>'...I'm not saying that I don't do that now, but I don't do it to the letter, if you know what I mean...I've found my own way really, rather than rigidly sticking to'(P01_GPN)</i></li> <li>• <i>'...If NHS England came up with a big sum of money... and said right, you know, we want...as part of the GP contract or part of the DES around the networks is that I don't know, a tenth of all consultations that happen in the network over the course of the year must be virtual group consultations and either we'll pay you for doing it or we'll fine you if you don't, then I think we do it'(P09_NC)</i></li> <li>• <i>'...don't be disheartened if at first you don't succeed because it does build and people get to know it'(P05_P)</i></li> <li>• <i>'...Well to be honest as part of the project I did it and nothing's happened since'(P08_ANP)</i></li> </ul>

## Appendix 44: Semi-structured interview ethical approval

### Study approval:

12/10/2022

Dear Ellie Scott,

Project Title: The implementation and impact of video group consultations by healthcare professionals and patients in primary care general practice: a semi-structured interview study  
REC Project Reference: 0312  
Type of Application: Main Application Form

Keele University's Research Ethics Committee reviewed the above Main Application Form.

#### Favourable Ethical opinion

The members of the Committee gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

#### Conditions of the favourable opinion

##### Reporting requirements

The University's standard operating procedures give detailed guidance on reporting requirements for studies with a favourable opinion including:

- Notifying substantial amendments
- Notifying issues which may have an impact upon ethical opinion of the study
- Progress reports
- Notifying the end of the study

##### Approved documents

The documents reviewed and approved are:

Document Type	File Name	Date	Version
Further Information	Do I need NHS REC review		
Recruitment advertisements	Patients - Recruitment Advert v0.1 01.08.22	01/08/2022	0.1
Recruitment advertisements	HCPs - Recruitment Advert v0.1 01.08.22	01/08/2022	0.1
Recruitment advertisements	Patients - Interview Invitation Letter v0.1 01.08.22	01/08/2022	0.1
Recruitment advertisements	HCPs - Interview Invitation Letter v0.1 01.08.22	01/08/2022	0.1
Recruitment advertisements	HCPs - Email Invitation to potential participants v0.1 01.08.22	01/08/2022	0.1
Further Information	Patients - Interview Topic Guide v0.1 01.08.22	01/08/2022	0.1
Further Information	HCPs - Interview Topic Guide v0.1 01.08.22	01/08/2022	0.1
Recruitment advertisements	Patients - Email Invitation to potential participants v0.2 28.09.22	28/09/2022	0.2
Consent forms	HCPs - MS Forms Interview Consent Form v0.2 28.09.2022	28/09/2022	0.2
Consent forms	Patients - MS Forms Interview Consent Form v0.2 28.09.2022	28/09/2022	0.2
Information sheets	HCPs - Interview Participant Information Sheet v0.2 28.09.22	28/09/2022	0.2
Information sheets	Patients - Interview Participant Information Sheet v0.2 28.09.22	28/09/2022	0.2
Further Information	Interview Ethics Application - Further Information Request	28/09/2022	0.1
Project Summary	FREC- VGC Interview Protocol v0.2 28.09.22	28/09/2022	0.2

Yours sincerely,

Dr Rebecca Venables

Chair / Lead Reviewer

## Amendment approval

---

19/04/2023

Dear Ellie Scott,

Project Title: The implementation and impact of video group consultations by healthcare professionals and patients in primary care general practice: a semi-structured interview study

REC Project Reference 0312

Type of Application Amendment sub-form

Keele University's Research Ethics Committee reviewed the above Amendment sub-form.

### Favourable Ethical opinion

The members of the Committee gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

### Conditions of the favourable opinion

#### Reporting requirements

The University's standard operating procedures give detailed guidance on reporting requirements for studies with a favourable opinion including:

- Notifying substantial amendments
- Notifying issues which may have an impact upon ethical opinion of the study
- Progress reports
- Notifying the end of the study

#### Approved documents

The documents reviewed and approved are:

Document Type	File Name	Date	Version
Supplementary document	FREC- VGC Interview Protocol v1.1 04.04.23	04/04/2023	1.1

Yours sincerely,

Dr Rebecca Venables

Chair / Lead Reviewer

**Reflexive Journal – Semi-structured Interviews**

Reflection	Insights	Action	Research Journey	Thesis
Reformulation of topic guide	<p>After completing the first initial eight interviews, the data appeared to be very consistent with the group consultation study (Swaithe et al., 2021). A rethink of the topic guide was necessary in order to meet the demands of the research question.</p> <p>This made sure that we were responding to the needs of the data and the method of reflexive thematic analysis.</p>	Rethink topic guide aligned with implementation and impact.	Embracing of the iterative nature of qualitative research	Methods chapter
Need for patient interviews	After analysis of the initial transcripts, the importance of framing the research question became apparent. The research question focuses on the implementation and impact of VGCs to which HCPs align themselves well. They are the ‘actors’ with regards to VGCs.	Discussion with the West Midlands Knowledge Mobilisation Forum to whether patients fit the research question – Do we need patients for implementation?	Important of considering patients for future research projects	Methods chapter

Reflection	Insights	Action	Research Journey	Thesis
	<p>On reflection, patients are not able to answer questions regarding implementation and impact, only experiences of VGCs.</p> <p>This feels like a bigger piece of work, than a tokenistic inclusion of x number of patients, as their contribution does not directly address the research question at hand.</p>	Discussion with stakeholders at Keele University LINK group – presentation of findings, need for patient interviews as a post-doc (NOVEMBER, 2023).		
Development of a theme surrounding context	<p>Initially NPT was used to discuss the results of the cross-sectional survey as lens of interpretation in relation to the implementation of a complex intervention.</p> <p>However, with regards to the interview study, the importance of context became increasingly apparent. The need to use a KM theory for discussion related to context is essential, as NPT is viewed as mainly</p>	Discussion with the West Midlands Knowledge Mobilisation Forum with regards to appropriate knowledge mobilisation theories	Reflecting on the iterative and flexible nature of qualitative research	Interview Results chapter

Reflection	Insights	Action	Research Journey	Thesis
	abstract rather than its pragmatic application into practice.			

Appendix 46: Interview participant practice demographics

Sex (M/F)	Professional Experience	Practice Demographics	Work Environment	Role with VGCs
HCP-01				
F	<b>Professional Role:</b> General Practice Nurse	<b>Location of Practice:</b> North-West England	<b>Employer:</b> General Practice and PCN	<b>Role with VGCs:</b> Topol fellowship which allowed buy-out for 2 days a week to run VGCs, ran as a PCN initiative
	<b>Duration of Current Role:</b> 10 years	<b>Size of Practice:</b> 5,000-10,000	<b>Division of role:</b> Split role to deliver VGCs	
	<b>Years Qualified:</b> 37 years	<b>Population Deprivation Status:</b> Least deprived decile (IMD, 2019)**		
HCP-02				
M	<b>Professional Role:</b> NHS England Senior Manager – Nursing Directorate	<b>Location of Practice:</b> North-East England	<b>Employer:</b> NHS England	<b>Role with VGCs:</b> National Implementation of VGCs as a COVID response, development of a full package of implementation
	<b>Duration of Current Role:</b> 12 years	<b>Size of Practice:</b> >25,000	<b>Division of role:</b> Role to implement VGCs	
	<b>Years Qualified:</b> N/A			



Sex (M/F)	Professional Experience	Practice Demographics	Work Environment	Role with VGCs
HCP-03				
F	<b>Professional Role:</b> General Practice Nurse / Diabetes Nurse Specialist	<b>Location of Practice:</b> West Midlands	<b>Employer:</b> General Practice and PCN	Involvement in the implementation of VGCs across the PCN
	<b>Duration of Current Role:</b> 3 years	<b>Size of Practice:</b> >25,000	<b>Division of role:</b> Role to implement VGCs	
	<b>Years Qualified:</b> 32 years	<b>Population Deprivation Status:</b> Mixture of deprivation and affluence* - Second most deprived decile (IMD, 2019)		
HCP-04				
M	<b>Professional Role:</b> Training Consultant	<b>Location of Practice:</b> South-East England	<b>Employer:</b> Training Company	Personalised Care using GCs and VGCs as a method of delivery, working with ARRS roles
	<b>Duration of Current Role:</b> 7 years	<b>Size of Practice:</b> 0-2,000	<b>Division of role:</b> Training practice to run GCs/VGCs	
	<b>Years Qualified:</b> N/A			
HCP-05				
F	<b>Professional Role:</b> Pharmacist / GP Partner	<b>Location of Practice:</b> London	<b>Employer:</b> General Practice	<b>Role with VGCs:</b> VGCs as a way to replace F2F GCs

Sex (M/F)	Professional Experience	Practice Demographics	Work Environment	Role with VGCs
	<b>Duration of Current Role:</b> 18 years	<b>Size of Practice:</b> 10,000-15,000	<b>Division of role:</b> As part of role	
	<b>Years Qualified:</b> 20+ years	<b>Population Deprivation Status:</b> Different Socio-Economic Mix* – fourth more deprived decile (IMD, 2019)**		
HCP-06				
F	<b>Professional Role:</b> Lead PCN Pharmacist	<b>Location of Practice:</b> South-West England	<b>Employer:</b> PCN	<b>Role with VGCs:</b> Thinking of GCs prior to the pandemic, developed VGCs as a way to run GCs during the pandemic, returned back to F2F
	<b>Duration of Current Role:</b> 6.5 years	<b>Size of Practice:</b> >25,000	<b>Division of role:</b> As part of role	
	<b>Years Qualified:</b> 16 years	<b>Population Deprivation Status:</b> Third less deprived decile (IMD, 2019)**		
HCP-07				
F	<b>Professional Role:</b> General Practice Nurse	<b>Location of Practice:</b> Yorkshire & The Humber	<b>Employer:</b> General Practice	<b>Role with VGCs:</b> Role in NHS England Digital Primary Care team, set-up and delivered VGCs
	<b>Duration of Current Role:</b> 29 years	<b>Size of Practice:</b> 5,000-10,000	<b>Division of role:</b> As part of role	

Sex (M/F)	Professional Experience	Practice Demographics	Work Environment	Role with VGCs
	<b>Years Qualified:</b> 35 years	<b>Population Deprivation Status:</b> Socio-Economically Diverse* – most deprived decile (IMD, 2019)**		
HCP-08				
F	<b>Professional Role:</b> General Practice Nurse / Advanced Nurse Practitioner	<b>Location of Practice:</b> North-West England	<b>Employer:</b> General Practice	<b>Role with VGCs:</b> VGCs as a master's university project, want to influence nurses in transforming change, and to speak up and have a voice
	<b>Duration of Current Role:</b> 10 years (GPN) / 2 years (ANP)	<b>Size of Practice:</b> 2,000-5,000	<b>Division of role:</b> Role facilitated further study on VGCs	
	<b>Years Qualified:</b> 13 years	<b>Population Deprivation Status:</b> Fourth more deprived decile (IMD, 2019)**		
HCP-09				
F	<b>Professional Role:</b> Primary Care Workforce Manager / Primary Care Nurse	<b>Location of Practice:</b> Yorkshire & The Humber	<b>Employer:</b> PCN	<b>Role with VGCs:</b> Facilitated funding from GPN 10 Point Plan for VGCs as a response to the pandemic, Involvement with ARRS roles
	<b>Duration of Current Role:</b> 6 years	<b>Size of Practice:</b> 10,000-15,000	<b>Division of role:</b> Not part of role, but enabled funding of VGCs	
	<b>Years Qualified:</b> 37 years	<b>Population Deprivation Status:</b> Deprived area*		

Sex (M/F)	Professional Experience	Practice Demographics	Work Environment	Role with VGCs
HCP-10				
F	<b>Professional Role:</b> General Practitioner (Salaried)	<b>Location of Practice:</b> South-East England	<b>Employer:</b> General Practice	<b>Role with VGCs:</b> Set-up and ran VGCs, involved with a third-party company who push for GCs, want to refine the model and teach it to others
	<b>Duration of Current Role:</b> 2 years	<b>Size of Practice:</b> 15,000-20,000	<b>Division of role:</b> Split role – ran as part of GP Fellowship	
	<b>Years Qualified:</b> 15 years	<b>Population Deprivation Status:</b> Mixture of deprivation and affluence* – Least deprived decile (IMD, 2019)**		
HCP-11				
F	<b>Professional Role:</b> Health and Well-Being Coach	<b>Location of Practice:</b> London	<b>Employer:</b> PCN	<b>Role with VGCs:</b> VGCs used as a holistic approach to long-term condition reviews, role to facilitate this
	<b>Duration of Current Role:</b> 2 years	<b>Size of Practice:</b> 5,000-10,000	<b>Division of role:</b> Role to deliver VGCs	
	<b>Years Qualified:</b> N/A	<b>Population Deprivation Status:</b> Fifth more deprived decile (IMD, 2019)**		

Sex (M/F)	Professional Experience	Practice Demographics	Work Environment	Role with VGCs
HCP-12				
F	<b>Professional Role:</b> General Practitioner (Partner)	<b>Location of Practice:</b> Yorkshire & The Humber	<b>Employer:</b> General Practice	<b>Role with VGCs:</b> Set-up and ran VGCs during the pandemic
	<b>Duration of Current Role:</b> 12 years	<b>Size of Practice:</b> 5,000-10,000	<b>Division of role:</b> As part of role	
	<b>Years Qualified:</b> 32 years	<b>Population Deprivation Status:</b> Socio-Economically Diverse* - most deprived decile (IMD, 2019)**		
HCP-13				
F	<b>Professional Role:</b> General Practitioner	<b>Location of Practice:</b> London	<b>Employer:</b> General Practice	<b>Role with VGCs:</b> Early adopter of GCs (around 7-8 years ago), set-up and ran VGCs due to the pandemic
	<b>Duration of Current Role:</b> 8 years	<b>Size of Practice:</b> 15,000-20,000	<b>Division of role:</b> As part of role	
	<b>Years Qualified:</b> 8 years	<b>Population Deprivation Status:</b> Deprived Population* - fourth more deprived decile (IMD, 2019)**		

Sex (M/F)	Professional Experience	Practice Demographics	Work Environment	Role with VGCs
HCP-14				
F	<b>Professional Role:</b> Dietician, Clinical Director	<b>Location of Practice:</b> Yorkshire & The Humber	<b>Employer:</b> PCN	<b>Role with VGCs:</b> Set-up a VGC programme across the PCN, converting F2F GCs to VGCs, hired for two days a week
	<b>Duration of Current Role:</b> 1 years	<b>Size of Practice:</b> >25,000	<b>Division of role:</b> Role to convert F2F GCs to VGCs	
	<b>Years Qualified:</b> 15 years			
*Participant reported deprivation status				
**Deprivation score (IMD, 1019) – Deprivation score retrieved from Fingertips (PHE)				

## Appendix 47: Categorisation of interview participants responses

	USE	CONDITION	ALTERNATIVE OR REPLACEMENT?	DEMOGRAPHICS	DRIVERS	BARRIERS	LOGISTICS	IMPLEMENTATION	OUTCOMES	EVALUATION	SUSTAINABILITY
HCP-01 (GPN)	<ul style="list-style-type: none"> <li>Clinical consultation</li> <li>Educational session (dependent on use)</li> <li>Ran as a programme</li> <li>Ran as annual review</li> <li>Dependent on condition</li> </ul>	<ul style="list-style-type: none"> <li>Long-COVID</li> <li>Post-natal care</li> <li>Cancer care</li> <li>Diabetes</li> <li>Asthma</li> <li>Paediatric asthma</li> </ul>	<ul style="list-style-type: none"> <li>Replacement for an annual review</li> <li>Offered as an alternative</li> </ul>	<ul style="list-style-type: none"> <li>PCN approach</li> <li>Open to all ages</li> </ul>	<ul style="list-style-type: none"> <li>Digital fellowship</li> <li>National funding</li> <li>COVID-19 – another way of connecting with patients</li> <li>Personal interest</li> <li>Protected Time</li> </ul>	<ul style="list-style-type: none"> <li>Patient uptake</li> </ul>	<ul style="list-style-type: none"> <li>Need for facilitation</li> <li>Ran alongside role</li> <li>Training undertaken</li> <li>Team buy-in</li> </ul>	<ul style="list-style-type: none"> <li>Invest more time initially</li> <li>Culture change</li> <li>'just have go'</li> <li>'give it a go'</li> </ul>	<ul style="list-style-type: none"> <li>Unsure whether there was an improvement in patient outcomes</li> <li>Inability to measure clinical outcomes</li> </ul>	<ul style="list-style-type: none"> <li>Patient feedback – surveys, testimonials</li> <li>No formal evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Continue to run VGCs</li> </ul>
HCP-02 (NHSE Manager)	<ul style="list-style-type: none"> <li>Ran nationally</li> <li>Ran as a programme</li> </ul>	<ul style="list-style-type: none"> <li>Newly diagnosed diabetes</li> <li>Perinatal health</li> <li>Post-natal depression</li> <li>Cancer care</li> </ul>	<ul style="list-style-type: none"> <li>Alternative – complementary delivery method</li> </ul>	<ul style="list-style-type: none"> <li>All ages</li> <li>Awareness of inequalities</li> <li>National implementation</li> </ul>	<ul style="list-style-type: none"> <li>Natural progression – plan in place prior to COVID</li> <li>Underpinning policy</li> <li>COVID accelerated the approach</li> <li>Role</li> </ul>	<ul style="list-style-type: none"> <li>Confidentiality</li> <li>Information governance</li> <li>Time consuming initially</li> <li>Digital security</li> </ul>	<ul style="list-style-type: none"> <li>Need for an advocate</li> <li>Need for training</li> <li>'you cant do it by half'</li> </ul>	<ul style="list-style-type: none"> <li>'Have a go approach'</li> <li>'make it as simple as possible'</li> <li>Cultural change – resistance to change</li> </ul>	<ul style="list-style-type: none"> <li>Not measured by outcomes but the smiles on patients faces</li> </ul>	<ul style="list-style-type: none"> <li>Case studies</li> <li>Need for evidence</li> <li>Patient feedback</li> </ul>	<ul style="list-style-type: none"> <li>National programme has ended</li> </ul>

	USE	CONDITION	ALTERNATIVE OR REPLACEMENT?	DEMOGRAPHICS	DRIVERS	BARRIERS	LOGISTICS	IMPLEMENTATION	OUTCOMES	EVALUATION	SUSTAINABILITY
HCP-03 (GPN)	<ul style="list-style-type: none"> <li>Long-term condition review (seen at 3 and 6 months)</li> <li>Support group/educational session</li> <li>Ran as a programme</li> <li>Offers a hybrid approach</li> </ul>	<ul style="list-style-type: none"> <li>Type 2 diabetes</li> </ul>	<ul style="list-style-type: none"> <li>Replacement of 1:1</li> </ul>	<ul style="list-style-type: none"> <li>Rural areas</li> <li>Affluent areas</li> <li>Very able population</li> <li>PCN approach</li> </ul>	<ul style="list-style-type: none"> <li>Funding</li> <li>Organisational priorities</li> <li>COVID-19 – current practice on the back foot</li> <li>Personal interest</li> </ul>	<ul style="list-style-type: none"> <li>Burden</li> <li>Culture change</li> <li>Exhaustion</li> <li>Staff buy-in</li> <li>Reluctance</li> <li>Time consuming</li> <li>High workload</li> <li>Patient uptake</li> </ul>	<ul style="list-style-type: none"> <li>Work additional to job role</li> <li>Need for a champion</li> <li>Training is 'learning on the job'</li> <li>Team buy-in</li> </ul>	<ul style="list-style-type: none"> <li>Questioned the importance of incentives for HCPs to run VGCs</li> <li>Resistance to change</li> <li>'you just gotta do it'</li> </ul>	<ul style="list-style-type: none"> <li>No outcomes collected</li> </ul>	<ul style="list-style-type: none"> <li>Collected audit data but would leave for someone else to evaluate</li> </ul>	<ul style="list-style-type: none"> <li>Return to F2F</li> <li>Continue to run some VGCs</li> </ul>
HCP-04 (Trainer)	<ul style="list-style-type: none"> <li>Self-support groups</li> <li>'as wide as it is long'</li> <li>Coffee mornings</li> <li>Gardening groups</li> <li>Walking groups</li> <li>Cooking classes</li> <li>Clinical consultation</li> <li>Imagination</li> </ul>	<ul style="list-style-type: none"> <li>No specified conditions</li> </ul>		<ul style="list-style-type: none"> <li>Ran at practice and PCN level</li> </ul>	<ul style="list-style-type: none"> <li>COVID</li> <li>Funding priorities – need to meet IIF indicators</li> <li>Organisational support</li> <li>Clinicians motivation</li> </ul>	<ul style="list-style-type: none"> <li>Apprehension</li> <li>Lack of interest</li> </ul>	<ul style="list-style-type: none"> <li>No need for a clinician to deliver VGCs</li> <li>Time saving for clinicians</li> <li>Training is uncommon</li> <li>Team buy-in</li> </ul>	<ul style="list-style-type: none"> <li>'Be brave'</li> </ul>	<ul style="list-style-type: none"> <li>Not measured outcomes</li> </ul>	<ul style="list-style-type: none"> <li>Patient feedback from third-party</li> </ul>	



	USE	CONDITION	ALTERNATIVE OR REPLACEMENT?	DEMOGRAPHICS	DRIVERS	BARRIERS	LOGISTICS	IMPLEMENTATION	OUTCOMES	EVALUATION	SUSTAINABILITY
HCP-05 (GP Partner & Pharmacist)	<ul style="list-style-type: none"> <li>VGCs as annual review</li> <li>Used as a follow up</li> <li>Delivery of hybrid group consultations</li> </ul>	<ul style="list-style-type: none"> <li>Diabetes</li> <li>Hypertension</li> <li>High cholesterol</li> </ul>	<ul style="list-style-type: none"> <li>Replacement for F2F</li> <li>Routine care</li> <li>Offer as alternative</li> </ul>	<ul style="list-style-type: none"> <li>Poor socio-economic area</li> <li>Mixed ethnicity of patients</li> </ul>	<ul style="list-style-type: none"> <li>COVID-19 (previously delivered F2F – a way to maintain contact with patients)</li> <li>Organisational buy-in – NHSE</li> <li>Personal interest</li> </ul>	<ul style="list-style-type: none"> <li>Facilitation</li> <li>Digital literacy</li> <li>Access to technology</li> <li>Digital literacy</li> <li>Patient uptake</li> </ul>	<ul style="list-style-type: none"> <li>Need for a champion</li> <li>Time efficient</li> <li>Need for training</li> <li>MDT involvement</li> </ul>	<ul style="list-style-type: none"> <li>Difficult to start</li> <li>Lack of natural succession</li> <li>Need for normalisation</li> </ul>	<ul style="list-style-type: none"> <li>VGCs do not offer an improvement in clinical outcomes as dependent on patients motivations</li> <li>Saving time should be an outcome</li> <li>Hidden improvements</li> <li>Value for money</li> </ul>	<ul style="list-style-type: none"> <li>Patient feedback</li> <li>Difficulties with evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Continues to run VGCs and hybrid group consultations</li> <li>Patients want a return to F2F</li> </ul>
HCP-06 (PCN Pharmacist)	<ul style="list-style-type: none"> <li>Used as a follow up to a 1:1 consultation</li> <li>5-6 VGCs delivered</li> <li>Group education</li> <li>Clinical consultation</li> <li>Dependent on condition</li> </ul>	<ul style="list-style-type: none"> <li>Statin uptake, cholesterol, Q risk</li> <li>Medication review</li> </ul>	<ul style="list-style-type: none"> <li>Alternative</li> </ul>	<ul style="list-style-type: none"> <li>Patient's in their 60's and 70's</li> <li>Need for the right demographic to work</li> <li>Ran at a PCN level</li> </ul>	<ul style="list-style-type: none"> <li>COVID restrictions – no choice</li> <li>Personal interest</li> </ul>	<ul style="list-style-type: none"> <li>Need for greater training</li> <li>Demographics</li> <li>Technology</li> <li>Lack of time</li> <li>Digital literacy</li> <li>Low patient attendance</li> </ul>	<ul style="list-style-type: none"> <li>Experience of VGCs is essential</li> <li>Training is needed</li> <li>MDT involvement</li> </ul>	<ul style="list-style-type: none"> <li>'lets just give it a crack'</li> <li>'its still not really come off the ground'</li> <li>'just do it and see what happens'</li> </ul>	<ul style="list-style-type: none"> <li>Measured clinical outcomes</li> </ul>	<ul style="list-style-type: none"> <li>Patient feedback</li> <li>Want to evaluate</li> </ul>	<ul style="list-style-type: none"> <li>Stopped VGCs and would not return to VGCs unless there was a different patient demographic or for a different condition</li> </ul>

	USE	CONDITION	ALTERNATIVE OR REPLACEMENT?	DEMOGRAPHICS	DRIVERS	BARRIERS	LOGISTICS	IMPLEMENTATION	OUTCOMES	EVALUATION	SUSTAINABILITY
HCP-07 (GPN)	<ul style="list-style-type: none"> <li>VGCs as a programme</li> <li>'one size doesn't fit all'</li> </ul>	<ul style="list-style-type: none"> <li>Pre-Diabetes</li> </ul>	<ul style="list-style-type: none"> <li>Alternative to community services</li> </ul>	<ul style="list-style-type: none"> <li>Women who speak Urdu language</li> <li>Ethnic minorities – different languages spoken</li> <li>Ran at practice level</li> </ul>	<ul style="list-style-type: none"> <li>Personal interest</li> <li>COVID – a way to reduce isolation</li> </ul>	<ul style="list-style-type: none"> <li>Team buy-in</li> <li>Workload</li> <li>Digital literacy</li> </ul>	<ul style="list-style-type: none"> <li>Additional to job role</li> <li>No extra funding</li> <li>MDT involvement</li> </ul>	<ul style="list-style-type: none"> <li>Trial and error</li> </ul>	<ul style="list-style-type: none"> <li>No measurement of clinical outcomes</li> </ul>	<ul style="list-style-type: none"> <li>Patient feedback</li> <li>Limited evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Not currently undertaking VGCs but had previously ran them</li> <li>Stopped when clinicians left</li> <li>Want to return to VGCs</li> </ul>
HCP-08 (ACP/ANP)	<ul style="list-style-type: none"> <li>Combination of a clinical consultation and group education</li> <li>Programme of two hours for four weeks (1 session as a clinical consultation, 3 as group education)</li> <li>Pragmatic use based on patients' needs</li> </ul>	<ul style="list-style-type: none"> <li>Diabetes</li> </ul>		<ul style="list-style-type: none"> <li>All men</li> <li>Complex population</li> <li>Need for PCN approach, currently ran at practice level</li> </ul>	<ul style="list-style-type: none"> <li>Ran VGCs as part of a master's programme</li> <li>Protected time</li> <li>Solution to care during COVID</li> <li>Higher education support</li> </ul>		<ul style="list-style-type: none"> <li>Down to the individual to champion</li> <li>MDT involvement</li> </ul>	<ul style="list-style-type: none"> <li>'see how it goes'</li> <li>Plain sailing</li> <li>'just do it'</li> </ul>	<ul style="list-style-type: none"> <li>Improvements in HbA1c, cholesterol, BP and BMI</li> <li>Increase in Patient Activation Levels</li> <li>Cost benefit</li> <li>Reducing appointments</li> </ul>	<ul style="list-style-type: none"> <li>Self-designed patient survey, pre- and post-workshops</li> <li>Patient feedback</li> </ul>	<ul style="list-style-type: none"> <li>Ran for the duration of the masters programme and then stopped</li> <li>'Not halted but on a pause'</li> </ul>

	USE	CONDITION	ALTERNATIVE OR REPLACEMENT?	DEMOGRAPHICS	DRIVERS	BARRIERS	LOGISTICS	IMPLEMENTATION	OUTCOMES	EVALUATION	SUSTAINABILITY
HCP-09 (Manager)	<ul style="list-style-type: none"> <li>Ran as a replacement for LTC reviews</li> </ul>	<ul style="list-style-type: none"> <li>Diabetes</li> </ul>	<ul style="list-style-type: none"> <li>A way to get HCPs (those who were shielding) back into work</li> <li>A way to complete LTC reviews</li> </ul>	<ul style="list-style-type: none"> <li>Aimed at accessible population – ‘working with the willing’</li> <li>Purposive selection of patients based on their condition and technological ability</li> <li>Deprived area – hard to reach</li> </ul>	<ul style="list-style-type: none"> <li>COVID</li> <li>Personal Interest</li> <li>Funding</li> <li>Having a host practice to run VGCs</li> </ul>	<ul style="list-style-type: none"> <li>Lack of virtual peer support</li> <li>Implementation id dependent solely on funding</li> <li>Lack of breathing space for staff</li> </ul>	<ul style="list-style-type: none"> <li>Additional to job role</li> <li>Funding</li> </ul>	<ul style="list-style-type: none"> <li>‘again I think we because we just said, here’s the money, go away and spend it’</li> <li>‘and then I kind of left them to it’</li> <li>‘We, we got the money and we weren’t terribly interested in how long it took’</li> </ul>	<ul style="list-style-type: none"> <li>Time saving for nurses</li> </ul>	<ul style="list-style-type: none"> <li>Report as evaluation for funders</li> <li>Funders never followed up the report</li> </ul>	<ul style="list-style-type: none"> <li>Ran for the period of funding and then stopped as there was no funding left</li> </ul>

	USE	CONDITION	ALTERNATIVE OR REPLACEMENT?	DEMOGRAPHICS	DRIVERS	BARRIERS	LOGISTICS	IMPLEMENTATION	OUTCOMES	EVALUATION	SUSTAINABILITY
HCP-10 (GP)	<ul style="list-style-type: none"> <li>Lifestyle Programme</li> </ul>	<ul style="list-style-type: none"> <li>Type 2 Diabetes</li> <li>Menopause</li> </ul>	<ul style="list-style-type: none"> <li>Ran as an addition to annual reviews</li> <li>Ran as an additional lifestyle programme</li> </ul>	<ul style="list-style-type: none"> <li>Ran with two different populations – a) wealthy population, b) deprived area</li> <li>Not about patient demographic s, it's just having bums on seats, you can't be picky with patient characteristic s</li> <li>Patient uptake is slow at the outset – accommodation of all demographic s needed</li> </ul>	<ul style="list-style-type: none"> <li>COVID</li> <li>Learning from others (internationall y)</li> <li>Training</li> <li>Funding</li> <li>Personal interest</li> </ul>	<ul style="list-style-type: none"> <li>Funding</li> <li>Context of general practice</li> <li>Inability to scale up</li> <li>Lack of operationalisation/understan ding</li> <li>Delivery of the model</li> </ul>	<ul style="list-style-type: none"> <li>Additional to job role</li> <li>Works extra hours in free time</li> <li>Technology</li> </ul>	<ul style="list-style-type: none"> <li>'I'll give that a shot'</li> <li>Only ran for the period of funding</li> <li>Delivered across a number of practice s but inability to scale up</li> <li>Want for the development of a train the trainer model</li> </ul>	<ul style="list-style-type: none"> <li>Helps patients to manage their condition better</li> <li>Helps HCPs slow down</li> <li>Alternative to one-to-one consultation s</li> </ul>	<ul style="list-style-type: none"> <li>Patient reported outcome measures</li> <li>Need for further studies on the implementation and viability of the approach</li> </ul>	<ul style="list-style-type: none"> <li>Acceptance that VGCs are a completely different model of care</li> <li>Funding dependent</li> <li>Personal interest dependent</li> </ul>
HCP-11 (Health Coach)	<ul style="list-style-type: none"> <li>Education focus on a long-term condition review</li> </ul>	<ul style="list-style-type: none"> <li>Diabetes</li> </ul>	<ul style="list-style-type: none"> <li>Ran as addition to annual review</li> </ul>	<ul style="list-style-type: none"> <li>Ran with any demographic s of patients</li> <li>Demographic s depending on condition</li> </ul>	<ul style="list-style-type: none"> <li>Role to implement video group consultations</li> <li>Funding for role</li> <li>Capacity over a PCN</li> </ul>	<ul style="list-style-type: none"> <li>Lack of patient engagement – anonymity of patients on a video group consultation</li> <li>Administration time</li> <li>Workload</li> <li>Capacity</li> </ul>	<ul style="list-style-type: none"> <li>Administrati on time</li> <li>Championin g due to role</li> </ul>	<ul style="list-style-type: none"> <li>Implementati on dependent on funded role</li> </ul>	<ul style="list-style-type: none"> <li>No clinical outcomes collected</li> </ul>	<ul style="list-style-type: none"> <li>Patient surveys</li> </ul>	<ul style="list-style-type: none"> <li>Continuing to run VGCs</li> </ul>

	USE	CONDITION	ALTERNATIVE OR REPLACEMENT?	DEMOGRAPHICS	DRIVERS	BARRIERS	LOGISTICS	IMPLEMENTATION	OUTCOMES	EVALUATION	SUSTAINABILITY	
HCP-12(GP Partner)	<ul style="list-style-type: none"><li>Educational Programme</li></ul>		<ul style="list-style-type: none"><li>Pain Management</li></ul>	<ul style="list-style-type: none"><li>Alternative</li></ul>	<ul style="list-style-type: none"><li>Ethnically diverse populations</li><li>Majority of patients need a translator</li><li>Socio-economic deprivation</li><li>Ran as a practice, support from PCN</li></ul>	<ul style="list-style-type: none"><li>COVID</li><li>Individual advocate</li><li>Practice support</li><li>Role as a GP Partner</li></ul>	<ul style="list-style-type: none"><li>Lack of patient attendance</li><li>Patient preference</li><li>Workload</li><li>Technology</li></ul>	<ul style="list-style-type: none"><li>Technology</li><li>Need for an interpreter</li><li>Getting HCPs available at the same time</li></ul>	<ul style="list-style-type: none"><li>'We were just experimenting'</li><li>Ran as a pilot</li><li>Depended on championing</li><li>Dependent on patient demographic</li></ul>	<ul style="list-style-type: none"><li>No clinical outcomes collected</li><li>Debate to whether they are time-saving across primary care teams</li></ul>	<ul style="list-style-type: none"><li>No evaluation</li><li>Attempted patient surveys but was too difficult to follow up</li></ul>	<ul style="list-style-type: none"><li>Stopped after the pilot, considering running F2F GCs</li></ul>

	USE	CONDITION	ALTERNATIVE OR REPLACEMENT?	DEMOGRAPHICS	DRIVERS	BARRIERS	LOGISTICS	IMPLEMENTATION	OUTCOMES	EVALUATION	SUSTAINABILITY	
HCP-13 (GP)	<ul style="list-style-type: none"><li>• Ran as an addition to annual review as a lifestyle approach</li></ul>		<ul style="list-style-type: none"><li>• Diabetes</li><li>• Hypertension</li></ul>	<ul style="list-style-type: none"><li>• Ran as an addition to annual review</li><li>• Would like to replace annual review but not possible (double pay with commissioning)</li></ul>	<ul style="list-style-type: none"><li>• High socio-economic deprivation</li><li>• Ran group consultations as a practice, now run VGCs as a PCN due to capacity</li></ul>	<ul style="list-style-type: none"><li>• COVID</li><li>• Ran at PCN level increased capacity</li><li>• Dedicated role</li><li>• Funding (three funding pots)</li><li>• Organisational priorities – recovery funding</li></ul>	<ul style="list-style-type: none"><li>• Lack of capacity</li><li>• Workload</li><li>• Dedicated roles</li><li>• Administration</li><li>• Whole team buy-in</li></ul>	<ul style="list-style-type: none"><li>• Understood as the main barrier</li><li>• Need to be addressed before implemented</li><li>• Need a dedicated role to deal with the logistical challenges</li></ul>	<ul style="list-style-type: none"><li>• Dependent on capacity</li><li>• Dependent on championing the approach</li><li>• Dependent on funding</li><li>• Dependent on whole team buy-in</li></ul>	<ul style="list-style-type: none"><li>• Clinical outcomes collected at annual review</li><li>• Reviewed at VGC on results board</li></ul>	<ul style="list-style-type: none"><li>• Patient feedback collected</li><li>• No outcome measures collected</li></ul>	<ul style="list-style-type: none"><li>• Continue to run VGCs</li><li>• Want to continue running F2F GCs also</li></ul>

HCP-14 (Dietician)	USE	CONDITION	ALTERNATIVE OR REPLACEMENT?	DEMOGRAPHICS	DRIVERS	BARRIERS	LOGISTICS	IMPLEMENTATION	OUTCOMES	EVALUATION	SUSTAINABILITY
	<ul style="list-style-type: none"> <li>Ran as an educational programme</li> <li>Opportunities to book in for 1:1 appointments throughout the programme</li> <li>Involved in various applications of VGCs</li> </ul>	<ul style="list-style-type: none"> <li>Diabetes</li> <li>Low carb diet</li> </ul>	<ul style="list-style-type: none"> <li>Ran as additional to annual review, identified by clinician as an extra in annual review</li> </ul>	<ul style="list-style-type: none"> <li>Ran across a PCN</li> </ul>	<ul style="list-style-type: none"> <li>Role employed to convert F2F GCs to VGCs</li> <li>Organisational interest</li> <li>Funding</li> <li>GPs initial interest</li> <li>Condition specific</li> </ul>	<ul style="list-style-type: none"> <li>Not having the capacity in her role</li> <li>Workload and time to convert F2F to video</li> </ul>	<ul style="list-style-type: none"> <li>Technology</li> <li>Logistically easier than F2F</li> <li>Support from funding</li> <li>Organisational interest</li> </ul>	<ul style="list-style-type: none"> <li>Dependent on funding, but presumed programme would have ran without funding</li> <li>Requires capacity in role to implement and up-scale</li> </ul>	<ul style="list-style-type: none"> <li>Clinical outcomes collected at different points of the programme</li> <li>Reviewed at the start, middle and end</li> </ul>	<ul style="list-style-type: none"> <li>Outcome measures collected throughout the programme</li> </ul>	<ul style="list-style-type: none"> <li>Reverted back to F2F due to capacity in role</li> <li>Participant left role and another dietician is now leading the programme</li> <li>Recognises the value of hybrid consultations, yet to be delivered</li> </ul>

**The implementation and impact of video group consultations by healthcare professionals and patients in primary care general practice**

**Themes so far (after 8 interviews)**

Roles	Role in practice and in relation to VGC
Impact of the pandemic	COVID driver, incentives, shift to virtual
Condition specific	Use of VGCs
Group support	Peer learning and education
Patient feedback	Positive benefits of VGCs for patient knowledge and supported peer learning
Advocate	Need an advocate for VGC to aid implementation
Time	Lack of time to run VGC, usually ran additional to the working day
Workload	High workload, MDT involvement, increased admin time
Digital literacy	Patients and staff digital literacy levels, digital divide, demographics of patients
Demographics	Affluence v.s poverty



### **Gaps needed to be addressed in the next interviews**

Governance	Control of a VGC
Outcomes	Clinical outcomes vs. patient benefit
Sense-making	What are HCPs hoping to achieve when running VGCs?
F2F vs. virtual	Difference in group dynamic and use of technology
Buy-in	Who are the decision makers?
Hybrid approach	Alternative models of GCs
Group dynamic	How is peer support managed online?
Additional or replacement	Are VGCs viewed as additional or replacement, impact on day-to-day job

### **Additional themes added after completion of 10 interviews**

Context of general practice	Focus on the general practice context as a barrier or facilitator to implementation, VGCs as context dependent
Group Dynamic	in terms of space, presence, anonymity, social cohesion
Use of care	Re-engagement of care, ownership of health,

Also reflected on the need to ask the more pertinent questions, removed questions regarding confidentiality (unless addressed by participant), and hybrid consultations. Hybrid consultations were only spoken about if they had done both F2F and VGCs. Questions regarding implementation and impact were prioritised (i.e. questions related to evaluation, time and workload, buy-in, sustainability).

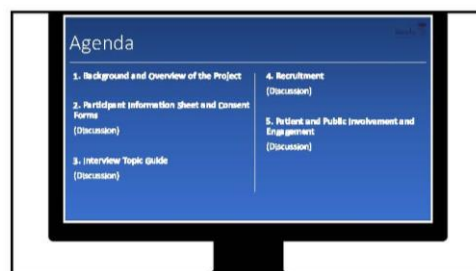
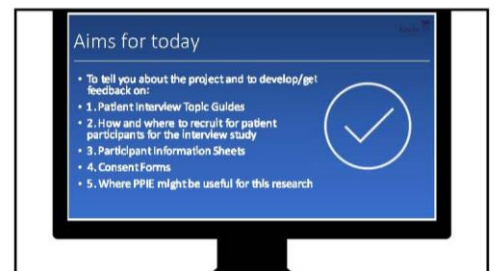
**Key discussion points identified within the LINK group meeting**

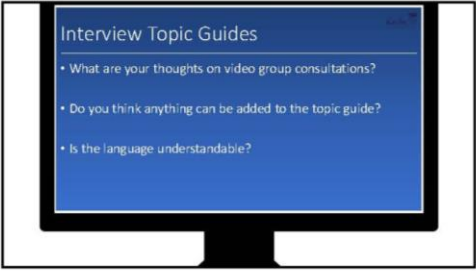
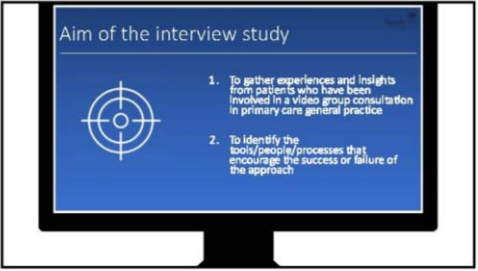
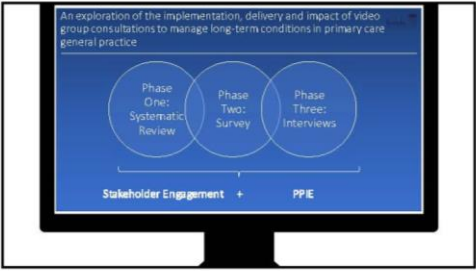
1. Was there any information for patients before they were invited to a VGC?
2. The need for the person running VGCs to know what a VGC is
3. Clinician perspective is not necessarily the same as patient perspective
4. Is there any way of collecting hard data, such as use of appointments, after VGCs?
5. It would be valuable to not just have patient perceptions of VGCs, but patient responses
6. How comfortable patients feel to attend a VGC (group and remote) will be of central importance to patients
7. Did I give healthcare professionals an idea about what implementation and impact are, or is it what they assumed it to be?
8. Impact was present across all themes – e.g. patient with fuel and mileage issues – impacting on access to care
9. Explore the ‘hidden’ impacts of VGCs
10. What about weight watchers? Interesting that weight management was a noticeable group consultation model? Is there a link between these two?
11. VGCs are free – noticeable impact – offering a service which is accessible to a broader range of patients because it doesn’t incur a cost
12. Were patients offered F2F and a group consultation, or was it a VGC or nothing?
13. Multiple definitions of VGCs can be seen to be a weakness of the study as it dilutes the results, but it can also be a strength because if you are looking at lots of different ways in which group consultations is being defined and rolled out across different practices, it creates an opportunity to see what people like and don’t like – Can you do any comparison with this?
14. Can you expand from primary to primary/secondary care VGCs?

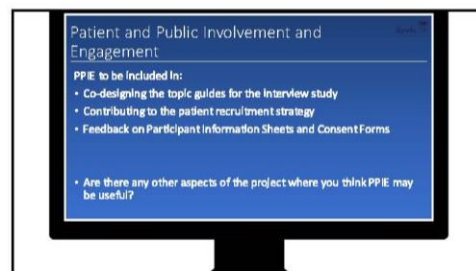
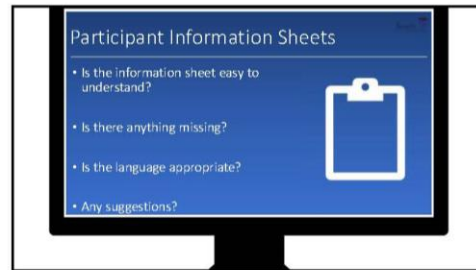
15. Costs of using a virtual approach in education programme reduce massively
16. Importance of clarity for a patient to be able to engage with a VGC – what exactly this group video is? Have I got to tell everyone my problems?
17. Having the 'right person' is essential to manage a VGC, and to gain the trust of patients
18. The fact there is no 'hard' data and it's just patients' words is a missed opportunity
19. Barriers to digital literacy and access is an important consideration
20. Opportunity to explore creative ways of group consultation
21. Facilitator helps patients to be comfortable in the virtual space
22. Does a consultation have to include a clinical component? There are many consultations that are completely free from any measurement of biometrics etc - e.g. management of joint pain. Is there any definition of consultation? Is it based on the Calgary-Cambridge Model?
23. What is a consultation model and what isn't it? Because in primary care there are additional roles e.g. physios, pharmacists, which may not consult in this way
24. Patients prefer NHS delivered services because they feel it is more invested in science and better quality – reputation and patient perception of the quality of what's being offered
25. Do you have the same number of patients in each consultation?
26. Support for patients to access a VGC is a really important issue
27. Is an 'implementation champion' feasible as a representative for patients as well as mediating for the professionals? Was there any indication who would take on these roles?
28. This PhD is creating more questions than it answers. Rather than answering these questions, it is more important to identify questions that need answering!

*Appendix 50: Semi-structured interview study – Patient and public involvement and engagement meeting (LINK group) (presentation)*

---







**Stakeholder Advisory Group (SAG) Agenda - Survey**  
**Questionnaire**

**Project Title: An exploration of the uptake and use of video group consultations in primary care general practice.**

**Date: 9<sup>th</sup> June 2021**

**Time: 18:00**

**Where?**

**Microsoft Teams**

**Checklist:**

- Virtual access through a laptop
- Recording software (additional 1 x iPad/tablet to backup recording)
- Access to Microsoft Teams

**Research Team:**

<b>Name:</b>	<b>Role:</b>
Eleanor Scott, PhD Student <b>(ES)</b>	Control of Presentation Icebreaker Presenting VGCs and PhD Whiteboard
Andrew Finney, Lead Supervisor <b>(AF)</b>	Chair Facilitation of SAG through introduction, discussion and final thoughts In charge of recordings and timing
Laura Swaithe, Supervisor <b>(LS)</b>	Field note keeper - Engagement and overall dynamics of the group Running of Teams Chat

**External Attendees:**

Individuals with experience of delivering and implementing video group consultations in general practice primary care and/or individuals working in primary care general practice	
S – Stakeholder identifier	
Name and Role:	
S1	Retired GP, Stoke-on-Trent Clinical Commissioning Group, Academic
S2	Advanced Nurse Practitioner
S3	Advanced Nurse Practitioner, PCN Nurse Lead
S4	Lead Nurse for AF
S5	PPIE Representative
S6	PPIE Manager

S7	General Practice Nurse, Topol Fellow
S8	Nurse, Deputy Medical Director within NHS England, Academic
S9	General Practice Nurse, Lead for Digital Upskilling for GPNs

### Running Agenda:

Time and Presentation Prompts		Schedule of Events and Topic Guide
<b>OPEN POWERPOINT PRESENTATION (ES)</b>		
<b>18:00 (10 mins)</b>	(AF)	<b>Introduction and Housekeeping's:</b> <ul style="list-style-type: none"> <li>• Welcoming and thanks to attendees for participating in this SAG by Chair.</li> <li>• Introduction of the lead researcher and supervisory team and their roles.</li> <li>• Introduction of participants and their roles.</li> <li>• Explain timings of meetings.</li> <li>• Explain purpose of meeting - Inform the survey to gather experiences of healthcare professionals in primary care general practice with regards to video group consultations.</li> <li>• Provide an opportunity for participants to state problems with internet access/platform use and provide information on how to resolve this.</li> <li>• Explain this meeting will be recorded virtually, stating when the recorder is in use.</li> </ul>
<b>START RECORDING (LS)</b>		
<b>18:10 Warm Up/ Ice Breaker (5 – 10 mins)</b>	(ES)	<b>Warm Up/ Ice Breaker</b> <ul style="list-style-type: none"> <li>• Who has heard about video group consultations being used in primary care?</li> <li>• Who has been involved in a video group consultation?</li> <li>• Would you like to know more about video group consultations?</li> <li>• Are you considering using video group consultations in the future?</li> </ul> <p>(Chat hand function)</p>
<b>18:20 (10 mins)</b>	(ES)	<b>Present the video group consultation model in primary care and the aim of the PhD, explaining the following:</b> <ul style="list-style-type: none"> <li>• Overview of the video group consultation model</li> <li>• Relevance of a digital approach to care</li> <li>• Importance of thesis/further research</li> </ul>

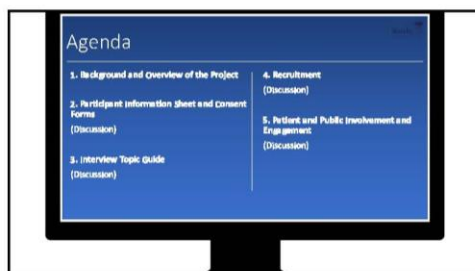
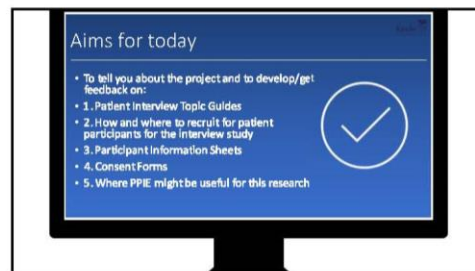


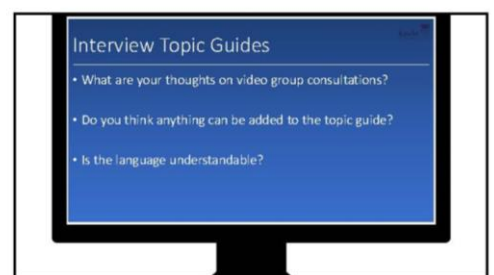
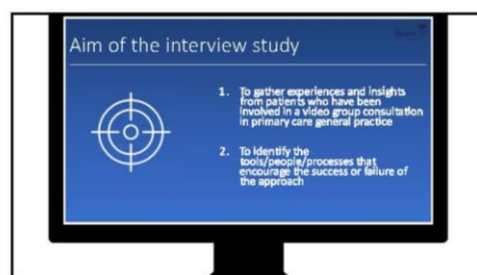
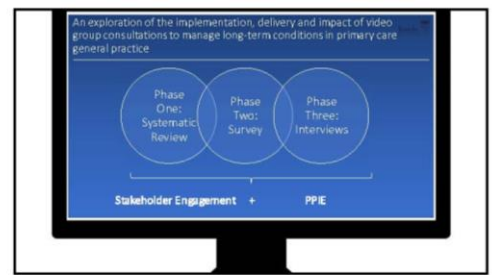
<b>18:30</b>  <b>Themes for Discussion</b>	<b>(AF)</b> <b>)</b>	<b>Themes for Discussion</b>  The main focus of this SAG is to: <ul style="list-style-type: none"> <li>• Inform the survey to gather experiences of healthcare professionals in primary care general practice with regards to video group consultations.</li> <li>• Chair to advise participants to write down any thoughts to facilitate further discussion in the meeting.</li> </ul>
<b>SHARE MICROSOFT WHITEBOARD (ES)</b>		
<b>(45 mins)</b>	<b>(AF)</b> <b>)</b>	<div> 1. <b>ROLES ASSOCIATED WITH VGCs</b> </div> <div> <b>Roles Associated with VGC</b>  Have you been involved in a VGC? If so, what is your role? And, why were you involved?  <b>Facilitation</b>  Who is involved in facilitating the clinic?  Do you offer the patients a choice in consultation? Either face-to-face, group or video group? How are they advertised? </div> <div> 2. <b>IMPLEMENTATION/DELIVERY</b> </div> <div> <b>Implementation of VGC</b>  How have VGC been implemented into practice?  <b>Patient groups/Conditions</b>  What conditions/patient's groups are currently being managed by this approach? Is it the same condition in one session? </div> <div> 3. <b>PRACTICALITIES</b> </div> <div> <b>Workload</b>  What time commitments are involved? Does documentation differ? </div> <div> <b>Platforms used</b>  What platforms are being used to facilitate a VGC? </div> <div> <b>Skills/Training</b>  What skills/training do you feel are necessary to carry out a VGC? </div> <div> 4. <b>ENABLERS AND BARRIERS</b> </div> <div> <b>Issues associated with VGC</b>  Are there any issues in delivering VGC? </div> <div> <b>Benefits associated with VGC</b> </div>

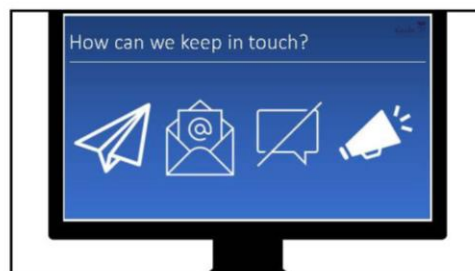
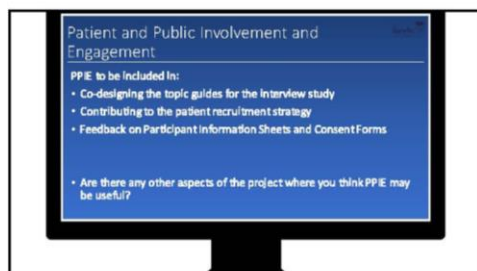
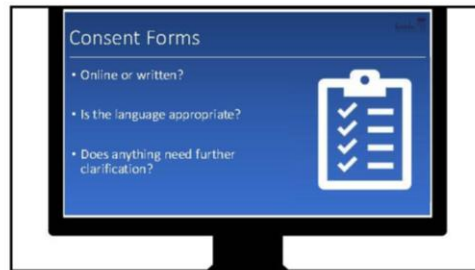
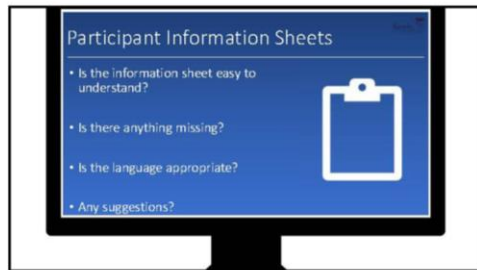
		Have you seen any benefits on clinical outcomes? <b>Process outcomes</b>
<b>CLOSE MICROSOFT WHITEBOARD (ES)</b>		
<b>OPEN SURVEY (ES)</b>		
<b>19:15</b>	<b>(ES)</b>	Show draft survey to the SAG for opinions and thoughts
<b>CLOSE SURVEY (ES)</b>		
<b>19:30</b>	<b>(AF)</b>	Chair will thank the participants for attending, stating the recording will be stopped
<b>STOP RECORDING (LS)</b>		
<b>CLOSE POWERPOINT PRESENTATION (ES)</b>		
<b>Debrief</b>	<b>(ALL)</b>	<p>After the videoconference has finished, the researcher and supervisory team will reflect on the insights and experiences provided within the meeting.</p> <p>Field notes will be recorded, in reference to:</p> <ul style="list-style-type: none"> <li>• Length of meeting and each session</li> <li>• Clarity on the delivery of presentation</li> <li>• Engagement of participants</li> <li>• Virtual Environment</li> <li>• Allocated Roles</li> </ul>

*Appendix 52: Semi-structured interview study – Patient and public involvement and engagement meeting (RUG group) (presentation)*

---







## **PPIE (Patient and Public Involvement and Engagement) Meeting Notes**

### **Considerations for Topic Guides**

- Inclusion of age in the interview, maybe as a part of the pre-questionnaire or at the beginning of the interview
- Inclusion of a deprivation measure/socio-economic background – asking if the participant is employed or unemployed, full time or part time work, and what type of work do they do? - this is to enhance any links that may be formed with regards to digital access and deprivation measures
- Consideration of young people and mental health – will this be an area I will be focusing on? It might be a sensitive subject
- Inclusion of ethnicity as a participant defining factor in the interviews
- Digital exclusion? - I will be only including participants in the interviews that have been involved in video group consultations, so concerns regarding digital exclusion is reduced as participants will have already been exposed to using online technologies.
- What about participants which potentially may have communication difficulties? Will a carer or advocate be able to be present? VGC have demonstrated use with learning disabilities – how am I able to represent these groups?

### **Recommendations for Recruitment**

- Practice Manager to send a text message to patients that have been involved in video group consultations
- Personal Recommendations from GPs
- Not flyers in GP receptions as patients are not attending the surgery as often as before the pandemic
- Charities – SCOPE, ROS, Venus Arthritis
- NIHR People in Research

### **Suggestions for Participant Information Sheet**

- Use of the word surgery – change to GP surgery or health centre
- Consider using clinicians/healthcare professionals, rather than general practice staff
- The interview will last no longer than or up to 30 minutes, which gives the opportunity for participants take as much time as they like to complete the interview

- Reduce sections regarding data protection and confidentiality – use plain English
- Consider adding section on impact for patients regarding distribution of results and the impact on services
- Reword implementation
- Instead of 'we will aim to distribute the results', state 'the results will be distributed'
- Consider length of participant information – are any sections duplicated? Can sections be condensed?
- Inclusion of images to break down the text
- Provide an option for participants who wish to find out more detail instead of trying to include everything in the participant information sheet
- Consider rewording section about withdrawal from the study – bullet point each route of withdrawal using plain English
- 'Withdrawal from the study will not be advised due to the anonymity of the results'
- How withdrawal will have an impact on my PhD
- Reconsider sentences being in bold

#### **Suggestions for Consent Forms**

- Use online and written consent forms to give participants the option of both
- Maybe prioritise only consent forms but give participants the option if they would like a paper copy, please contact the researcher
- Just 'agree' and 'disagree'
- Give participants the options to go back to the consent form and fill it in later

#### **Recommendations for PPIE Input**

- Meeting after interviews to feedback results and use PPIE representatives to help to understanding the data
- Acknowledgement – virtual patient advisory group

## **Cross-Sectional Survey - SAG Field Notes**

General introductions and icebreaker

ES presented background to the project, recent evidence and an overview of the PhD

ES presented the themes for discussion

AF chaired the group discussion

Overall comments on the four key discussion points: roles associated with video group consultations; implementation and delivery; practicalities of the approach; enablers and barriers.

AF asked the group to describe the roles performed in a video group consultation. (S7) stated they took the role of the clinician, and the receptionist is the facilitator who both had training for the role. (S7) described that the practice offers patients a choice of consultation and is advertised primarily on social media. They have been run for patients with asthma and cancer and were usually ran in a group setting before using video group consultations. This has demonstrated a different demographic to face-to-face appointments.

(S8) related to her experience commissioning group consultations due to the benefits in primary care, in measuring process measures rather than impact and outcome measures. (S8) stresses the importance of group consultations being person centred, to enable behaviour change rather than focusing completely on QOF outcomes. (S8) has stated the problems they have faced in completing an evaluation of group consultations, in that clinicians don't have time to participate.

(S3) was planning to run a series of group consultations before the pandemic hit, which meant they had to run video group consultations instead. (S3) has been trained in video group consultations by the national trainer provider for video group consultations. (S3) has run sessions on no-carb diet and dietary advice and improvement of Hba1c. (S3) stated there was a lack of support at practice-level and therefore had to get facilitators from a public health collaboration, which also included patients with long-term conditions, and were not trained in video group consultations. There were difficulties in getting patients recruited, finding patients preferred face-to-face due to the issues with technology. Due to the lack of structure in the practice, it was difficult to recruit patients, i.e., text message, email. (S3) stated they were only allowed to use Teams rather than Zoom due to the confidential nature of the consultation but recognised the benefits of both. Video group consultations have now been paused in the practice due to the pandemic, and the need to use staff for COVID clinics.

AF agreed with (S3) points, stating it is considered the last initiative in, and is the first out.



AF asked (S3) about the roles in video group consultations, in which it was described as completely nurse led. (S3) stated that there has been a large reduction in HbA1c since using video group consultations, but AF questions where the other components of the diabetes review were included. (S3) stated that patients were invited to a video group consultation if they were identified as high risk or had a lack of control over their HbA1c, and therefore promoted a low-carb diet. Video group consultations were used as a way to educate patients about ways to manage diabetes rather than completely relying on medication.

(S3) elaborated the point regarding recruitment of patients to use video group consultations, stating recruitment remains terribly slow. Face-to-face will also be offered as an alternative. (S3) stated the need to offer video group consultations as PCN level rather than practice-level due to the small uptake in patients.

(S7) agreed with (S3) in that practice managers cannot see the initial gains, and it's an invest-to-save approach.

(S1) stated they can bring context to the discussion, in that over the last three years pushing closed Facebook groups in which they did live streams on long-term conditions, including AF, cardiac rehabilitation and MS. (S1) argues this a type of video group consultation. (S1) stated they have also run public webinars in which is likened to video group consultations. Although, the clinicians presented through an agenda, the patients had a lot of time to ask questions. These webinars would be shared on YouTube.

(S1) highlighted the importance of information and clinical governance, informed consent and disclaimers. (S1) stated they have offered a variety of forms of video group consultations including closed Facebook group and live webinars.

(S9) stated the importance of ensuring that video group consultations are not too time-consuming for the practices and would be beneficial to think of ways of which we can run video group consultations without all the input. There is not the spare staff in general practice. (S9) stated video group consultations could be effective for newly diagnosed patients as it is information-providing, rather than having a bespoke clinic appointment. This is due to do confidentiality issues, with patients sharing weight, blood pressure etc. Video group consultations should be a way to give out information to patients, to prevent problems with long-term conditions, pitched at PCN level to ensure a wider variety of patients.

(S4) stated their role as an arrhythmia nurse specialist, who has not used video group consultations before. (S4) stated a similar approach in secondary care, working well with conditions such as AF, as a means of information giving. They are not to replace face-to-face consultations but can be used as an alternative, which would lead to fewer face-to-face appointments in the future. This is a point for evaluation.

(S2) states as an ANP, video group consultations can be used in substance misuse, in which they can be beneficial to clinicians with regards to the safety aspects. (S2) recognises the benefits of video

group consultations over the last 12 months, but questions whether this is the desperateness of the NHS to see patients, or are the patients desperate to come and see a clinician? Will there be a change when COVID restrictions are lifted, in that patients will want an appointment face-to-face rather than virtually? (S2) raises the importance of time of day in hosting a video group consultation, with patients working in the day and clinicians not available in the evenings. This impacts roles and demands on staff, so questions how practical is this approach? Also, is 90 mins enough time to see and include all patients? Is this too much time for patients? Is it time-sensitive?

(S2) stated this may be the best time for the NHS to look at video group consultations, but is it right time for the patient now?

AF agrees with (S2) and (S4) in that there can be many positives to video group consultations, but one of the main issues is how video group consultations are defined as everyone has a different view of them and developing them. It is hard to get a hard definition of video group consultations, but do we really need one? Do they need to be fluid and flexible to meet individual practices? Although, it is very difficult when there are so many video group consultation models and definitions.

(S5) gave a lay members perspective in which the concept is totally new. (S5) has encountered video group consultations with physio, but this was a treatment programme. (S5) questions the technology around video group consultations, due to age and digital literacy. (S5) thinks that video group consultations will be beneficial for younger participants but not for elderly patients, in which this age group suffers the most with long-term condition diagnosis and management. (S5) raises the issue of confidentiality and not sharing personal and individual medical data with other members of the group, due to sensitivities around these results.

(S5) raised an important point that how in a diabetes video group consultation - 'how would they check my feet over?' There could be benefit for newly diagnosed patients, in providing patients with lifestyle and dietary advice, but that may not save clinicians time and creating a larger workload. It is beneficial to the patient, as they have more time to ask questions and they can benefit from peer-to-peer support.

(S5) reflects on their involvement in Facebook groups, with no clinician present. It is made known that there are many myths that are circulated in these groups, which are not controlled. This can have a negative impact on health outcomes due to peer-to-peer influences.

AF asked LS to check the chat for any feedback from the participants. LS noted that (S3) had stated the power of patient experience and peer-to-peer education had a benefit in running video group consultations. Feedback from (S3) noted that patients who had attended a video group consultation were happy to share their medical and personal information. LS noted that (S7) stated that there are 3 student nurses that are learning about video group consultations as a way of future proofing the NHS and general practice nursing. LS questions (S7) stating that if they had experience of face-to-face appointments, did they

have to adapt their role when converting to video group consultations. Did it change the skill or the approach to consultation?

(S7) has apprehensions when first moving to a video approach but once started, they forgot that they were not face-to-face with the patients, and interaction resumed as normal. This applied equally when the patient was having a one-to-one discussion in the group meeting.

AF asks (S7) and (S3) about their experiences of delivering video group consultations on diabetes, and questions who does the foot check for these patients? (S7) states the patient can get their feet checked when having their bloods taken, by a healthcare assistant. This is situated within the general practice. (S5) responded to this stating that this system would not work in their practice as bloods are not taken within the surgery. (S7) responded in that the primary role of the healthcare is to complete foot checks, and whilst the patient is there, the practice does the bloods also.

(S9) highlights that video group consultations are much better than telephone consultations due to the benefits of video. However, the importance of safeguarding and information is paramount due to small localities and patient sensitivities.

LS asks (S1) around data management and ownership in closed Facebook groups, due to impressions that once data is posted onto Facebook, Facebook now owns it. (S1) highlights that this is the case which is why only generic information is posted on closed Facebook sites. (S4) states that if patients wish to raise specific clinical questions, this is not discussed in a group and a face-to-face appointment is offered to them.

AF raised the point surrounding the use of headphones in a video group consultation due to confidentiality issue. (S9) states the clinician wears headphones, but questions whether the patient must wear them due to confidentiality breaches in their own home or other patients' information being shared in other homes. Personal information should only be passed on when it is necessary.

AF asks (S3) to elaborate on issues surrounding confidentiality when they have run video group consultations. (S3) states that in terms of foot checks, the podiatrist completes the foot check for the diabetes review and not done in the practice. With regards to confidentiality, (S3) stated that each patient had a copy of their results and if they were happy the patient would be able to share this information for discussion. This was not led by the clinician.

(S5) highlights a problem with ensuring confidentiality in a video group consultation, as some patients may want to sit with a partner to discuss their condition, especially if the patient has problems retaining information or does not understand the clinician.

(S2) raises issues with cancer groups, in that even if headphones are worn and data is kept within the group, is there an issue with seeing other patients faces? Especially by other members of a patient's

household? Do faces need to be shown for every consultation?  
Developing a secure area can be very challenging in busy households.

AF asks ES if there any other further questions that needed to be addressed. ES raises issues with technological platforms and how this is delivered. (S7) states Team is used for their patients, but Zoom will also be available soon. (S7) states that the patients have had no trouble in using Teams, as patients are now more familiar in using this technology for everyday activities.

ES raises the question around QOF and how payment systems work with video group consultations. (S7) states that QOF was abandoned last year, so did not apply. However, since starting again, other technologies are being used to get the requirements for QOF prior to the video group consultation. (S7) states that video group consultations are not QOF exercises.

(S3) states that video group consultations were run on Teams. In terms of QOF, it is more difficult with a video group consultation. Patients may need both a face-to-face consultation as well as a video group consultation to meet the requirements for QOF.

(S1) stated that Zoom was used, as at the time 15 participants could be on the screen at one time and with MS Team only 4 individuals. AF asks (S1) what conditions have been covered using closed Facebook groups in which (S1) responds with AF, respiratory, asthma, COPD and blood pressure. (S4) states in secondary care, MS Teams is used for cardiac rehabilitation and multiple sclerosis. Teams was favoured in this instance as it was deemed to be more data secure.

AF stated that confidentiality, safeguarding and information governance have been central to this discussion.

(S3) stated that in their practice they have focused on diabetes annual reviews, Hba1c as an aspect of the review and low carb diet. But all video group consultations were stopped in favour of COVID clinics.

(S7) states they have run video group consultations for asthma and childhood asthma but is hoping to expand this to cover learning disabilities, dementia, post-natal women and contraception.

AF asks (S7) about barriers and successes to implementation, in which it is described the main issues are due to practice managers and clinical directors. The amount of work that is required in the initial stages is paramount and this is not valued or recognised. The issue is not to do with support, its recognition of the time needed to start running video group consultations. (S7) did not have the time themselves and the facilitator did not have the time to be released from the reception.

AF asks (S1) about how we overcome these barriers. (S1) states that skills are an important issue due to digital exclusion. Due to ALS learning sets, there has been a rise in nurses using video technology. There are issues in that video group consultations could potentially exclude anyone over the age of 50. Digital exclusion is paramount in understanding the future of video group consultations.

(S9) states that QOF can be met by using digital technologies such as Accurx. Video group consultations can therefore be used to help patients self-manage their condition and for educational purposes.

(S8) states that issues surrounding practicalities of video group consultations is familiar from their research, in terms of sensitivities around data. (S8) states patients tend to share their biometric data anyways, such as in the surgery waiting room, but clinicians feel apprehensive about sharing this data due to subsequent retributions.

(S2) states that are video group consultations QOF driven, or patient group driven? What about patient conditions that are not QOF driven I.e. chronic back pain, depression?

(S2) highlights whether video group consultations lose the peer-to-peer quality which would have been achieved face to face, as the patients do not necessarily know who is in the room with them?

AF related to their experiences of a patient suffering with diabetes for five years and did not know what a HbA1c was until attending a group consultation, even though the patient had been seeing a clinician for the last five years. This demonstrates the value of peer-to-peer support.

(S5) questions whether the power remains with the patient or the clinician, but it is important not to generalise patients, in that it will not benefit all patients. Every patient is different. Video group consultations may be beneficial as a complementary tool but cannot be viewed in a totality. The value is in choice.

ES presented the survey using a QR code which can be scanned on the screen. Participants are advised to run through the survey, only commenting test, to ensure the flow and questions are suitable for the clinicians responding to the survey.

Participants gave feedback on the survey.

AF thanked all participants on behalf of ES and LS.



**Getting Your Views on...  
Video Group Consultations in Primary Care General Practice**

**When? - 9th June 2021**

**Time - 18:00**

**Where? - Microsoft Teams**

**Why?**

As a team, we are hosting a stakeholder advisory group as we are really interested in hearing your views on the set-up and delivery of care using a virtual group setting.

We have identified the role of stakeholders to have a key influence in informing and developing this research, aiming to gather a multi-disciplinary group, pertinent to primary care general practice and the set-up of video group consultations. This bringing together of expertise to discuss and generate new ideas will help to inform the survey questionnaire, focusing on uptake and use of video group consultations, essential for the next steps in our research.

It has been identified that successful set-up of group consultations in primary care requires clinical champions, trainers and facilitators; all roles which will be represented in this stakeholder advisory group.

Therefore, we would like you to attend a meeting which will be held virtually on Microsoft Teams, lasting no longer than 90 minutes (feel free to leave before this) to facilitate time for presentation and discussion.

We would greatly appreciate your expertise and time in helping to develop this research study.

Kind regards,

X

Eleanor Scott

**RSVP – Please can you send an expression of interest to**  
**e.r.scott@keele.ac.uk**