Article title: Supporting people with pain-related distress in primary care consultations: a qualitative study

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Abstract

Background

Low mood and distress are commonly reported with by people who have persistent musculoskeletal pain and may be labelled as ‘depression’. It is important to understand how pain-related distress is conceptualised and managed in primary care consultations.

Aim

To explore understanding of pain-related distress and depression from the perspectives of people with persistent musculoskeletal (MSK) pain and general practitioners.

Design and Setting

Qualitative study with people with persistent pain and general practitioners, from different parts of the UK.

Methods

Semi-structured interviews were conducted remotely and data analysed thematically.

Results

Most participants described challenges distinguishing between distress and depression in the context of persistent pain but described strategies to make this distinction. Some people described how acceptance of their situation was key and involved optimism about the future and creation of a new identity. Some GPs expressed ‘therapeutic nihilism’, with uncertainty about the cause of pain and how to manage people with both pain and distress in primary care consultations, whilst GPs who could identify and build on optimism with patients described how to help the patient to move forwards.

Conclusions

This study offers a framework for the primary care consultation with patients presenting with pain-related distress. GPs should recognize the impact of pain on the patient and support the person come to terms with their pain, explore how the person feels about the future, encourage optimism, and support self-management strategies.

Keywords

Persistent pain, distress, general practitioner, the consultation, depression, people with pain

How this fits in

Previous research has mainly focused on the impact of persistent pain on people's lives, and the challenge of living with persistent pain. People with pain are often distressed, and this can be difficult for both patient and doctor to distinguish from depression. This study focuses on how general practitioners work with, and support, people with pain, endeavour to distinguish between pain-related distress and depression and achieve successful outcomes to the primary care consultation.

Introduction

Musculoskeletal (MSK) conditions account for 30.5% of all years lived with disability in the UK, and can have a significant impact upon wellbeing, with prevalence of depression estimated at three to four times greater than that of the general population.[1-3] Distress, and depression have been found to predict the transition to persistent pain.[4-6]

The majority of people with persistent pain and mental health symptoms are managed in primary care[7] and a central role for the GP is to respond to the patient's concern and identify and manage a clinical disorder.[8,9] GPs may find making the distinction between distress and depression difficult,[10] and it is unclear how general practitioners work with, and support, people with pain, and try to distinguish between pain-related distress and depression. The distinction between pain-related distress and depression is particularly important because of the conflicting messages received by primary care practitioners, to better detect mental health problems, especially depression,[9,11] while avoiding over-medicalizing distress and thus over-treatment, especially with anti-depressants.[12,13]

People living with persistent pain regard the psychological and social needs arising from their health problems to be at least as important as managing the pain itself.[14] Patients may consider their emotional experience to be different to their perceived notions of 'actual' depression or mental illness.[15]

To add to this complexity, pain-related distress is qualitatively different from clinical depression,[16] and current referral pathways and available interventions are sub-optimal for people with persistent pain who are distressed.[17] This may result in people with pain-related distress receiving unacceptable or inappropriate interventions.

The overall aims of this qualitative study were to explore how people with pain understand pain-related distress and how this is managed in primary care. The interviews explored the management offered for pain and distress and interventions which people with pain have found to be helpful. We aimed to explore perspectives and experiences of GPs managing and supporting people with persistent pain, how they distinguish between pain-related distress and depression, and to develop implications for successful outcomes to primary care consultations for people with pain-related distress.

Method

The study employed a qualitative methodology, with semi-structured interviews to explore the perspectives of people with persistent musculoskeletal (MSK) pain, and general practitioners (GPs) in order to understand and manage pain-related distress.

Patient and public involvement was integral to this study, with a patient advisory group (PAG) contributing to study design, public-facing documents, and analysis of findings. A GP stakeholder group contributed to the study design. Appropriate qualitative reporting guidelines are used.[18]

Recruitment and participants

People with persistent pain were recruited using four methods; advertisements in public places (e.g., pharmacies and shops), social media posts ('Twitter' and 'Facebook'), local radio, and identifying people with pain through general practice registers (searched by practice staff, supported by clinical research networks – CRNs). This allowed us to use both convenience (recruitment using advertisements) and purposive sampling (when recruited through general practice. General Practitioners were recruited using social media and professional networks, 'snowballing',[19] (convenience sampling) as well as through local CRNs in Wessex, Kent, Surrey and Sussex, using purposive sampling.

When potential participants (either people with pain or GPs) contacted the research team, eligibility was checked, and they were sent an information sheet and consent form. Once a completed consent form was received by the research team, the interview was arranged.

Data generation

Interviews with all participants were conducted via telephone or using a virtual software (such as 'Microsoft Teams'), as preferred by participants. Informed consent was reconfirmed and recorded at the start of the interview. Interviews were conducted by NS (PhD, background in nursing, health services researcher, female) and HB (PhD, health services researcher, female). Both HB and NS are experienced researchers with qualitative methods expertise. They had no prior relationship with the interview participants, who were given 'Participant Information leaflets' about the study prior to consenting to participate.

Demographic data (including age range, gender, ethnicity, area lived in, employment, and educational attainment), were collected at the start of the interview with people with pain. GPs were asked to indicate age-range, gender, ethnicity, area worked in, number of sessions worked clinically, years of experience as a GP and any area of expertise. These data were collected to contextualise the data and support description of the samples.

The interview topic guides were developed by the research team, in collaboration with the study PAG, and the GP stakeholders. The topic guides were modified iteratively as data generation and analysis progressed and allowed exploration of perceived differences in pain-related distress and depression in people with persistent pain and language used by participants to describe pain-related distress. The interview schedules were used flexibly to allow unanticipated topics to be explored and modified iteratively as data generation and analysis progressed. An example of the topic guides is presented in **Supplementary Table 1**.

All interviews were digitally recorded (audio-only) and were transcribed verbatim by a professional transcription company. Field notes were made during and immediately after each interview. The audio-recordings were transcribed, and any identifiable information removed from the transcripts by the researchers NS and HB.

At the end of the interview, each participant was asked if they wished to receive a summary of the findings and/or publication(s) arising from the study. Participants were offered reimbursement for their time. A copy of the lay summary (based on initial analyses) was sent to those participants who requested it.

No further interviews were conducted with the participants. Transcripts were not sent to participants for their comments. Participants did not comment on the findings.

Data analysis

Transcripts were uploaded into a Qualitative Research Software (NVivo Version 11) to aid data organisation. Thematic analysis was conducted by the whole research team, using the principles of constant comparison.[20] Thematic analysis focuses on meaning across a dataset, allowing researchers to understand collective and shared experiences.[21,22] The analysis was conducted iteratively, using an inductive approach to data analysis, where coding and theme development were guided by the content of the data obtained.[22] NS initially coded and analysed all the transcripts, which were also analysed and coded by members of the entire research team involved in analysis, to ensure inter-coder reliability. [21,22] Having a research team with mixed professional backgrounds (Health Service researchers NS, HB & BS; Academic GPs CC-G, PL & MM; Academic psychologists AG & TP; patient co-investigator HJ) allowed robust discussion on data interpretation and increased trustworthiness of analysis.[23]

Each dataset (people with pain and GPs) was analysed separately before themes across the dataset were collated. A lay summary and analysis framework based on initial analysis were discussed at a PAG meeting, and at a preliminary stakeholder meeting with GPs, and their feedback was incorporated into further data generation and analysis. The research team continued with data collection and analysis until they were confident that no new meanings or themes could be identified from the transcripts, such that data saturation had been achieved.[24]

Results

Demographics

Twenty-one interviews were conducted with people with persistent pain and 21 with GPs. The demographics of people with pain and GPs are presented in **tables 1 and 2**. Mean duration of the interviews was around 50 minutes for both people with pain and GPs.

Insert table 1 and 2 here

Main themes

We developed three main themes focussed on ***'pain and distress are inter-linked'***, ***'being stuck'*** and ***'moving forwards'***. An over-arching thread of ***'recognising and dealing with uncertainty'*** under-pins all the themes.

Illustrative data are provided to support the analysis; data extracts are identified by participant number (P = people with pain; GP = general practitioner); self-disclosed gender, and age to provide contextual information.

Distress and pain are inter-linked

All participants reflected on how distress and pain are inseparable from each other. Distress was seen as a reaction to, and impact of, persistent pain.

Impact of pain

People with pain described the impact of pain on every aspect of their lives. They reported feeling overwhelmed by the pain, not being able to perform daily chores or pleasurable activities and becoming dependent upon others:

> *Yes, because just some days, I just feel like I can't even, you know do a load of laundry or cook dinner or, like simple things like that…* (P16/f/35)

Persistent pain and its consequences were felt to impact on mood:

> *If I have a bad day and all of it hurts, I can get quite upset. It does affect my mood. It irritates me that I can't cut my toenails properly and when I'm in the shower. Like I say, it's putting socks on and things like that. It just makes you so fed up.* (P12/f/45)

This impact of pain on patients' lives was recognised by GPs:

> *They have very restricted lives quite often, they are very limited, they become very deconditioned, they are often having others in the family playing a caring role, even children. And there's an overlap with fatigue and its quite severe emotional distress and they know we can't make it better…* (GP15/m/60)

Uncertainty

Invisibility of pain experienced was felt to add to distress and the fear of not being believed, and thus add to the impact of the pain on relationships, including with health care professionals:

> *It's so frustrating because you think are people just thinking I'm making it up. So, I suppose you know, the big aspect is I don't do much at all.* (P10/f/48)

> *And that part is the hardest part, not just the fact you're going through it, but that there's nobody more willing to listen to you about it.* (P4/f/39)

People with pain also expressed uncertainty about the future, whether the pain would continue and if recovery would ever be possible:

> *He [GP- during consultation] left me one long thought that as you get older it will get worse, so what I've been suffering, the increasing intensity and frequency over the last 20 years, will not stop, it's going to carry on and [yeah]*

> *the frightening thing is I don’t know if I’ll get to the stage where I begin to lose control over what I do.* (P9/m/71)

Pain, distress and depression

Most participants described a cyclical and interactive relationship between pain and distress:

> *There are people who unfortunately have a debilitating condition in which pain is an issue and if pain isn’t controlled then you go down this downward spiral of pain is not controlled, it makes your mood worse, which again will make your pain worse and then you kind of end up in a black hole where you’ve got two problems, pain, and a mood disorder… so it’s kind of like what came first, the chicken or the egg.* (GP5/f/36)

Some GPs suggested that there was a linear relationship between distress and depression, offering a ‘window of opportunity’ to intervene:

> *So, you’ve got a pain, you’re fearful about what it is, it’s not going away so you’re worrying about the future and therefore that causes distress. And if that’s not addressed quick enough then it becomes depression because it’s not been resolved.* (GP10/f/60)

Some people with pain recognised that they might have an underlying vulnerability to distress and depression:

> *Well, I think that it’s taken some time to kind of work out, because I’ve always had poor mental health, I’ve had chronic pain since my mid to late twenties. The depression was already around before then, so you have to kind of unpick what is causing the depression or exacerbating the depression.* (P11/m/55)

GPs described how symptoms due to pain, distress and depression over-lapped, making it challenging for them to differentiate ‘depression’ and ‘distress’:

> *I don’t think there is a clear distinction. I think it’s a spectrum. So, distress merges into depression. There’s not a hard and fast distinction.* (GP20/m/65)

> *Often, it's more of a blurred situation and there may be elements of both… I think it’s just something as a practitioner you need to be aware of whenever you’re having these consultations so you make sure you can at least explore*

> *that as a possibility. I don't have a way of distinguishing specifically the two.* (GP2/m/45)

These uncertainties are then played out in the primary care consultation.

Being stuck

People with pain described 'getting stuck', seeing no way forward:

> *You don't see any way forward, there's no solution to the problem so obviously it's a mental reaction, you know, you are not in control because the pain is overriding everything so they (people with pain) want the pain to go away and they can't find a way of it going away, so they become distressed and depressed with it as well.* (P5/m/62)

Whilst some GPs conceptualised pain-related distress as a medical disorder needing treatment, others suggested that distress is a normal response to pain. Many GPs, however, expressed ideas of 'therapeutic nihilism', with limited options available to them to manage patients with persistent pain and distress:

> *I think the problem there isn't a lot that we can do really, so apart from making sure that you know people have had all the tests they've meant to have had, for things that we can fix, making sure they've been referred to the pain clinic, and that we're trying appropriate medications, thinking about their mental health, there isn't a lot that we can do. And I think you know in that way we kind of quite similar maybe to the patients, this condition as well, there's not a lot they can do to make things better*. (GP13/m/41)

GPs recognised that patients could be dissatisfied with consultations, which in turn led to the GP feeling frustrated:

> *And I guess with if we're talking about pain or chronic pain…. they want their pain to go away and that's not always possible with chronic pain at the moment, let's say. And so, we end up kind of having this conversation that doesn't go anywhere because both parties are probably sort of quite dissatisfied of where, there's not much progress actually made. And what happens essentially is they probably will go to another GP, for example, try their luck and the same story starts again. So yes, this is quite frustrating, I'd say at times.* (GP8/m/44)

Some people with pain reported limited expectations of what could be done to help them manage their pain and deal with their distress:

> *... I think the doctors have sort of given me everything they can. Chronic pain* [clinic] *has said they've done as much as they've can. So, I've gone through all their programmes and stuff like that, so it's just a case of they just check up on my meds and things like that. So, there's nothing much else.* (P10/f/48)

Moving forwards

Being believed

Patients contrasted experiences of being dismissed by GPs, more positive consultations which included feeling that they were listened to and believed by a GP who they trusted:

> *I felt brushed off by my GP, he didn't have any other solutions other than giving me drugs which he knows I don't like.* (P17/f/74)

> *Well, my GP is good she does really understand, she knows how, she's been with me for the last few years, so she understands. But I can understand… you can't do miracles, I understand that…* (P20/f/59)

GPs understood patients' desires to be heard and believed, and illustrated How listening could be used as one of the strategies to manage these patients:

> *I think kind of explaining to the patient that you can see the impact it's having on them and that you know you believe them, that they've got this pain and it's severe and it's not getting better, I think that helps, at least you care…* (GP13/m/41)

The importance of being treated as a person, with empathy, was highlighted, along with discussing and sharing uncertainties:

> *If you speak to people and they're sympathetic to you, it is a help [mmm] you know but I appreciate that not everyone would have that* (P5/m/68)

GPs described how they needed to work with the patient to unpick these uncertainties and deal with their own in order to move on:

> *'I think obviously when we talk to the patient if they just say that, if they're fixated just on the pain and the body so that's a primary symptom, then I find that more a sort of distress with the chronic pain. If they tell me that there's other symptoms you know they've got poor appetite, poor energy, poor concentration, some of the symptoms, that will open the door for doing, you know looking at the PHQ9 and assessment for depression. Just really how they present…and I'm further questioning what other symptoms they allude to.'* (GP21/m/46)

Regaining control

Coming to terms with, or accepting, pain was seen as important by people with lived experience of pain:

> *... the way that I try and become more positive is just to carry on and get on with whatever it is. I suppose it makes me feel like I still accomplished whatever it was I was going to accomplish. (*P12/f/45)

GPs emphasised the importance of encouraging patients to accept the pain and subsequent distress in order to move forwards:

> *What most people would recognise as an acute stress reaction to something, because most of us, you know, something happens, yeah, we get upset about it, we get stressed about it or whatever, acutely, and then we kind of stabilise after a while and I wouldn't say we get used to it but you kind of… I don't know what term I should use, but your kind of just accept and then you move on, and it doesn't become so intrusive (*GP5/f/36)

People with pain described the need to be optimistic in order to deal with their current situation:

> *You know when you spiral down a little bit then you start thinking of all the negative reasons of everything. If you looked at the positive stuff, then perhaps you wouldn't be in that frame of mind. (P21/m/52)*

GPs highlighted the significance of fostering ‘optimism’ within patients living with persistent pain and distress, to open possibilities for people with pain to adapt to their current life situation, rather than focusing on what has been lost:

> *I try to be positive because I want them to be exercising and I want them to be doing what they can to help this rather than accepting this as some form of negative, debilitating problem that they’ve just got to take loads of pain relief.* (GP2/m/46)

People with pain described working on constructing a new identity which included accepting their pain, and giving a sense of restoring and adapting to a new life:

> *I still have, what do they call it when you have pain, the triggers, you know it (pain course) taught me to avoid the triggers, it taught me to deal with the triggers so when you get a really, really bad phase that you go through on how to deal with all of that psychologically and physically. So, I just have to live with it (pain) and do what I was taught to do, you know, and I thank goodness that I went on that course.* (P19/f/66)

Agreeing solutions

GPs emphasised the importance of having an established relationship with the patient:

> *I would say that’s the first and the most important thing and having continuity of care with the same doctor or the same clinician and not seeing a different person every time. It should be someone who really gets to know the patient and understands their point of view and the patient then, over time, gets to know and trust that doctor. I don’t think you can do it in one consultation.* (GP19/m/48)

People with pain stressed the need to work with *their* GP to develop and agree a management plan to deal with both pain and distress:

> *It’s only because I spoke to my GP recently and she was just like saying how was I and stuff and I was just talking about stuff and she said, ‘Right, you really need to be recommended to the mental*

> *health team, are you happy with that?' and I was like, 'Well yeah, I don't mind.'* (P10/f/48)

Key to moving forwards was trying to distinguish between distress and depression and plan management accordingly. Some GPs described how identifying a cause for low mood might help them to distinguish between distress and depression:

> *Distress is when I think you know there's something that's happened specifically and the distress or the emotional upset is related directly to that thing. Depression is more when it becomes more generalised, you feel you are not winning with every aspect of your life and everything is… and there may not be a specific reason for it and it's prolonged, you know, it goes on beyond what most people would recognise as an acute stress reaction to something.* (GP5/f/36)

Other GPs described how they based their management decisions on whether there was a previous history of depression:

> *…. I don't know whether they feel helpless and hopeless and that leads to clinical depression, or they have got a pre-existing low mood that makes their pain threshold low.* (GP6/m/38)

Some GPs said they considered severity of symptoms to be central to distinguishing between distress and depression in the context of pain. It was common for these GPs to mention the use of severity scales such as the PHQ-9 to help them make that disctinction.[25]

> *So that kind of usual like screening questions for depression really. And then if they said, oh, like, the answer to those questions was yes, then you can assess more and there are some scoring questionnaires we can use for depression if we want to, like the PHQ9*…(GP13/m/41)

Once this distinction was made, GPs described how they was more certain in offering support and negotiating a management plan:

> *I also use treatment as a way of differentiating whether something is becoming… is more of a longstanding problem or not, so if people are responding to the treatment and becoming more active, less distressed on the second occasion, that's more of an indication to me that this is something that can be treated. When people come back and it hasn't made a difference and they're saying that you know they haven't managed to change how they think or how they behave, then that's more of a trigger for me to be thinking oh this is something more of a depression.* (GP7/m/60)

The findings were discussed with our PAG and drawn together in Figure 1 which represents a framework to support the primary care consultation.

Insert figure 1 here

Discussion

Summary of findings

This study offers a framework (**Figure 1**) for the primary care consultation with patients presenting with pain-related distress: to hear the patient's story [26] to recognize, and empathise with, the impact of pain on the patient; to support the person towards coming to terms with their pain; to explore how the person feels about the future and encourage optimism and engagement with self-management strategies. Key to this is recognising and managing their own and their patient's uncertainty about the cause of pain and attempting to distinguish between distress and depression.

Strengths and limitations

This study presents comparative accounts of people with pain and GPs and has allowed us to develop a framework, with input from people with lived experience, which could help clinicians manage patients with persistent pain in the primary care consultation. Strengths of this study include multiple methods of recruitment of both people with pain and GPs across England; our multi-disciplinary research team, including a person with lived experience contributing to data analysis and large enough sample to achieve data saturation.[24] The study design, data analysis and framework were discussed with our PAG.

There was limited ethnic diversity within the sample of people with pain and over half had a degree. Recruitment using social media may have restricted participation to the study to people who are digitally literate; however, parallel recruitment using CRNs will have reduced the impact of this limitation. Half the GPs interviewed expressed an interest in the management MSK problems.

Comparison with existing literature

It has been established that GPs find it challenging to distinguish between emotional distress and depression,[10] and that patients recruited from primary care considered their emotional experience to be different to their perceived notions of 'actual' depression or mental illness.[15] Patients' understanding of their pain and associated distress often reflect the complexity of their lives and may not fit neatly into biomedical models,[15] and the authors suggest that here is a need to develop models of psychological symptoms that draw on patient experience and help them understand the nature of their experience, before acceptable management can be negotiated.[15] This complexity is exaggerated when distress is associated with pain, and it is this complexity that is brought to the primary care consultation.

The clinical encounter between the doctor and the patient has both tremendous practical and ideological importance for the discipline of primary care. In general practice, however, biomedical reductionism is impossible in the way that more general critiques of medical knowledge and practice suggest,[27] and the importance of 'patient-centred care' was recognised.[28] In addition, all primary care consultations entail some kind of uncertainty which patients and GPs need to negotiate and manage [29] in order to achieve a satisfactory outcome to the interaction

Implications for practice

We offer a framework that GPs can draw on to support them in consultations with people with persistent pain. This work is timely as there has been much criticism of the recent National Institute for Health and Care Excellence (NICE) guideline for assessment of chronic pain and management of chronic primary pain (NG193).[30] Whilst the guideline highlights the importance of patient-centred care and shared-decision-making, little advice about how to do this was included, and the reduction in management options has been highlighted, with the suggestion that it leaves GPs impotent.[31] Indeed, the Faculty of Pain Medicine (Royal College of Anaesthetists) outline the risks associated with this guideline,[32,33] including reduction of medication options and decommissioning of pain clinics. The challenge is that these recommendations and possible consequences come at a time of unprecedented workload in primary care.[34]

This guideline does, however, stress that patients should be assessed meaningfully to develop a more constructive shared understanding of how their pain experience is shaped. Patients need to be given time to tell their stories and be partners in their care. Time spent with a GP who they know, who listens to and believes them will avoid frustration on both sides and enable more productive consultations. Of key importance is that both the GP and person with pain identify distress and distinguish this from a depressive illness. Fostering optimism and looking forwards can be achieved in the context of a trusting GP-patient relationship.

The NICE recommendations play to the strengths of primary care practice, and we hope our framework, developed with our PAG, will support GPs in managing this group of patients, leading to improved satisfaction for both GPs and patients.

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Ethical approval

The study was approved by Southeast Scotland Research Ethics Committee (IRAS ID: 291138) and Keele University Ethics committee (MH-200129).

Provenance

Freely submitted, externally peer reviewed

Authorship statement

TP, AG, HJ and CC-G designed this qualitative study with input from the PAG.
NS and HB conducted data generation and initial analysis.
CC-G, NS, TP and AG drafted the manuscript. All authors commented on drafts of the manuscript.

Competing interests

No conflict of interests.

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Table 1: Demographic characteristics of people with pain

Participant number	**Recruitment through M/GP list/SB**	**Gender**	**Age** (years)	**Ethnicity**	**Education status**	**Area**	**Work status**	**Condition diagnosed with/ Reasons for persistent pain**	**Number of years living with persistent pain**
P1	M	F	74	White British	Degree (teaching)	Rural	Retired	Osteoarthritis (OA)	> 25
P2	M	F	45	European -Italian	Doctorate	Rural	FT	Rheumatoid Arthritis (RA)	> 20
P3	M	F	55	African British	Postgraduate	Rural	FT	OA	> 20
P4	SB	F	39	White British	Degree	Rural	Retired	Fibromyalgia + other types of Arthritis	20
P5	M	M	62	White British	A-levels + Vocational training	Urban	Retired	Back pain & Sciatica	> 20
P6	M	M	42	South Asian	Degree	Rural	FT	Back pain & Sciatica	6
P7	M	F	40	South Asian	Doctorate	Rural	No	Back pain	10
P8	M	F	50	White British	Postgraduate	Inner city	FT	Fibromyalgia + calcification on bones, bone spurs	≥10 years (some pain since childhood)
P9	M	M	71	White British	A-levels + Vocational training	Urban	Retired	OA	> 20
P10	SB	F	48	White British	Degree	Rural	No	Fibromyalgia	10
P11	M	M	55	White British	A-levels + Vocational training	Sub-urban	FT	Arthritis associated with Cerebral Palsy	> 25
P12	M	F	45	White British	Postgraduate	Semi-rural	FT	Back & Leg pain + OA (shoulder)	>5
P13	M	F	60	White British	A-levels	Rural	NSFW	Systemic Lupus Erythematosus, Myositis, RA, Back pain & Sciatica	17
P14	M	M	68	White British	A-levels	Rural	NSFW	Right Hip pain (post-accident bone injury)	> 2
P15	GP list	F	56	White British	NVQ level 4	Urban	PT	Fibromyalgia, OA in various parts of the body, Back pain & Diverticulitis	5
P16	GP list	F	35	White British	A-levels	Urban	FT	Fibromyalgia & Leg cramps	1 (living since childhood with similar pain
P17	GP list	F	74	White British	Degree (teaching)	Urban	Retired	OA, pain associated with Breast cancer & Bowel cancer	6

P18	GP list	M	64	White British	Degree	Urban	NSFW	Cervical spine disorder (low and upper back, neck), right hand, wrist, left arm and shoulder pain)	> 10
P19	GP list	F	66	White British	A-levels	Urban	No	Laminectomy, Disc fall (Back pain), OA in neck, Cervical (C7) pain	> 20
P20	GP list	F	59	White British	A-levels	Inner city	FT	OA in right knee, Lower back, Sciatica nerve pain	6
P21	GP list	M	54	White British	O-levels	Urban	FT	Shoulder pain, Sciatica	6

M=media (including social media and adverts (online, print and radio), SB=snowballing, FT=full-time, PT=part-time, NSFW=Not Suitable/Fit for Work, No=None, NK=Not Known

Table 2: Demographic characteristics of GPs

GP number	Recruitment through (M/PN/ CRN/SB)	Gender	Age (years)	Ethnicity	No of clinical sessions per week	Experience (years)	Role	Areas of interest and expertise
GP1	M	M	31	Asian British	7	3	Partner	MSK &Sports medicine
GP2	SB	M	46	White British	4	10	Partner	MSK, Medicine & Surgery
GP3	PN	F	47	White British	4	20	Both (partner + salaried)	Women health & MSK
GP4	M	M	40	White British	4	10	Salaried	Cancer research, Respiratory medicine & Pain research
GP5	PN	F	36	Indian British	4	6	Locum	Clinical research & women health
GP6	SB	M					Salaried	MSK, GP & Chronic diseases
GP7	PN	M	60	White British	2	32	Partner + Academic GP	MSK pain management, chronic conditions & Rehabilitation in MH
GP8	PN	M	44	White Non-British	3	10	Salaried	Infectious diseases & Chronic pain
GP9	M	F	52	White British	1	20	Salaried + Academic GP	Primary Care, Rheumatology & MSK
GP10	M	F	60	White British	6	32	Partner + other research roles	Primary Care, Rheumatology, MSK
GP11	PN	M	46	White British	3	9	Salaried + Academic GP	Research, GP, Epilepsy, Chronic Pain,
GP12	CRN	F	59	White British	7	30	Partner + other management role	Women health, Diabetes, General health
GP13	CRN	M	41	White British	8	12	Partner + GP trainer & research lead CRN	Education and Primary care
GP 14	PN	F	46	Indian British	5	10	Partner +research lead in practice	General practice
GP15	SB	M	60	White British	6	29	Partner + CCG role	Mental Health, MSK health, Experience of working with pain service
GP 16	CRN	F	35	White British	3	3	Salaried +research lead in	Women health & MSK

							practice & Academic GP	
GP17	CRN	M	62	White British	4	30	Partner + education	Education, Teaching & Research
GP 18	PN	M	34	White British	4	3.5	Partner + Research lead in practice, Palliative care lead & local GP lead	Mental Health & Palliative Care
GP 19	SB	M	48	White British	2	17	Salaried + Academic GP	Substance misuse, Alcohol abuse, Rehabilitation, blood borne diseases, Cross cultural medicine, Global health, Herbal medicine & Antimicrobial resistance
GP 20	PN	M	65	White British	2	8	Salaried + Academic GP	Mental health (depression and anxiety) & anti-depressive therapy
GP 21	CRN	M	46	Indian British	9	22	Partner	GP plus Cardiology

M=media (including social media and adverts - online, print and radio), PN= professional network, CRN= clinical research network, SB=snowballing

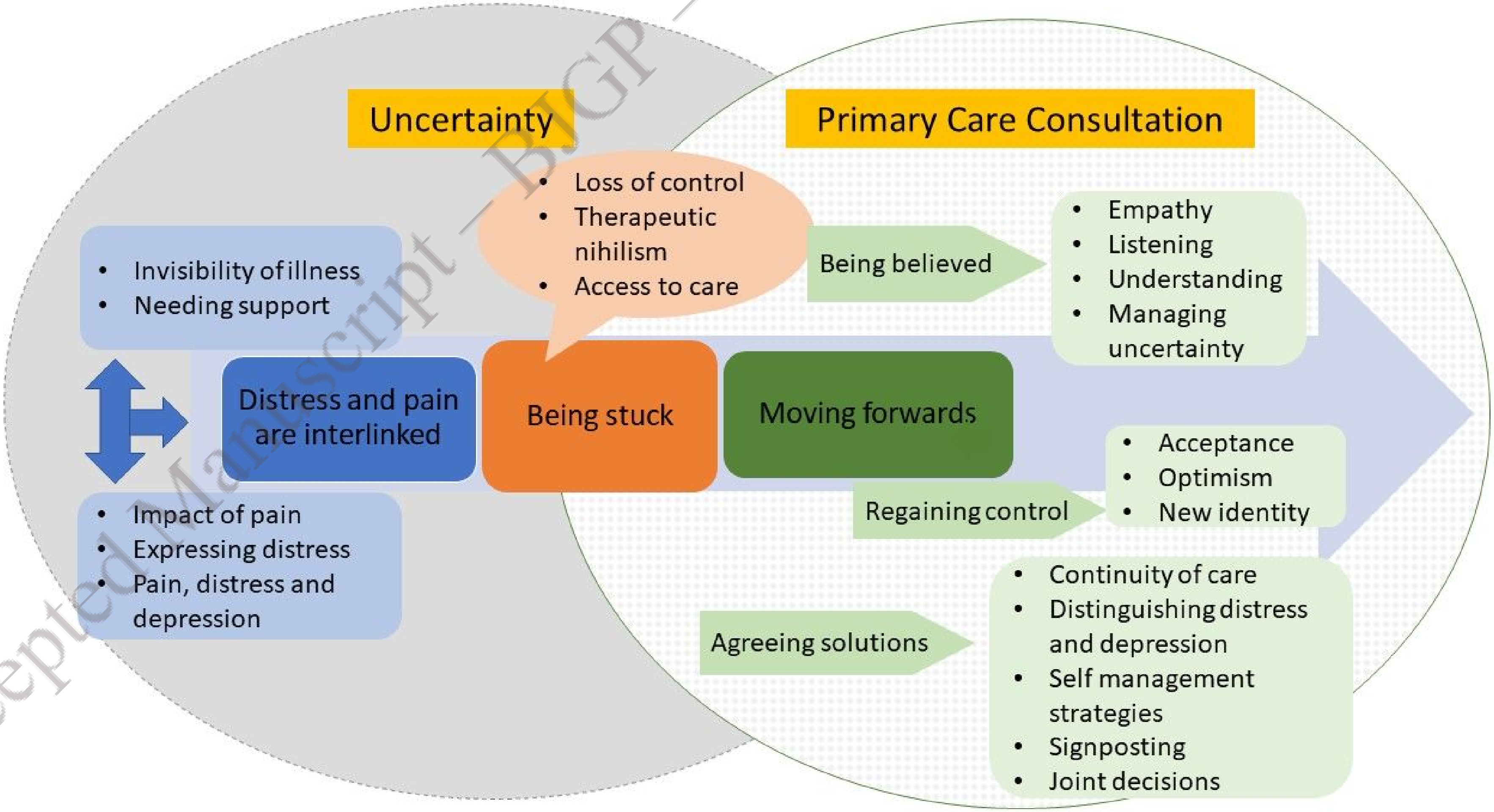

Figure 1 Framework to support patients with persistent pain within the primary care consultation