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RESEARCH ARTICLE

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Exploring the potential extended role of community pharmacy in the management of osteoarthritis: A multi-methods study with pharmacy staff and other healthcare professionals

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Abstract

Introduction: Osteoarthritis is the commonest form of chronic joint pain, which patients often self-manage before seeking healthcare advice. Patients frequently seek advice from community pharmacies, and a recent policy has recommended integrating community pharmacies into long-term condition pathways. This study explored community pharmacy teams' (CPs) and other healthcare professionals' (HCPs) views on community pharmacies providing an extended role for osteoarthritis management, identifying potential barriers and facilitators to this.

Methods: A multi-methods study comprising surveys of CPs and other HCPs, followed by qualitative interviews. Descriptive statistics were used in an exploratory analysis of the survey data. Qualitative data were analysed using reflexive thematic analysis and the identified barriers and facilitators were mapped to the Theoretical Domains Framework.

Result: CPs and other HCPs in the surveys and interviews reported that an extended role for osteoarthritis management could include: a subjective assessment, explaining the joint problem and its treatment, medication management and support for self-care. There was less consensus on diagnosing the problem as OA and completing an objective assessment. A key facilitator was training to deliver the role, whilst barriers were high workload and lack of access to General Practitioner medical records.

Discussion: Acceptable elements of an extended community pharmacy role for osteoarthritis centre around the provision of information, advice on medication and supported self-management.

Conclusion: CPs are well placed to contribute towards evidenced-based osteoarthritis management. Feasibility testing of delivering the extended role is needed and future implementation requires training for CPs and raising public awareness of the extended role.

KEYWORDS
community pharmacy, multi-methods, osteoarthritis, primary care

1 | INTRODUCTION

Osteoarthritis (OA) is a common cause of chronic joint pain, which affects 7% of the global population (Hunter et al., 2020). An estimated 3.5 million people in England live with disabling OA in either the hand, knee, hip or foot (Thomas et al., 2013). This is likely to increase in the future due to an ageing population and the associated increased risk of developing OA (Swain et al., 2020). Clinical guidelines recommend core treatments for the management of OA to include exercise, weight management, information about the condition, and support (National Institute of Clinical Excellence (NICE) 2022). Pain relief for OA is also available and is often bought over the counter (OTC) from community pharmacies (Zhang et al., 2019).

Community pharmacies teams (CPs) are increasingly undertaking clinical roles that have previously been completed by doctors, such as the management of long-term conditions (Cork & White, 2022), and a recent policy recommends integrating community pharmacies into long-term condition care pathways (GOV.UK, 2019). With an increasing demand for general practice appointments, 30% of which are for musculoskeletal conditions in England (NHS England (n.d.)), community pharmacies are well-placed to help address this demand. They can be an accessible setting for healthcare advice and support for patients, with 89.2% of the population in England living within a 20-min walking distance of a community pharmacy (Todd et al., 2015).

Given their accessibility and expanding role, community pharmacies are well placed to potentially support people with OA. This aligns with review evidence that community pharmacies and their staff have an important role to play in health promotion and can help improve health outcomes at an acceptable cost and with no evidence of harm (Steed et al., 2019). However, it is not clear what CPs currently do to support people with OA, what CPs and other healthcare professionals (HCPs) think about CPs undertaking an extended role in delivering care for OA, or what the perceived barriers and facilitators are. This multi-method study aimed to explore these issues.

2 | METHODS

This study included electronic cross-sectional surveys and semi-structured interviews with (a) CPs and (b) other primary care-based HCPs (including GPs, physiotherapists, First Contact Practitioners (FCPs), and an advanced nurse practitioner) with experience of treating OA.

2.1 | Surveys

2.1.1 | Sampling

CPs and other primary care-based HCPs were invited to complete an online survey using a snowball technique, where a link to the survey was circulated on social media, through national societies and emails from study team members to relevant contacts. CPs were eligible if they worked in a UK-based community pharmacy. HCPs were eligible if they worked in primary care and had treated at least one patient aged ≥45 years old with OA in the last 6 months. Data collection took place between August and December 2022.

2.1.2 | Survey instruments

The CP and HCP surveys were adapted from previous instruments (Cottrell, 2016, 2017; Porcheret, 2007) and refined following pilot testing with three CPs and HCPs. Survey questions were theoretically informed by the Theoretical Domains Framework (TDF) (Michie et al., 2008) and NICE guidelines on the assessment and management of OA (NICE, 2022). The survey instruments can be found in Appendix 1 and 2, but in brief, questions sought information on:

(a) Participant (CP or HCP) demographics (e.g. role, gender, years in practice, frequency of managing people with OA)
(b) Current self-reported treatment of OA, based on a brief vignette of a person with OA. The vignette was developed following the recommendations of previous studies of clinical practice behaviour (Buchbinder et al., 2001; Evans et al., 2010) and has been successfully used to capture data on clinical behaviour in previous research (Cottrell et al., 2016, 2017; Porcheret et al., 2007) (reported for CPs only in line with the focus of this manuscript).
(c) Views about the potential extended role of CPs in the management of OA. Participants were asked to rate (on a five-point Likert scale) how strongly they agreed that CPs should undertake each of 25 specific tasks that had previously been agreed as forming the content of a model general practice-based consultation for the assessment and treatment of OA (Porcheret et al., 2013).Tasks covered five key areas: assessment and diagnosis, explanation of the joint problem and its treatment, medication management, support for self-management, and other tasks.

(d) Perceived barriers to CPs working in an extended role to care for people with OA (closed response options informed by the TDF, e.g. lack of skills).

At the end of each survey, participants were asked to consent to further contact to see if they would like to participate in an interview.

2.1.3 | Sample size

We aimed for a minimum of 100 CP responses, enabling estimation of any proportion of interest with a precision of ±10% or better, based on a 95% confidence interval. We also aimed for between 100 and 400 responses from HCPs, as this would enable estimation of any proportion of interest with a precision of between ±10% and ±5%, based on a 95% confidence interval (de Vaus, D. 2014).

2.1.4 | Survey data analysis

Descriptive statistics (numbers, percentages) were used to summarise the data using SPSS version 27 (SPSS: IBM Corp, 2020). Graphs of the data were produced using Microsoft Excel.

2.2 | Interviews

2.2.1 | Sampling

Participants who returned the questionnaire and provided consent for further contact formed the sampling frame for the interview study. Interviewees were purposively selected to represent the broadest range of characteristics: role (HCPs) and context of work (e.g., CPs: size and location of the pharmacy). Data collection for the interviews ceased once all available participants had been interviewed, and we aimed to conduct up to 20 interviews with both CPs and HCPs, based on previous experience (Holden et al., 2019). Once consent was obtained, one-to-one semi-structured interviews were completed by the lead author (a clinical academic physiotherapist with qualitative research experience). Interviews took place virtually via Microsoft Teams (using audio only) and lasted approximately 1 hour. All interviews were audio recorded and transcribed verbatim. Transcriptions were checked for accuracy against the audio recording and anonymised prior to analysis.

2.2.2 | The interview schedules

The interview schedules were developed by the research team in conjunction with patient and public involvement and engagement and were theoretically informed by the TDF. The interviews explored areas of dissonance, similarities and uncertainties about the potential extended roles for, and related support needs of, CPs to deliver care for people with OA. Open questions at the end of the interviews allowed participants to discuss anything else they felt was relevant.

2.2.3 | Interview data analysis

Reflexive thematic analysis occurred alongside the data collection so that generated theme could be explored in subsequent interviews (Braun & Clarke, 2020). A two-stage framework was adopted. Initially, each transcript was re-read to identify and code discrete parts of the data using the comment function in Microsoft Word and data representing similar concepts were then grouped into themes using Microsoft Excel (Guest et al., 2020; Miles & Huberman, 1994). Generated codes and themes were discussed and agreed by four study team members experienced in qualitative research with different professional backgrounds (physiotherapy (MH, JS), pharmacy (SW), health psychology (NO)) and applied to the dataset with ongoing refinement as needed. Inductive analysis preceded deductive analysis when themes were mapped to the TDF to identify key barriers and facilitators to a community pharmacy role, taking into consideration the frequency of the beliefs across the interviews, the presence of conflicting beliefs and the perceived strength of the beliefs impacting the behaviour (Patey et al., 2012) (see Table 2 for example quotes). This layered approach enabled a rich interpretative analysis to be completed as emergent issues were identified ahead of making sense of data according to theoretical constructs. Mapping of themes to the TDF was undertaken by the lead author (JS) and checked by SW or NO.

3 | RESULTS

3.1 | Surveys

3.1.1 | Response

In total, 85 CPs accessed the electronic survey and completed the screening question. 82 were eligible to participate. Of those, 33 responded to at least one question, and were thus included in the analyses. As shown in Table 1, pharmacists (including locum pharmacists) were the most common type of CP participants, with smaller representation from pharmacy technicians, pharmacy assistants and managers. The most common community pharmacy location was in the high street (n = 23, 69.7%) and the most common pharmacy type was a large pharmacy chain, with 100 or more pharmacies (n = 15, 45.5%). Most CPs reported they often saw, advised, or treated people with OA, with 13 CPs (39.4%) seeing people with OA frequently (at least once a month) and 8 CPs (24.2%) seeing patients very frequently (at least once a week). Only 5 (15.2%) of CPs reported receiving specific training in OA.

Of 135 individuals who undertook screening for the HCP survey, 119 were eligible to participate. Of those, 79 HCPs responded to at least one question on the survey and were included in the analysis. For HCPs, physiotherapists (n = 22, 28.0%) and GPs (n = 17, 21.0%)

TABLE 1 Characteristics of survey respondents.

Community pharmacy staff (*N* = 33)	*N* (%)	Other healthcare professionals (*N* = 79)	*N* (%)
Pharmacist	12 (36)	Advanced nurse practitioner	8 (10)
Locum Pharmacist	11 (33)	Advanced physiotherapy practitioner or extended Scope practitioner	12 (15)
Pharmacy assistant/Medicine counter assistant	2 (6)	First contact practitioner	5 (6)
Pharmacy technician	1 (3)	GP	17 (21)[a]
Locum Pharmacist and healthy living champion	1 (3)	Physiotherapist	24 (31)[b]
Pharmacist and qualified independent prescriber of medicines	1 (3)	Podiatrist	2 (3)
Manager	1 (3)	Other[c]	6 (6)
		Dual roles[d]	5 (6)
Gender		Gender	
Man (including trans man)	10 (31)	Man (including trans man)	27 (34)
Woman (including trans women)	21 (66)	Woman (including trans women)	51 (64)
Prefer not to say	1 (3)	Other	1 (1)
Years of experience		Years of experience	
<1 year	2 (6)	<1 year	7 (8.9)
1–5 years	10 (31)	1–5 years	25 (31.6)
6–10 years	7 (22)	6–10 years	9 (11.4)
More than 10 years	13 (41)	More than 10 years	38 (48.1)
Location of practice in the UK		Location of practice in the UK	
Northern Ireland	2 (6)	Northern Ireland	1 (1)
East Midlands	4 (12)	East Midlands	4 (5)
West Midlands	1 (3)	West Midlands	24 (30)
East of England	10 (30)	East of England	2 (3)
London	1 (3)	London	2 (3)
North West	11 (33)	North West	18 (23)
North East	1 (3)	North East	4 (5)
Yorkshire and Humber	2 (6)	South East	11 (14)
Scotland	1 (3)	Wales	1 (1)
Type of specific training in chronic joint pain received		Type of specific training in chronic joint pain received α	
Yes	5 (15)	Yes	45 (57)
Courses or modules with formal assessment α	1 (3)	Short training α	25 (56)
Within an undergraduate degree α	2 (6)	Day or weekend courses with no formal assessment α	15 (33)
Within an MSc or equivalent α	1 (3)	Courses or modules with formal assessments α	8 (18)
Other training α,[e]	2 (6)	Diploma or equivalent α	1 (2)
α Figures do not add to totals due to single participants completing multiple courses		Within an undergraduate degree α	16 (36)
		Within an MSc or equivalent α	18 (40)
		Other training α,[f]	5 (6.5)

[a]2 of the GPs in the group worked as academic GPs.

[b]2 of the physiotherapists in the group worked as academic physiotherapists.

[c]Other: The following professions were represented by one participant only: Dietician, Registered Nurse, Stroke Specialist Nurse, District/Community Nurse, Advanced Clinical Practitioner Trainee (Advanced Paramedic), Physician Associate.

[d]Dual role professions listed Physiotherapist and First Contact Practitioner 1 (1), Advanced Physiotherapy Practitioner or Extended Scope Practitioner and First Contact Practitioner 3 (4), Advanced Nurse Practitioner and Advanced Physiotherapy Practitioner or Extended Scope Practitioner 1 (1).

[e]Other training (community pharmacy staff): CPPE (Centre for Pharmacy Postgraduate Education), self-directed study.

[f]Other healthcare professional training: Teaching on biopsychosocial approach, junior doctor rotations through rheumatology, PhD.

TABLE 2 Summary of key beliefs, sample quotes and the associated theoretical domains.

Domains	Specific belief	Sample quote(s)	Frequency
Barriers			
Environmental context and resources	A high workload is a barrier to having time to deliver an extended role.	*"Like, pharmacy staff and workloads, it's just crazy, right, they're under so much pressure, so I think fitting in time to do everything else, service-wise, and then add this in"* – Participant 56 (Community Pharmacist)	13/16 interviews
		"Time…and all the other roles that they're expected to do. Because I never see a pharmacist stood there doing nothing, they always look like headless chickens" – Participant 44 (FCP)	
	A lack of access to the patients' GP medical notes is a barrier to an extended role.	*"Probably the biggest challenge is being able to question prescribing decisions, because we don't have access, necessarily to the clinical record, the GP record of, like, consultations, and the finer details. We can access Summary Care, but that's only telling you what they've been prescribed before, you don't have the context. So, I guess having the context might give people more, um, confidence to challenge, and – and question decisions"* – Participant 56 (Community Pharmacist)	10/16
		"It's access to the patient's records and other medical problems, other medications that they're taking, and blood investigations to make sure that it's actually safe to prescribe something to them" –Participant 44 (FCP)	
Social and professional role	A perception that patients would not expect pharmacies to deliver this role is a barrier.	*"I think the other thing can sometimes be - people don't expect that sort of thing because a lot of people think of pharmacy as sort of almost like shopkeepers and don't expect…an in-depth history of their joint pain. It might not meet their expectations of the role"* – Participant 11 (Community Pharmacist)	12/16
		"Maybe the public's perception of where a pharmacist fits in to this because they're used to going to a pharmacy to get a prescription or to go and buy medication, they're not used to going to a pharmacy to have other things" – Participant 95 (Physiotherapist)	
Beliefs about capabilities	A lack of confidence in delivering the extended role may be a barrier.	*"The impression I get is that the don't really want to take ownership and responsibility, therefore they refer the patient back to us. So, it could either be lack of knowledge, or lack of confidence"* - Participant 126 (Advanced Practice Nurse)	9/16
		"I guess the skill mix and confidence of the staff who are delivering it, that is, *are they happy to even do this? Or is this gonna require a lot of, um – of the training and support, to be able to have, like, people delivering it?"* – Participant 56 (Community Pharmacist)	
Intention	An expansion of CPs role may be a barrier.	*"I think maybe just expectations and I think it's an age thing in that I suppose if somebody told me in 20 years' time, I would be doing 20 extra jobs I would kind of go, 'Oh, it's not kind of the job description I have right now'. And that's not necessarily a good or bad thing, but it*	2/4 (of CP interviews)

(Continues)

TABLE 2 (Continued)

Domains	Specific belief	Sample quote(s)	Frequency
		depends if you're willing to, or if you're just turning up to do the job and go home. And if you're not that interested in your development, that's OK, but I think you can get quite jaded and I think there's been a lot of burnout and people changing sectors and things, especially with the pandemic. I think people have maybe just lost their way of remembering why they started" – Participant 11 *(Community Pharmacist)*	
Facilitators			
Knowledge	Providing training is a facilitator for an extended CP role for OA.	*"As long as you've had, as I say, good training, erm, you know, they've got good guidelines to follow that are simple and there are you know, very clear boundaries to what they can and can't do to make it simple in that sense"* – Participant 82 (GP)	16/16
		"I think I think it goes back to again about being generalist and not specialist and that we can probably manage in broad strokes but could probably do with a bit more knowledge and a bit more confidence building probably. So, if we could probably do like half day training course, I think that would be really useful for like my colleagues and I" – Participant 11 (Community Pharmacist)	
Environmental context and resources	A private consultation room is a facilitator for an extended CP role for OA.	*"We've got two great consultation areas. Erm, and so, there's privacy in that"* – Participant 76 (Community Pharmacist)	11/16
		"Facilities are important as well, and I know more than ever pharmacists do have private consultation rooms, but it's not appropriate to do a clinical consultation across the counter at the pharmacy…that's a stretch too far for me I think, so there should be somewhere that they can take that patient for a confidential chat and obviously examine them" – Participant 82 (GP)	
Environmental context and resources	Improved collaboration with other primary care HCPs/services is a facilitator for an extended CP role for OA.	*" I guess having good links to local GP surgeries as well. So, knowing that they can perhaps quickly contact somebody at the GP surgery who might be able to pass on information or check certain things for them"* – Participant 101 (GP)	10/16
		"There's no reason why this needs to be led by pharmacists. Although it's nice to have the – the kind of professional, um, identification and connection, it could be, um – I'm just postulating here, but maybe, like, paramedics, or nurses, or GPs, they could deliver training, too. So, it is breaking down the barriers, I guess, between the different settings of healthcare. GPs, pharmacists, even if they're actually seeing patients face to face, and diagnosing, they could be educating the community pharmacists. So it becomes more of, like, a collaborative team effort" – Study ID 56 (Community Pharmacist)	

TABLE 2 (Continued)

Domains	Specific belief	Sample quote(s)	Frequency
Memory, attention and decision-making processes	A clear referral pathway is a facilitator to an extended CP role for OA.	*"Maybe a clearer referral pathway when you were really concerned about somebody's joint, rather than just saying, you know, "Go to A&E." It would be nice to have a structure where it's something you're concerned about but isn't absolutely a blue light one…it's always nice to have a clear pathway and you're not clogging up A&E"* Participant 76 (Community Pharmacist)	5/16
		"But again I think communication is just one of the biggest things, I think if the communication is there between the GPs, the physios, the pharmacists and there's almost like open channels of communication and a good written referral pathway of you know, what you can do, and then good places to be able to signpost people, erm, like your, you know, weight loss services" – Participant 95 (Physiotherapist)	
Social influence	Raising awareness of the extended CP role in OA to the public is a facilitator.	*"I think, you know, it needs to be splashed on televisions and papers doesn't it that you're your community pharmacist can do X, Y, Z, you don't have to go to your GP to get that information"* - Participant 44 (FCP)	10/16
		"And probably educating the public as well to understand the nature of the condition. Because people are led to believe by especially advertisements on TV and that, that, you know, there's a rapid and easy solution for everything, which unfortunately with the nature of OA isn't true. But, er, so yeah, because with them, we get it a lot, anything you could do to raise awareness of OA with the individual and the community pharmacy would help both, I think" - Participant 76 (Community Pharmacist)	

were the most common type of HCP participants. In total, 45 HCPs (57.0%) had received specific training on OA, with training most frequently being attendance at a short course or within a degree qualification.

3.2 | Current beliefs and behaviours of CPs regarding OA

Most CPs (n = 17, 56.7%) felt they had the knowledge needed to effectively assess patients with OA, what causes OA (n = 24, 88.9%) and felt informed on the range of treatments available (n = 23, 82.1%). Most CPs also felt well informed about potential self-management techniques for OA (n = 18, 69.2%). There was less certainty about what referral pathways they could utilise for people to access more support, with only 6 (19.4%) of CPs reporting feeling well informed about this. Under half of the CPs were familiar with the NICE (2022) osteoarthritis guidelines (n = 13, 46.4%).

All CP responders to the management of the case vignette reported that they would perform some kind of assessment of the person with OA, most commonly reviewing the patient's lifestyle including level of physical activity (n = 32, 97.0%) and analgesic use (n = 30, 90.9%). In addition, 96.8% (n = 30) reported they would provide advice and education to this patient, mostly commonly on the optimal use of painkillers (n = 27, 90.0%), increasing general physical activity (n = 25, 83.3%) and weight loss (n = 23, 76.7%) and 93.9% (n = 31) reported that they would issue advice on OTC medications, most commonly paracetamol (n = 24, 77.4%) or topical NSAIDs (n = 16, 51.6%). Over half, 58.1% (n = 18) would refer or signpost the person to another service, most commonly to the GP (n = 14, 77.8%).

3.2.1 | The beliefs of CPs and other HCPs about a possible extended CP role in the management of OA

Assessment and diagnosis

There was a high level of agreement (% agree/strongly agree) among CPs and HCPs that within an extended role, community pharmacies could ask patients about their OA, including if and how the joint problem affects activities (CPs: 100% HCPs: 84.4%), about any problems with their other joints or other health conditions (CPs: 100% HCPs: 92.1%), if they had tried anything to help (CPs: 100%, HCPs: 96.1%) and red flag screening (to rule out serious pathology) (CPs: 86.2%, HCPs: 97.4%). There was less agreement that CPs should conduct a physical examination of the joint (CPs: 51.7%, HCPs: 29.3%) (Figure 1).

Explanation of the joint problem and its treatment

Most CP and HCPs agreed or strongly agreed that community pharmacies should ask if the patient has any questions about OA (CPs: 96.5% HCPs: 92.0%) and provide an information booklet about the condition (CPs: 75.9%. HCPs: 88.1%). There was less agreement around CPs diagnosing the patient's condition as OA and explaining why this was the diagnosis (CPs: 58.6% HCPs: 52.6%). There was also less agreement among CPs that community pharmacies should explain OA to patients (CPs: 86.2% HCPs: 52.60%) (Figure 2).

Medication management

Over 95% of CPs and HCPs agreed or strongly agreed that community pharmacies should ask about medication needs and make recommendations about medicines (Figure 3).

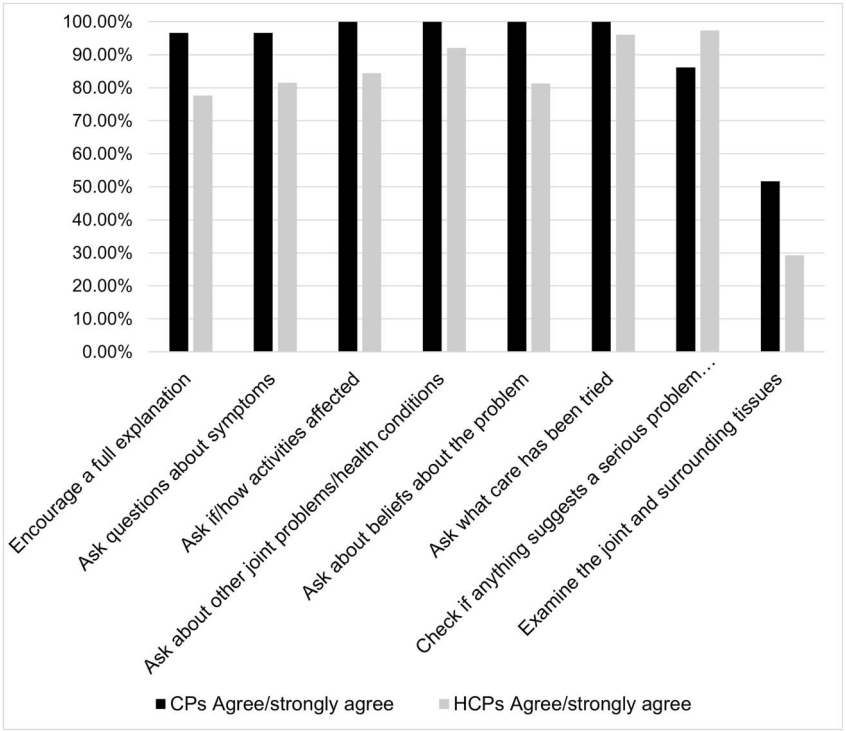

FIGURE 1 Assessment and diagnosis.

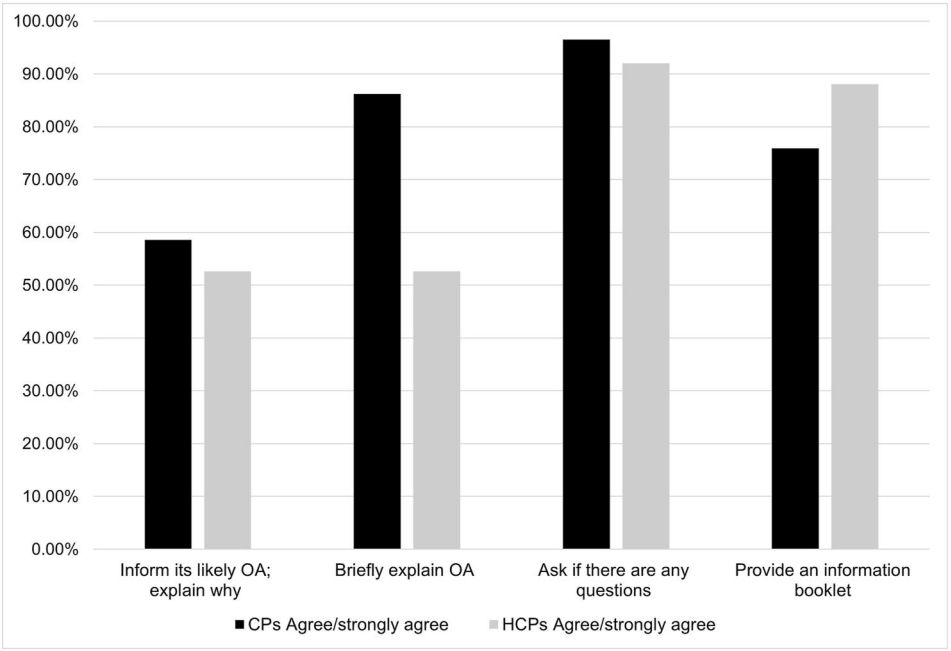

FIGURE 2 Explaining the joint problem and it's treatment.

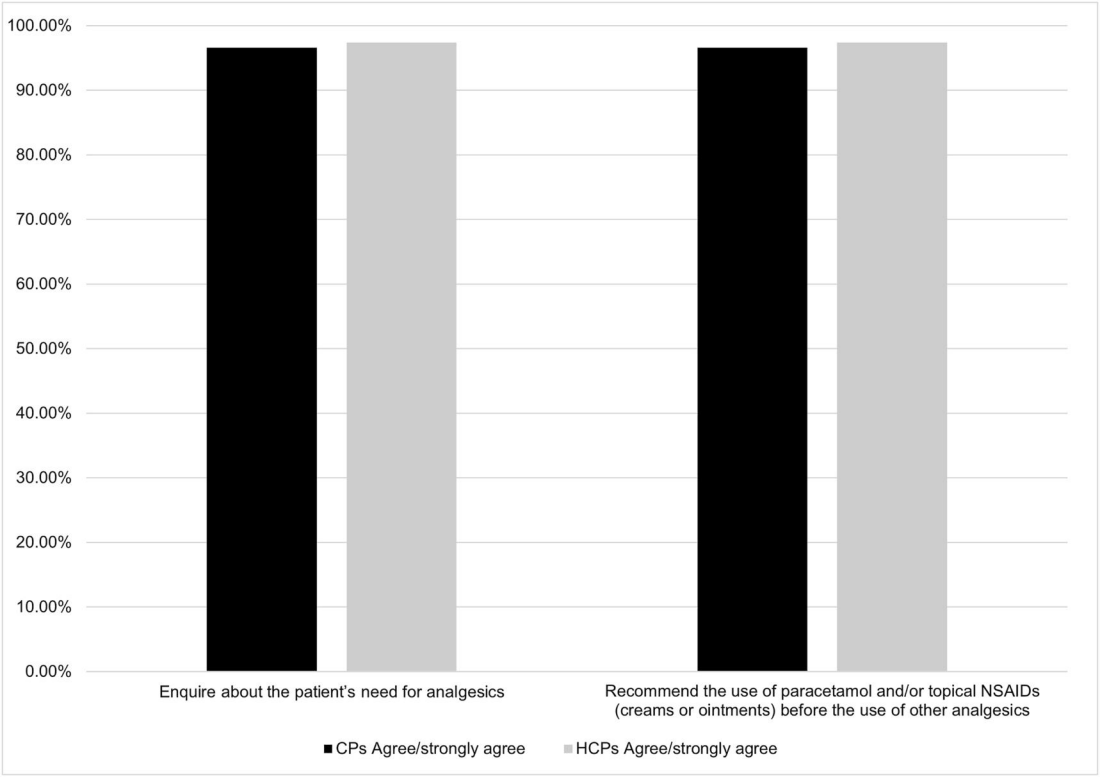

FIGURE 3 Medication management.

Support for self-care

Most CPs and HCPs agreed or strongly agreed that CPs should encourage physical activity (CPs: 75.8% HCPs: 75.0%), strengthening exercises (CPs: 75.9% HCPs: 69.8%) and weight loss (if needed) among people with OA (CPs: 93.1% HCPs: 82.9%) (Figure 4).

Other aspects of care

Most CPs and HCPs agreed or strongly agreed that community pharmacies should signpost patients to the appropriately trained clinician (CPs: 89.6% HCPs: 88.2%), summarise the management plan, check its acceptability with the patient (CPs: 96.5% HCPs: 89.4%),

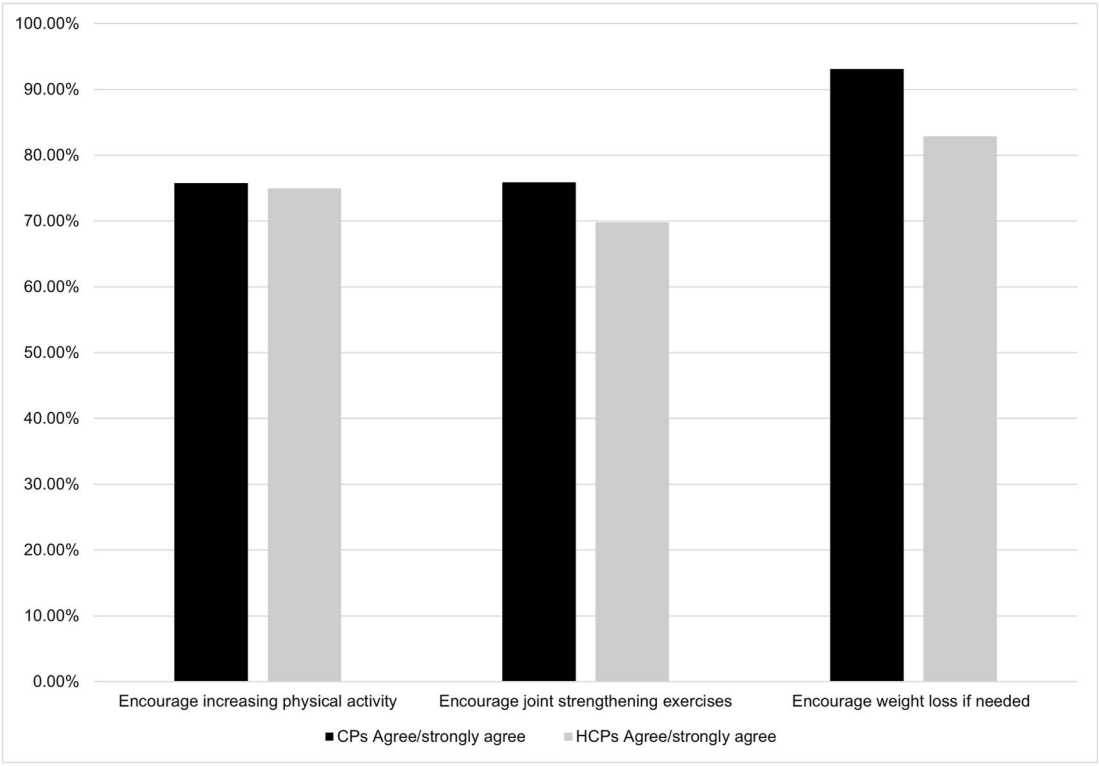

FIGURE 4 Support for self-management.

and record it in the patient's consultation record (CPs: 75.8% HCPs: 88.2%). CPs were in less agreement than HCPs that it was appropriate for them to inform the GP of the patient contact (CPs: 48.3% HCPs: 80.2%). They were in more agreement than HCPs that a follow-up appointment with the community pharmacy should be offered (CPs: 82.8% HCPs: 67.1%) (Figure 5).

Perceived barriers to an extended CP role in caring for people with OA

Almost all CPs (96.6%) and HCPs (96.1%) reported that there were barriers to CPs' delivering an extended role. Figure 6 shows that frequent barriers for both CPs and HCPs were a lack of relevant or appropriate training (CPs: 72.4% HCPs: 77.6%), and time (CPs: 72.4% HCPs: 67.1%). The most common CP barrier was a lack of confidence in delivering the role (79.3%). 60.5% of HCPs also identified both a lack of skills and a lack of space as a barriers, compared to only 27.6% of CPs.

3.2.2 | Interview findings

Response

Ten CPs and 34 HCPs who had completed the survey gave consent for further contact. In total, four community pharmacists and 12 HCPs (four GPs, four physiotherapists, two FCPs, one advanced nurse practitioner and one with a physiotherapy and FCP dual role) agreed to be interviewed.

Key findings

The identified themes were (1) facets of HCP/CP practice; (2) diagnosis and assessment; (3) explaining the joint problem and assessment in an extended role; (4) medication management; and (5) supporting self-care.

3.3 | Facets of pharmacy practice

3.3.1 | The current context of CP practice

Pharmacists consistently reported that CPs did not link up well with other primary care services or other HCPs, describing them as *'isolated'* (Participant 76, Community Pharmacist), *'siloed'* (Participant 56, Community Pharmacist) and *'disconnected'* (Participant 150, Community Pharmacist). CPs were also reported to be extremely busy, with a pharmacist describing a shift with staff shortages and many competing tasks as a *"disaster day"* (Participant 11, Community Pharmacist). However, the recognised benefit of a CP model of care was its accessibility:

> *"We are very much the first port of call. Because it's less formal and you can just walk in. You don't need an appointment"*
>
> – Participant 11 (Community Pharmacist)

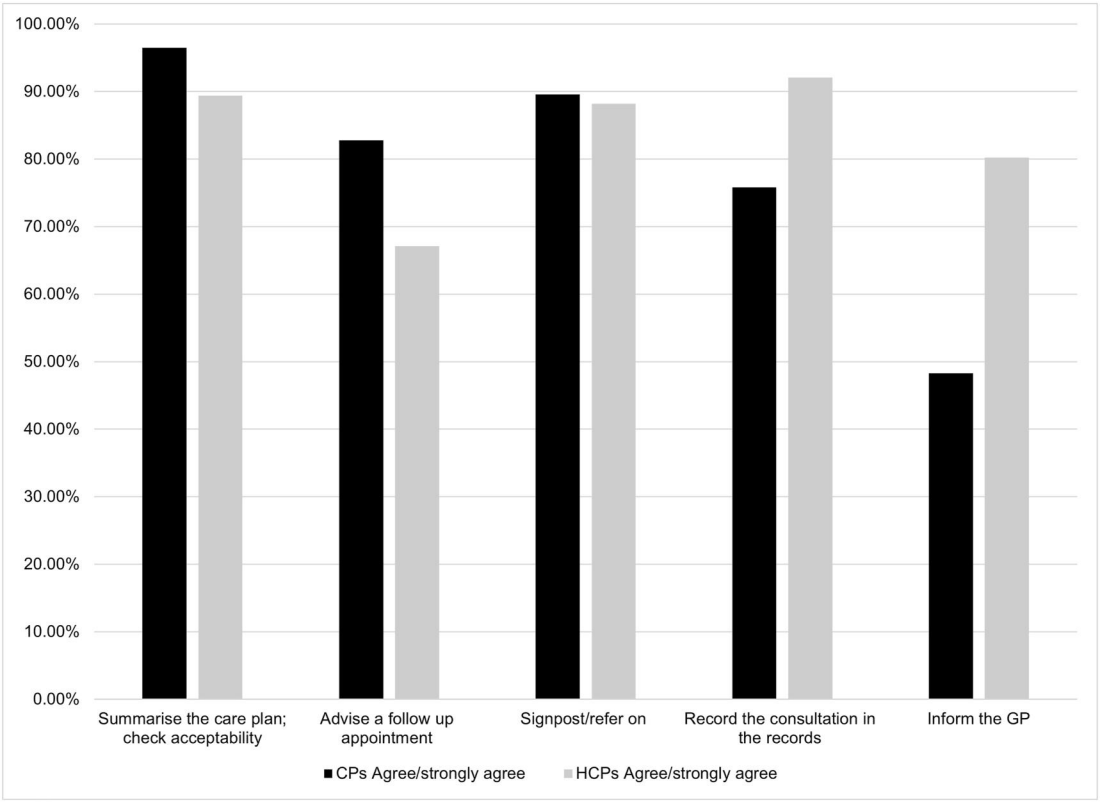

FIGURE 5 Other aspects of care.

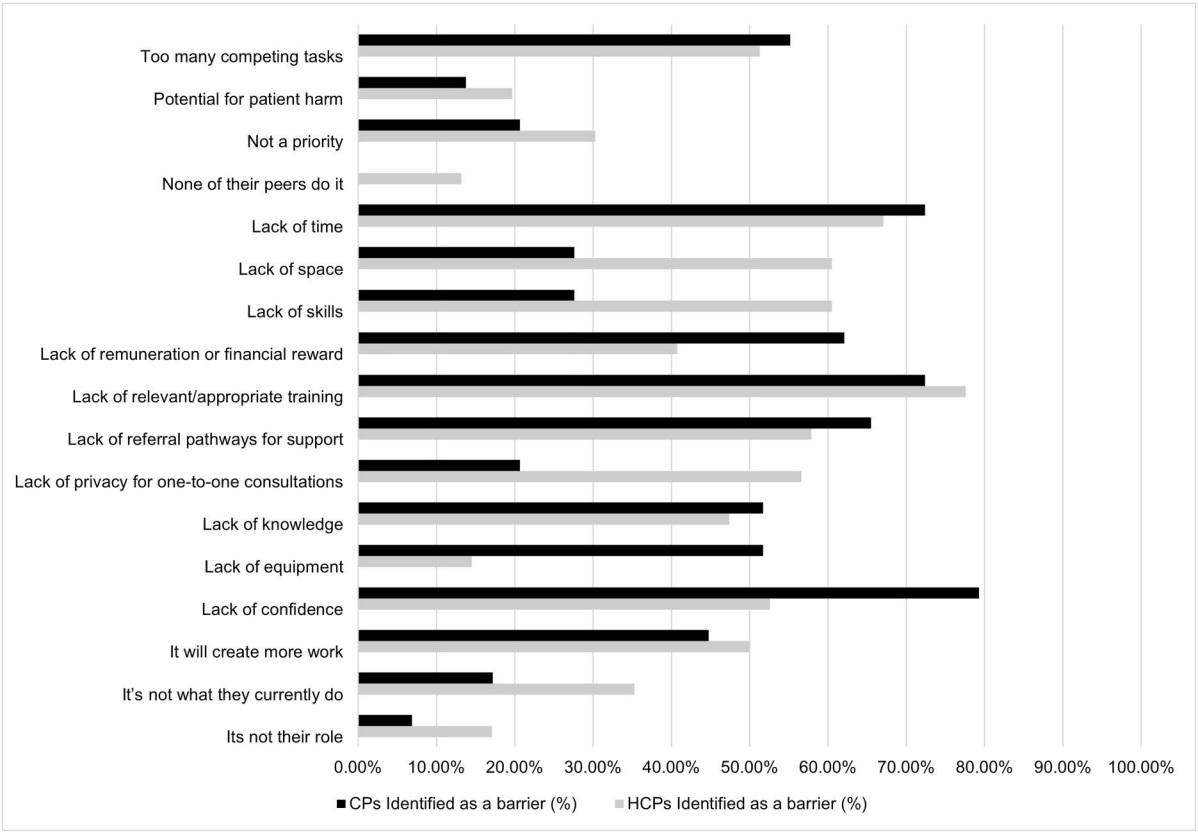

FIGURE 6 Perceived barriers to an extended CP role in caring for people with OA.

3.3.2 | Management of patients with OA

The CP interviewees reported that they saw people with OA "*all the time*" (Participant 150, Community Pharmacist). Their descriptions of current care included giving advice on medication and self-management strategies, such as structured exercise:

> "*On my radar next would be, like, the topical NSAIDs, so the more of the creams and gels, um, rather than oral NSAIDs*"
>
> – Participant 56 (Community Pharmacist)

> "*Encourage them in whatever way is safe for them to maybe do some exercise, even if it's just, you know, foot raises in front of the telly or pushing a ball of socks around, anything that can mobilise things*"
>
> – Participant 76 (Community Pharmacist)

Pharmacists reported that the most common HCP they would direct patients with OA to would be a GP, but they were uncertain about what the care pathways for patients with OA were in their area:

> "*But outside of GP's I don't know if - what sort of referrals there would be*"
>
> – Participant 11 (Community Pharmacist)

None of the HCP participants reported formally referring patients to community pharmacy as *"there isn't a pathway there"* (Participant 95, Physiotherapist) and even though many reported signposting patients to their local community pharmacy, they were left not knowing whether the patient took their advice, with one interviewee describing it as a *"black hole…I guess we don't know what happened"* (Participant 101, GP).

3.3.3 | Extended role

Overall, CPs and other HCPs agreed that it was possible, and generally thought to be acceptable, for community pharmacies to play an extended role in caring for people with OA. They were felt to be well placed to deliver advice and education on the condition and self-care (including weight loss, joint exercises and increasing physical activity), medication management (in terms of advising on OTC medications, managing polypharmacy), and to signpost or refer people to other services (e.g., GP, physiotherapy).

3.3.4 | Diagnosis and assessment

None of the CPs reported currently providing patients with a diagnosis of OA and that to do so, they would first require training and support. HCPs were similarly uncertain about CPs diagnosing and felt that if diagnosis was a component of the extended role, then it should be the pharmacist in the team that delivers this:

> "*I think you have to be very careful with the word 'diagnosis', bearing in mind we don't have any training in diagnostics or access to any diagnostic tools or diagnostic methodology*"
>
> – Participant 76 (Community Pharmacist)

> "*If we're going to give a label of a diagnosis like osteoarthritis, which is chronic and lifelong, um, it probably has to, should be the pharmacist, I think. Um, purely… well, one reason, it's their job and, and they're used to taking on, er, that responsibility and ownership of that level of clinical care*"
>
> – Participant 89 (GP)

Pharmacy and HCP interview data mirrored the survey data in relation to a key part of an extended community pharmacy role being the inclusion of a subjective assessment and red flag screening for serious pathology:

> "*It's really important that they clear red flags and things like that to make sure that they're not just assuming that you have got arthritis when there could be a tumour or you know, a septic joint*"
>
> – Participant 69 (Physiotherapist)

Neither CP nor other HCP interviewees felt that an objective assessment of the joint should be part of an extended pharmacy role. They perceived that CPs would not be used to performing such an assessment and therefore may lack confidence in doing so:

> "*I don't even know where I would start with doing like a physical examination…no idea. Completely. Wouldn't have a clue how to even start looking at something like that*"
>
> – Participant 11 (Community Pharmacist)

> "*I'm sure that depends on the pharmacist and their training. I don't think it's straightforward to assess somebody with joint pains…I don't think it's straightforward for GPs to do that and we've had quite a lot of training. So, you know, I don't know how confident pharmacists would be in that role*"
>
> – Participant 101 (GP)

3.3.5 | Explaining the joint problem and its treatment

Both CP and other HCP interviewees expected that the extended role would involve the provision of an explanation about the joint pain and its management:

> "*I mean I think they should be fairly adept at doing it…it wouldn't be completely new to them, lots of pharmacists give lots of medical advice anyway, so you know I think in terms of them explaining etc., it should be okay if you've managed to develop a model where they've had the training*"
>
> – Participant 82 (GP)

The composition of different roles within community pharmacy teams was also reflected on in relation to how any member of the team could provide information about the joint problem and its treatment if they had received appropriate training to ensure they had the correct knowledge and communication skills to deliver it:

> "*I'm thinking…can we utilise the skill mix within the community pharmacy, and think, 'Does it need to be the pharmacist even doing this? Can we upskill, like, um, technicians, dispensing staff, um, maybe even counter assistants, because often they're the first people to have the conversations?' "*
>
> – Participant 56 (Community Pharmacist)

3.3.6 | Medication management

Confidence to support patients with medication management for joint pain was evident in the CP accounts. Specifically, they reported making sure any medicinal recommendations did not interact with other medications the individual was taking, and providing education on adherence and safety.

> "*But then, if it's about medicines, it's making sure that they're safe, and effective, and optimised, I guess, is my biggest thing. So not only about recommending the right medicine for that person, but it's also about educating them on how to take it safely*"
>
> – Participant 56 (Community Pharmacist)

HCP views echoed the part that CPs play in medication management, describing it as a *"valuable role"* (Participant 88, GP). It was also commented that pharmacists with prescribing qualifications would be useful to help prescribe and deprescribe to help patients experiencing acute pain flares:

> "*If they're a prescribing pharmacist which more and more of them are, if they were having a flare up potentially, they could then go into the safe use of maybe a stronger, very short-term relief opioid with them, just to get them over that acute flare up. And then get them back down to routine over the counter"*
>
> – Participant 44 (FCP)

3.3.7 | Support with self-management

CP and HCP interviewees agreed that an extended pharmacy role would be well placed to support self-management for joint pain, including providing lifestyle advice. Delivering evidenced-based self-management support was seen as a key element of a healthcare role, regardless of profession:

> "*You don't need to be a musculoskeletal clinician, or a GP do you to advise people to be a healthy body mass index and exercise regularly. Er, I mean that is - pretty much my role on a day-to-day basis"*
>
> - Participant 85 (Physiotherapist and FCP)

> "*And I think we're quite well positioned for like lifestyle interventions if somebody was interested. And potentially like they wanted to talk like through, like managing other health conditions and potentially like if there was any support, they could maybe have with like, diet, exercise… we're quite well positioned to do that*"
>
> – Participant 11 (Community Pharmacist)

3.3.8 | Other aspects of care

CPs and HCPs both reported that signposting people with OA to the appropriate HCP (most often a GP) if they had concerns would be an important part of the role:

> "*If I had somebody who was coming in and sort of concerned about it in that I would probably refer to the GP. If they were happy to self-refer grand, but if they wanted help, I wouldn't mind sort of ringing…sort of supporting people"*
>
> - Participant 11 (Community Pharmacist)

> "*I think if they see somebody with a knee pain…and then four weeks later they're like, 'this is still troubling me' it should be made clear that you're gonna have to go to your GP"*
>
> – Participant 82 (GP)

3.3.9 | Barriers and facilitators to an extended community pharmacy role

The key barriers identified across the interviews centred around the TDF domains of environmental context and resources (a high workload, a lack of access to the patients GP medical notes) and social and professional role (the perception that patients would not be aware that CPs could deliver this role). Other barriers are linked to beliefs about

capabilities (a lack of confidence) and intention (the expansion of CPs role has led to many competing tasks). The key facilitators identified focused on the TDF domains of environmental context and resources (having a private consultation room) and knowledge (providing training to support CPs to deliver the role). Other identified facilitators were mapped to the TDF domain of memory, attention and decision making (having a clear patient referral pathway) and social influence (raising awareness of the extended CP role). See Table 2 for an overview of the TDF domains with associated participant quotes.

4 | DISCUSSION

This study explored CPs' and other HCPs' views on community pharmacies providing an extended role for OA management and identified barriers and facilitators to this. Surveys and interviews revealed that an extended role consisting of assessment and diagnosis, explaining the joint problem and its treatment, medication management, supporting self-management and other aspects of care was generally thought to be acceptable.

4.1 | Current CP care for OA

Current CP care for OA focused on advice and education, such as on physical activity and using OTC analgesics. This fits with guidelines for OA management, with therapeutic exercise, weight loss and tailored information and support being core treatments (NICE Guidelines, 2022). The surveys used in this study were published before the updated NICE guidelines (2022) on OA and therefore also elicited views on recommending paracetamol; however, this has since been removed from recommendations for routine pharmacological management.

4.2 | Diagnosis and assessment

HCPs and CPs in the surveys and interviews were broadly in agreement that an assessment of joint pain in an extended role could consist of asking questions about the problem and ruling out sinister pathology. However, the interviews showed that both groups were unsure about CPs delivering a diagnosis of OA in an extended role and it was felt if this was a component, it should be delivered only by a pharmacist with appropriate training. HCPs and CPs were also uncertain about an objective assessment of the joint because pharmacists were perceived to lack the skills or confidence to complete this.

4.3 | Extended role: Explaining the joint problem, medication management and support for self-care

This study found that an extended role for OA could focus on providing information, medication management and support with self-care. The surveys and interviews revealed that both CPs and HCPs were confident that CPs could deliver advice on medications and support for self-management. The interviews confirmed that this was something they currently delivered and that support for self management could be delivered by all members of CPs.

4.4 | Extended role: Other aspects of care

Both CPs and HCPs agreed that CPs should signpost patients to the appropriate HCP if required. However, CPs had less agreement on informing the GP of the outcome of the consultation, and HCPs had less agreement on CPs providing follow-ups for patients (CPs were broadly positive about this). The interviews showed that HCP reticence about follow-ups was because they felt it was unfair for CPs to manage this clinical risk, and it should be made clear that if the patient was not improving, they should seek GP care.

4.5 | Barriers to an extended role

The barriers identified broadly align with previous literature, which identified that access to GP medical records would improve integration within a primary care pathway for people with long-term conditions (Hindi et al., 2019; Ogunbayo et al., 2016). Workload was also cited as a key barrier, and a recent community pharmacy workforce survey has identified an increased vacancy rate in all community pharmacy roles, including vacancies of 20% for pharmacy technicians, 16% for pharmacists and 9% for dispensing assistants (NHS Health Education England, 2023). This study also showed that both CPs and HCPs felt that patients would not expect CPs to deliver this role, and this is supported by a previous systematic review that found that patients are unaware of the services that CPs offer, and that national promotion strategies would be beneficial (Hindi et al., 2018).

4.6 | Facilitators to an extended role

Training was a key facilitator to improve CPs knowledge and confidence, enabling them to deliver an extended role for OA and could potentially enable care to be provided for earlier presentations of OA, or for people who do not access other healthcare services (Darlow, Brown, Hudson, et al., 2023). This study identified that improving collaboration with other primary care providers, such as GPs, would also be beneficial in an extended role for OA. This is supported by a previous randomised controlled trial, where a pharmacist-initiated intervention trial in OA found that the intervention arm (multi-disciplinary care involving a pharmacist, physiotherapist and communicating with the primary care physician) led to improvements in pain and function, as well as improved utilisation of treatments for OA (Marra et al., 2012).

4.7 | Comparison to previous studies

Previous research has identified that there are issues in receiving quality interventions for OA due to inadequately resourced care pathways, with little support available to people with early or mid-stage OA; therefore, CPs are well positioned to provide information, support, and onward referral (Briggs et al., 2019; Darlow, Brown, Stanley, et al., 2023). Previous research in Canada has shown that CPs can use a questionnaire to effectively screen for OA, as >80% of patients with undiagnosed knee OA were identified (Marra et al., 2007). Canadian practice guidelines on OA management for CPs recommend that patients aged 45 years or older are screened for OA symptoms, and for those with OA symptoms, education, a medication review and treatment in line with current guidelines should be provided, together with referral to other HCPs as required (Kielly et al., 2017). In other studies, advanced physiotherapy practitioners have been shown to be able to deliver support for self-management for OA (Frost et al., 2022).

4.8 | Strengths and limitations

The study's strengths are that it has identified key domains for an extended CP role in OA management and that it is the first study to apply the TDF to identify barriers and facilitators to implementation, providing a replicable, theoretically based process for intervention development. The limitations of this study are that it did not meet the estimated sampling size for the CPs or other HCP surveys, which increases uncertainty around the percentages reported in this study. There were a small number of CP interviewees, and we were unable to recruit any other pharmacy team members (e.g., pharmacy technicians or assistants), so their voices are missing from these analyses. Other studies have also reported challenges in engaging community pharmacy in research, with key barriers being a lack of time and lack of renumeration (Crilly et al., 2017).

4.9 | Clinical and research recommendations

CPs are well-placed to support people with OA to self-manage their condition. Many barriers (such as access to patient GP records) need to be overcome to ensure that an extended role can be successfully delivered in the context of a busy community pharmacy. Future research should assess the feasibility of the extended role in clinical practice by eliciting views and experiences of all members of the CP team.

5 | CONCLUSION

This multi-methods study demonstrated that CPs and other HCPs had broad agreement on the potential role for an extended role for community pharmacies supporting patients with OA. A future feasibility study is required to provide evidence on its deliverability in clinical practice and should consider the identified barriers and facilitators in this study.

AUTHOR CONTRIBUTIONS

Melanie A. Holden, Simon White, Elaine Nicholls, Krysia Dziedzic, Adrian Chudyk, Adam Todd, Christine Walker, Colin Stanford, Elizabeth Cottrell, John Edwards, Christian Mallen and Nicola O'Brien conceived the project and secured funding to undertake it. All authors contributed to develop the study design. Joanna Simkins and Opeyemi Babatunde collected the qualitative data. Joanna Simkins, Melanie A. Holden, Opeyemi Babatunde, Simon White, Elaine Nicholls and Nicola O'Brien conducted data analysis. Joanna Simkins drafted the initial manuscript and Nicola O'Brien and Melanie A. Holden supported the writing of revisions. All authors commented on drafts and approved the final manuscript.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

Ethical approval to complete this study was provided by the West Midlands South Birmingham Research Ethics Committee (REC: 22/WM/0124).

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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