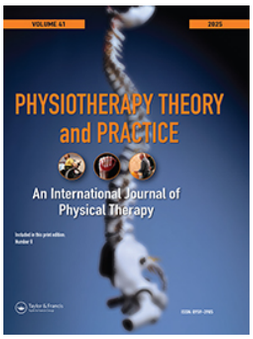

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QUALITATIVE RESEARCH REPORT

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Physiotherapists' perceptions on the management of musculoskeletal conditions in women of perimenopausal and menopausal age: a qualitative focus group study

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ABSTRACT

Background: The perimenopause and menopause are characterised by a reduction in estrogen that can affect tendons, fascia, cartilage, pain perception, and inflammatory processes, which may contribute to musculoskeletal pain. It is largely unknown if this is considered by physiotherapists when managing patients with musculoskeletal conditions.

Objective: To explore UK physiotherapists' perceptions of managing women of perimenopausal and menopausal age presenting with musculoskeletal conditions.

Methods: Using an interpretative qualitative phenomenological approach, eleven physiotherapists participated in semi-structured focus groups. The data were transcribed and analysed using reflexive thematic analysis.

Results: The three broad themes that relate to the overall research question included: 1). Knowledge, knowledge construction, and knowledge sharing; 2). Attitudes toward menopause in a changing healthcare landscape; and 3). How knowledge and attitudes combine to impact patient management. Our results indicate that knowledge of the perimenopause and menopause was limited to some common symptoms primarily drawn from personal experiences or nonscientific sources, and that this knowledge is rarely shared with others. Some participants indicated some, but limited, consideration of the menopause when managing musculoskeletal complaints. However, all participants agreed that the menopause should receive greater attention in musculoskeletal management in practice, education, and from key organisations to improve diagnoses and patient management.

Conclusion: This study provides insight into physiotherapists' perceptions of the perimenopause and menopause in musculoskeletal care. It highlights the importance of constructing knowledge from evidence-based sources, transferring knowledge to patients and colleagues, and understanding the menopause within a changing healthcare landscape to improve patient outcomes.

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Introduction

Reproductive aging in women progresses through several stages: early, peak, and late reproductive phases; early and late transitional stages (i.e., perimenopause); and early and late postmenopausal stages (Harlow et al., 2012). The perimenopause typically involves changes in menstrual cycle regularity before menstruation ceases completely (Li et al., 2016). It generally occurs between ages 45 and 55 years (Harlow et al., 2012). The perimenopause and menopause are commonly associated with a wide range of symptoms, with approximately 38–76% of women worldwide reporting symptoms (Moilanen et al., 2010; Zhao et al., 2019). While common symptoms related vasomotor changes (e.g., hot flushes, night sweats), sleep disturbances, weight gain, fatigue and mood changes (Baber, Panay, Fenton, and the IMS writing group, 2016; Sussman et al., 2015), joint aches and musculoskeletal (MSK) pain are also frequently reported (Baber, Panay, Fenton, and the IMS writing group, 2016; Strand et al., 2025), with a prevalence of 52–72% (Blümel et al., 2013; Gibson et al., 2019; Lu et al., 2020). These symptoms can significantly impact quality of life and work performance, with MSK pain being a frequently cited reason (Monteleone et al., 2018). A large cohort study of 4,407 women aged 45–54 in Scotland found that 68% of participants experienced joint pain in the past month, with 17% attributing their symptoms to the menopause (Duffy, Iversen, and Hannaford, 2012).

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Hormonal changes during menopause, especially the reduction in oestrogen, significantly affect the structure and function of MSK tissues such as tendons, fascia, and cartilage. It is known that oestrogen plays a role in maintaining tendon and cartilage health (Cook, Bass, and Black, 2007; Cowan et al., 2022; Marian et al., 2021) and preserving muscle strength (Greising, Baltgalvis, Lowe, and Warren, 2009). A reduction is oestrogen during menopause is associated with increased inflammation and fibrosis (Fede et al., 2016), which may predispose women to myofascial pain conditions such as fibromyalgia (Chinn, Caldwell, and Gritsenko, 2016). Additionally, menopausal women show a higher prevalence of MSK conditions such as greater trochanteric pain syndrome (Cowan et al., 2022; Ganderton, Semciw, Cook, and Pizzari, 2016) and osteoarthritis (OA) (Alexander et al., 2007; Marian et al., 2021; Williams et al., 2022). While the exact mechanisms remain unclear, reduced oestrogen levels are implicated in OA symptom flare-ups and tendon- or joint-related conditions. These physiological changes suggest that the menopause may contribute to a higher prevalence of MSK disorders that warrant consideration when treating and managing patients presenting to physiotherapy services.

The association between menopausal symptoms and pain has recently been reviewed by Strand et al. (2025), who identified key factors influencing pain perception in menopausal women, including hormonal fluctuations, vasomotor symptoms, and psychological influences. Oestrogen and progesterone are thought to modulate pain pathways by inhibiting nociceptive neurons (Kahn, 2006; Strand et al., 2025) and activating endogenous pain inhibition mechanisms (Watt, 2018). However, some experimental studies suggest postmenopausal women may have a higher pain threshold compared to premenopausal women (Tousignany-Laflamme and Marchand, 2012), and minimal difference exists between those using hormone replacement therapy (HRT), those not on HRT, and age-matched men (France et al., 2004).

Other research highlights the link between pain severity and menopausal symptoms. A cross-sectional study of 8,373 Latin American women aged 40–59 years found that those experiencing vasomotor symptoms (e.g., hot flushes and night sweats) had 17 times greater odds of reporting severe MSK pain (Blümel et al., 2013). Similarly, a longitudinal study by Mitchell and Woods (2010) over 15 years found that joint and back pain severity correlated with other menopausal symptoms, including depression, anxiety, stress, poor sleep, and weight gain. They suggested that exercise could exacerbate pain and recommended that clinicians be aware of the changing biology in perimenopause and menopausal women when considering treatment, discharge advice, and long-term management. Further research by Blümel et al. (2017), using a similar population, confirmed these findings, identifying a strong association between severe MSK pain, insomnia, depression, and anxiety. These women were also more likely to be classified as obese, independent of other factors such as education, smoking, and HRT use. Further, De Leeuw, Albuquerque, Andersen, and Carlson (2006) found increased activation in brain regions associated with pain perception in response to low oestrogen levels, though their study was small ($n = 9$) and had limited external validity. Together, this work supports increasing evidence of an association between pain perceptions and hormonal fluctuations during the perimenopause and menopause.

There is growing awareness within physiotherapy with regard to the effectiveness of different treatment modalities on symptoms observed during perimenopause, menopause, and post-menopause (see Lialy et al., 2023 for a review on this topic). However, it is largely unclear if there is consideration of menopausal symptoms by MSK physiotherapists, which may lead to incorrect diagnosis, mismanagement, poorer outcomes, reduced patient satisfaction and an increased health burden on society. For example, a poorly devised exercise programme for an oestrogen-deficient tendon may not lead to correct rehabilitation and onward investigations due reduced tensile strength, collagen synthesis and density, a smaller fiber diameter, and greater tissue degradation (Frizziero, Vittadini, Gasparre, and Masiero, 2014). Further a woman with unidentified menopausal symptoms may be referred for non-pharmacological or pharmacological pain management (Strand et al., 2025). There is a lack of current research in this area, and with a recent increase in public attention on the menopause due to media interest and reports, as well as dissemination of evidence for health care professionals (British Menopause Society, 2023), it is important to understand if physiotherapists are aware of the relevance of the menopause and its impact on MSK conditions. However, it is unknown whether physiotherapists consider the menopause during consultation, and if so, if it affects their intervention selection and expectations of treatment outcome. Insight into this area may increase knowledge and understanding, and can potentially improve the evidence-based management of menopausal women presenting to physiotherapy with MSK conditions, enhancing outcomes and reducing potential unnecessary investigations and interventions. Therefore, the aim of this study is to use a phenomenological qualitative approach to explore

physiotherapists' perceptions on the management of MSK conditions in women of perimenopausal and menopausal age.

Material and methods

Study design

The Consolidated Criteria for Reporting Qualitative Research (COREQ; Tong, Sainsbury, and Craig, 2007) guided this study, ensuring comprehensive presentation of the study methods, findings, and interpretations. The only criterion not addressed within COREQ was the concept of data saturation. In a recent study, Braun and Clarke (2021) argued that data saturation might not be applicable in reflexive thematic analysis, as codes can evolve conceptually throughout the analysis.

An interpretative qualitative phenomenological design was employed in this study. The phenomenological approach was chosen to explore the lived experiences of the participants through their lens (Beck, 2021). The study was grounded in a relativist ontological position, recognising the existence of multiple realities regarding MSK condition management in this population (Saunders, Lewis, Thornhill, and Bristow, 2023). The constructivist epistemology adopted in this study assumes that knowledge is constructed through interactions with educational sources, healthcare professionals, and patients themselves. This aligns with the interpretivist research paradigm outlined by Saunders, Lewis, Thornhill, and Bristow (2023), where researchers play a key role in the research process through their values, interpretations, and reflections.

Participants

Twelve participants were recruited via social media advertisements and snowball sampling, aiming to include individuals with diverse academic and clinical experience, and working across various clinical settings and geographical locations, to ensure a depth of discussion during the focus groups (Holloway and Galvin, 2017). It was anticipated that twelve subjects, interviewed in three focus groups, would enable the topic to be fully explored and provide sufficient information to substantiate theoretical explanation of the data, given the homogenous nature of the group being sampled and the time frame available for the study, whereby pragmatism is balanced with data adequacy (Holloway and Galvin, 2017; Offredy and Vickers, 2010; Vasileiou, Barnett, Thorpe, and Young, 2018). The research project was approved by the Faculty of Health and Education Research Ethics Committee, Manchester Metropolitan University (Application No. 59890). Written and verbal informed consent was provided by all participants.

Eligibility criteria

The inclusion criteria were MSK physiotherapists based in and practicing in the United Kingdom, who assess, diagnose, and treat women of perimenopausal and menopausal age. All physiotherapists were registered with the Health and Care Professions Council and had access to Microsoft Teams. Physiotherapists who were unable to recall any experiences of working with women of perimenopausal and menopausal age presenting with MSK conditions were excluded from the study.

Procedures and data collection

A pilot study was conducted with a single MSK physiotherapist in January 2024 to ensure the appropriateness of the questions, transitions, and probing. At the end of the session, feedback was gathered, and amendments were made to the interview schedule before the focus groups took place. No data from the pilot study was used in the analysis.

To explore physiotherapists' perceptions, focus groups were chosen as the method of data collection (Holloway and Galvin, 2017). This approach allows participants to share their insights and interact with one another (Offredy and Vickers, 2010). Focus groups were conducted online using Microsoft Teams between the 11th of January 2024 and 18th of April 2024, with the researcher acting as a facilitator. The session began with a brief introduction to the principal researcher, the aims of the research, and how the focus group would work. Key rules for the focus group were outlined, including respecting other viewpoints, avoiding talking over each other, and information on answering (or not) specific questions. Each focus group was audio and video recorded and stored temporarily for accuracy checking of the transcripts.

The focus group interviews consisted of a semi-structured interview (Supplement 1) with a series of topical and open, non-leading questions posed and probes used to gain greater insight where applicable (Holloway and Galvin, 2017; Offredy and Vickers, 2010). An interview guide was followed to allow ideas on the research topic to surface whilst allowing lines of inquiry to be followed (Holloway and Galvin, 2017). The questions were intended to develop the conversation and bring others within the focus group into the

Table 1. Characteristics of participants.

Pseudonym	Age	Years' experience	Sex	Working area	Focus group
Jacqueline	31–40	5–10 years	F	FCP, NHS	1
Tina	41–55	20+	F	Secondary care, NHS	1
Brenda	41–55	20+	F	FCP	2
Judith	41–55	20+	F	Charity	2
Stephen	41–55	20+	M	Private Practice	2
Bonnie	41–55	20+	F	Secondary care APP ankle and foot clinic, NHS	2
Norma	41–55	20+	F	Private Practice	3
Tammy	41–55	20+	F	Private Practice	3
Joan	41–55	20+	F	Private Practice	3
Theresa	41–55	20+	F	APP Hands, Secondary Care, NHS	3
Elizabeth	41–55	20+	F	Education, Private Practice	3

F = female, *M* = male, FCP = first contact practitioner, APP = Advanced Physiotherapist Practitioners, NHS = National Health Service.

discussion where possible. Focus groups were structured to last between 60 and 90 minutes (see Table 1 for the number in each group).

To gather a range of opinions and experiences from the various clinical settings in which physiotherapy is practiced (e.g., national services, private services), we opted to use social media as the recruitment methods as well as allowing snowball sampling. The recruitment strategy aimed to maximise diversity by including physiotherapists from various clinical settings, geographical locations, and professional experiences rather than restricting recruitment to local clinics, thus facilitating a greater degree of transferability within a single healthcare population. To enhance the dependability of the study, a second, experienced, researcher was involved in assisting in generating the focus group script, attending each focus group to make notes on anything of interest, analysis of the data, and ensuring correct storage of data.

Data processing and analysis

The recordings from the focus groups were transcribed verbatim using the transcription function in Microsoft Teams and checked for accuracy by the same researcher who conducted the interviews (Kate), who listened back to the audio before importing the transcripts into NVivo (Version 14) for analysis. A reflexive thematic analysis approach was employed in this study as a theoretically flexible interpretative approach (Braun and Clarke, 2020; Joy, Braun, and Clarke, 2023). Reflexivity was central to this study, particularly given the lead researchers' expertise in MSK physiotherapy and interest in female health and reproductive aging (Braun and Clarke, 2022; Wilkinson, 1988). However, we also recognised the functional (e.g., focus groups) and disciplinary (e.g., characteristics of MSK physiotherapist) influence on the study, which were considered throughout. To support personal reflexivity, several discussions were held between the lead researcher (Kate) and peer debriefer (Nick), which aims to elicit self-reflection on their influence of the data (e.g., collection, interpretation, presentation).

Several steps were undertaken (Braun and Clarke, 2020; Byrne, 2022). The lead researcher (Kate) familiarised themselves with the data through repeated reading of the transcripts. Initially, coding was conducted inductively, identifying elements within the data that related to the research aims. This process was iterative and reflexive, ensuring that coding was shaped both by the data and by the researcher's interpretative engagement. The coded transcripts were reviewed by a second researcher (Nick), who was less familiar with the topic but has experience in qualitative research. This served as a form of peer debriefing that offer alternative perspectives on the data and encouraged reflexivity (McMahon and Winch, 2018). Following this, the codes were actively developed into broader themes through a process of interpretation and refinement, after which they were reviewed again by the same peer debriefer. The final themes were then defined and named (Braun and Clarke, 2020) before being examined in relation to various theories and models, including evidence-based practice models, knowledge and power, models of information behaviors, social constructionism, and symbolic interactionism. These theoretical frameworks were selected as they provide insights into how information is sought, constructed, used, and shared within the shifting power dynamics of patient care. Throughout data collection and analysis, the lead researcher (Kate) engaged in ongoing reflexivity to ensure that their personal interest in managing menopausal women with MSK conditions did not unduly influence the process or findings. This was facilitated through the use of a reflexive diary, which was regularly discussed with the final author (Nick) to maintain an appropriate level of detachment at critical stages. To protect participants' identities, pseudonyms were assigned and used throughout the study.

Results

Participants' characteristics

Eleven trained physiotherapists, who were largely not known to the research team, participated in the study from an initial sample of 12. Their age grouping, experience, sex, and area of work are presented in Table 1. One individual withdrew due to personal reasons, resulting in only two participants in the first focus group. Each focus group lasted between 55 and 75 minutes.

Key findings

The key findings from this study are discussed as three broad themes constructed from various codes, each supported by multiple quotes. The three broad themes that relate to the overall research question include: 1. Knowledge, knowledge construction, and knowledge sharing; 2. Attitudes toward menopause in a changing healthcare landscape; and 3. How knowledge and attitudes combine to impact patient management. A visual summary of these themes and associated codes is presented in Figure 1. We also highlight relevant theories that will be drawn upon in the Discussion.

Knowledge, knowledge construction, and knowledge sharing

Knowledge of the menopause: There was mixed evidence about the participants' knowledge of the perimenopause and menopause. Some participants recognised the symptoms and understood their potential impact on patients. For example, there was a suggestion that the symptoms can be caused by systemic changes in hormonal concentrations Four participants linked this to hormonal sensitivity. These sentiments are encapsulated in the following three quotes:

> It just effects every cell in your body, doesn't it? And so, when to try and describe, try and work out whether you think women that may be around that age, it could be. I mean it is just anything they present with; it's going through my mind thinking this could be hormonal this presentation of symptoms. (Joan)

> So again, the menopause I think is so different for so many different people (others in the group agreed), and there is an element of if you are sensitive to hormones through PMT, puberty, pregnancy, then maybe your menopausal journey through hormones will be slightly more imposing and difficult, whereas if you weren't affected through your life by hormones, the chances are you might not be later on. (Elizabeth)

> If you're sensitive to your hormones, you will probably be presenting to a physio at some point with patella pain, anterior knee pain, sacroiliac pain, lower back pain. You are that group of patients already, so these are probably as well patients that are known to physiotherapy at different stages of their life, they just haven't necessarily had anyone ask about their hormonal health yet. (Elizabeth)

Beyond the general changes described, most participants could recognise specific symptoms associated with the perimenopause and menopause. Tina described the following symptoms: "Hot flush is the

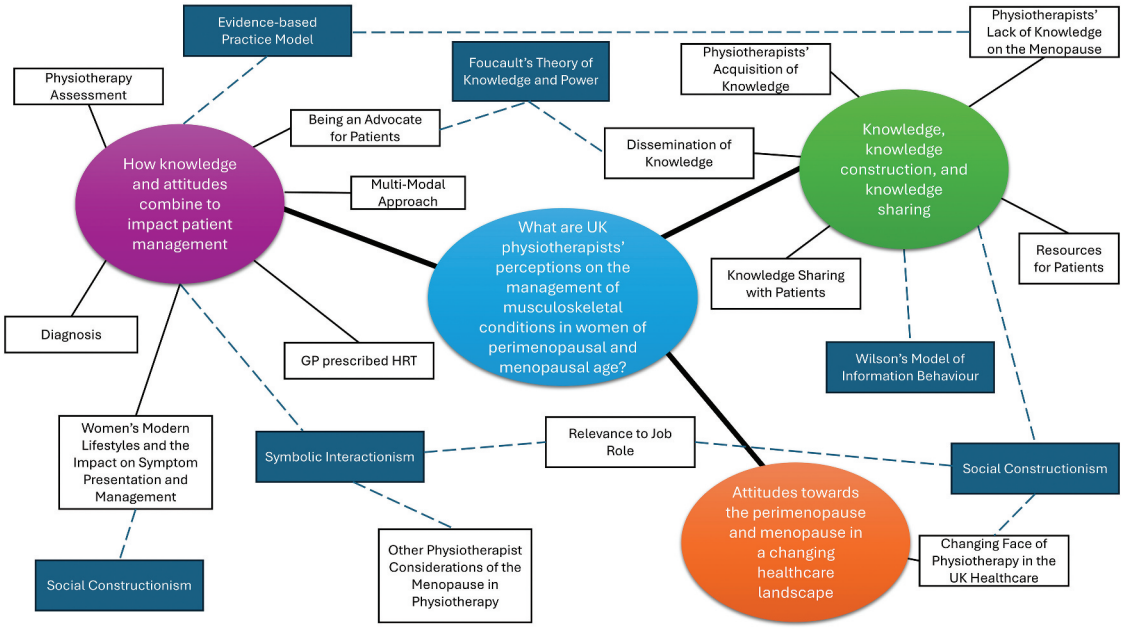

Figure 1. Themes, codes, and supporting theories or models.

classic one that everyone talks about . . . acne, irritability, anxiety . . . low mood, libido, joint pain. God, the list goes on. Brain fog. Multiple joint pain does seem to keep coming into us." Others supplemented this list with "tendinopathies and tendon issues," "muscle ache," "flushes," "bloating," "night flushes," "sleep," "appetite," "dry skin," "headache and migraines," and "change personality." Tina further explained that symptoms presenting bilaterally "seems to fit the bill though, doesn't it?" when considering whether symptoms are menopause-related.

Whilst there was recognition of the symptoms, and one participant even suggested, "I really love treating it as well because I think there's loads you can do. And I think it's a fascinating topic" (Stephen), others felt less confident about their own knowledge and that of younger physiotherapists:

> I was quite aware coming into this webinar that I absolutely don't really have a lot of knowledge on menopause other than really that of a lay person . . . . . but I don't feel I've got any postgraduate training or expert knowledge on menopause so I'm very wary about the type of advice I might dish out. I might touch on it in a where are you with the menopause? Have you talked to your doctor? But that might be as far as I go because I don't feel like it's something I should be dishing out advice on, on the type of stuff that you were just talking about just because I feel like my specialist area is the foot and ankle and it's not hormones and it's not menopause and I don't know my blood tests and I don't know about prescriptions, so, so other than a basic signpost, I think it's just it's just an awareness that I might treat them slightly differently . . . . . There's a bit of a contrast of probably client group really, but also where our remit lies with what advice we give out. (Bonnie)

> I feel like my experience and my knowledge of it is just layperson level. It's not much more from chatting to my friends. (Bonnie)

> I am also astounded at how little we are taught about it . . . . But embarrassingly, as a health professional, I probably didn't know very much like I've worked in MSK for 6–7 years like I did my rotations and then I, you know, and I just don't feel like we were ever really it was ever really discussed. (Jacqueline)

In response to the above quote, Tina went on to say, "I'm astounded absolutely astounded I had, I thought it was just you stopped your periods, and you get hot."

Whilst the quotes above indicate a lack of knowledge and confidence in some MSK physiotherapists,' almost all participants expressed a desire to improve their knowledge to provide better treatment for their patients:

> I'd love to know more. I'd love to spend time with somebody and learn more about the hormones and give some of the right advice because it's a postcode lottery where you have it and what you get. And if we can give some better information that would make me feel happier because it makes me feel like I'm doing my job better. (Judith)

Construction of knowledge on the perimenopause and menopause: Knowledge was largely constructed from three sources according to the participants in this study. First, participants were aware of organizational information and specialists available through services such as National Institute for Health and Care Excellent (NICE) or the National Health Service (NHS). Secondly, much of the knowledge gained was constructed from participants' personal experiences of going through the perimenopause and/or menopause. For example, Tina expressed how knowledge was "from first-hand experience. So, I'm having treatment. I had to read up on everything because I requested HRT before my 40th birthday." Similarly, Tina indicated that "before I was having my own issues [related to the menopause], I would never have contemplated it." Furthermore, other participants related their knowledge back to family and friends: "All my friends are, and I've got a variation of symptoms. I can ask one of them and I can get a list of about 20 things." (Elizabeth).

Whilst personal experience allowed some to gain knowledge of symptoms, Tina highlighted that caution might be needed. For example, they reflected on their experience in a respiratory hospital following COVID-19:

> We're a very big respiratory hospital so we had massive, long COVID clinics and they were just coming in and coming and coming in. Bloody hell. These are all menopausal sounding to me. Is that just because I'm jumping on the bandwagon for my own personal experience? You know, I admit I worry I might have a bit of bias sometimes, but I thought this is they all sound so similar. (Tina)

It was also recognised that a reliance on experience was potentially an issue for younger physiotherapists who have not experienced the perimenopausal or menopausal symptoms or treated as many patients.

The third source of information was the media. A common theme across almost all participants was reference to social media, podcasts, and the "Davina McCall documentary:"

> Davina has brought it to sort of like the forefront as a personality which has helped everybody. And sort of like helped more the awareness of everything. (Judith)

> I think this Davina thing's been massive in terms of public awareness and improving awareness that there's a link with mental health, there's a link with brain fog, there's a link with mood alterations. (Bonnie)

Further, Jacqueline commented on how their patients are developing similar knowledge from these media outlets in relation to their symptoms:

> You do get the ones that kind of come and say, could it, could it be this? You know, actually, like I've been having a little read or Davina McCall's been a big, yeah, "I've been watching the Davina programme," or, you know, it's been on a podcast or, you know, and actually that you can see the wheels start to turn and they're like, "could it be?" (Jacqueline)

Whilst there was collective agreement that key personalities in the media discussing these topics might bring important health issues to the forefront, Norma did express some concerns:

> The only worry I have is sometimes that people think, oh, I've seen Davina on TV and she's got this and therefore that is me. And actually, I think we just need to be really careful about that as well. (Norma)

It was notable that access to evidence beyond the NICE guidelines (all were aware of these guidelines) and previous exposure to conversations and education on the menopause were lacking across the focus groups. Tina discussed how they "feel astounded that, as a woman, I didn't know what was gonna happen to us all. We had the period classes at school. We had the baby classes through pregnancy. And then nothing," suggesting little is available to prepare women for these changes. Further, access to the latest evidence was rarely discussed in these focus groups, with some not accessing the published literature on this topic. Only one participant discussed how they had accessed the "British Medical Journal" specifically, as it was "something that came up in my master's thesis." Other participants suggested they rarely engage with the academic literature to support their role when managing patients presenting with MSK conditions.

Sharing knowledge on the menopause: Participants expressed the need to share knowledge on the menopause in an attempt to develop and use their understanding. Five participants discussed the idea of sharing their knowledge with patients based on their own experiences to open up the conversation on the topic, depending on the patient:

> I am comfortable with discussing my own sort of health situations with patients regarding menopause, not saying that copying me and doing what I've done is right, but just sort of sharing that I've looked into it and appreciated the evidence that it might, you know, that it's had on me, which I have gone down the HRT route because of rheumatology-type symptoms. (Tammy)

> I mean, if I know patients really well, I wouldn't feel uncomfortable sharing that information, but I don't tend to share other stuff, if you know what I mean. So I pick and choose probably what I would share, but I don't think, depending on the patient, that that's wrong. (Norma)

Sharing knowledge with other physiotherapists, however, was not generally recognised as something that is readily done by those in this study. This sentiment was reflected by Tina, who said, "Even though I seem to know quite a lot compared to my colleagues, I still don't believe, ironically, I'm the person to deliver that in-service." That said, participants did recognise value in sharing information within the context of the focus groups. It was highlighted how the focus group itself allowed them to discuss the topic and learn from others:

> I'm finding it fascinating. I've learnt already. I'm like, oh, I think probably the reason why I wanted to do it, obviously to help. But I was like, actually, let's talk. I don't really know enough. (Jacqueline)

> It's [the focus group] really made me think actually, just doing this, that maybe I don't think about it enough and that I need to take, I need to research it myself. (Theresa)

Attitudes towards menopause in a changing healthcare landscape

Throughout the focus groups, there was a recognition that attitudes toward the menopause have changed or require further change to enhance clinical practice within what was acknowledged as a changing healthcare landscape. These discussions centered on 1). Education and curriculum, and 2). Normalisation of the symptoms associated with the perimenopause and menopause.

Education and curriculum: Participants across the groups discussed the need for greater dissemination of information by those in positions of authority. For example, Theresa and Brenda stated, "It really needs to be included in, like, the undergraduate sort of programme" and "The CSP [meaning Chartered Society of Physiotherapy] could do, you know, a campaign, couldn't they?," respectively. This sentiment was echoed by others, such as Stephen, who stated, "The university could be doing more because when they come like we do pathology, the pathophysiology, or do you stuff on tendons." Brenda reflected on their own experience, indicating that, "I don't think we did. The menopause wasn't even mentioned when I was at uni whatsoever." Furthermore, Elizabeth explained that:

> We were asking physios "What do we feel that we need to prepare our undergraduates now for first contact practitioner role." If juniors and young physios are going into that first contact practitioner role effectively, they should be asking those GP related questions on

> health as well (all others agreed). It shouldn't just be "what physio does this person need?" It needs to be that holistic, "What could be causing these symptoms" and realistically, if you're gonna be a first contact practitioner, you should be asking about unusual bleeding, changes in cycle, back pain. You know if you've got someone in front of you with back pain where you need you need to, you need to go down that ruling out metastatic, you need to be ruling out secondaries, you need to be ruling out endometriosis, all of that. So, I don't know if we are preparing our undergraduates properly for that even that from first contact and more and more because people can't get into their GPs, they go into private practitioners for their first contact because that's where they can get in. So, yeah, there is a bigger conversation to be had, I think. (Elizabeth)

However, participants acknowledged the challenges of covering a broad curriculum and the breadth of information it must cover, with Theresa noting that "the face of physiotherapy has changed." As a solution, Stephen suggested:

> It needs to go in, a little chunk in that sporting knee topic, doesn't it? Like it, it's, it's 50% of population, so the thing is it's half of those sporting knees, so it could easily be put into that because it's relevant to all to have those knees, isn't it? Half of those Achilles, it could. It's got a place in every, really got a place in every topic really. So it doesn't need to be a specialist course because I think like say if it was a specialist menopause training session, you might like, a 25 year old graduate physio male, he's gonna be like oof not interesting, I want to do football knees but actually if he's doing female football knees it's gonna be relevant, isn't it? Why not join those dots together. He doesn't see the connection. (Stephen)

Additionally, participants expressed a desire to create or participate in in-house service training on the perimenopause and menopause for those presenting with MSK conditions. There was a desire to integrate the perimenopause and menopause into in-service training among participants across focus groups, though they highlighted challenges in finding "someone comfortable and confident enough to talk about these things." Some recognised existing services that could be accessed, such as women's health specialists (noted by Tina) and general practitioners (GPs) (noted by Brenda and Stephen). Judith commented that Brenda and Stephen were both "very lucky to be in an area where you've got something like a good GP."

Continued professional development (CPD) was mentioned in each of the focus groups by multiple participants. While many recognised it as a possible solution, two key points of contention were raised: the availability and funding of courses, and the perceived relevance of menopause education to MSK physiotherapists. Firstly, Bonnie noted:

> When you're when you're sourcing your own CPD and you're potentially funding it yourself or you're doing it in your own time and there's a lot of competing stuff, there's lots of different ways of, of getting that teaching nowadays. Do they think they want to be on the menopause awareness, or would they much rather be doing the, the sporting knee or, you know, what's, what's the appeal to, to getting people an awareness that it might be useful for them to know about it? (Bonnie)

Secondly, Elizabeth noted that some might not recognise the relevance of the perimenopause or menopause within their patient population and offered a potential approach for MSK physiotherapists:

> Oh, women in the menopause are more likely to have this, you need to be doing this, they'll be like "Oh yeah, but my caseload doesn't have that many menopausal women in it." Maybe they haven't, they haven't made the link themselves. But if you say women in the age group 35 to 55 are more likely to present with and then you give the rheumatic pain in the hands, or you know you give the list of physical symptoms. If your patients are presenting with this, it may be that you need to sign post to and then give them the permission to have that conversation. And make it a part of the subjective history that we expect to ask – we expect to ask about your medication, we expect to ask about this, we expect now that everyone asks about hormonal health. (Elizabeth)

Finally, there was strong recognition across all three focus groups of the need to offer appropriate education to ensure that men, young physiotherapists, and those with limited exposure to this topic are well-positioned to discuss and consider it. Tina raised concerns in this regard:

> I don't think we have lots of, it seems to be more young men these days coming through starting as junior and coming through to Band 6 sort of level in the NHS and I honestly don't think it's [the menopause] on their radar. They're all, very sort of "exercise, exercise, exercise" and I do worry that they don't really engage with that side of things really, even just talking to patients. I think some of the younger females are exactly the same as well. Some of them are great, both men and women. So I'm not saying all the young men or the young women really, but I think, I think if I was a young man, I'd feel a bit awkward asking somebody in their 50s if they're hormonal, if they're going through their menopause. (Tina)

Normalisation of the symptoms associated with the perimenopause and menopause: With greater awareness of the perimenopause and menopause within society, some participants suggested that these stages are often used as a "catch-all" explanation for many symptoms

(Brenda, Tina, Stephen). For example, Brenda noted how, "A lot of women that I see in my clinics will just say, 'Oh, it's just part of being a woman, isn't it?'" Tina added that "they just pass it off as that's just what women do," and Stephen commented that some patients fail to "join the dots" or realise "it could be a manifestation of a bigger hormonal picture."

There was general agreement that caution is needed to avoid normalising symptoms without further investigation. When asked by other participants about assuming symptoms are due to menopause, Tina responded:

> Yeah, and that was the danger. And I think that's why, Jacqueline, you're really good at getting the bloods done because there's so much crossover. Som you, I still think it's good to get those baseline normal bloods. You know, inflammatory markers, things like that. So, yeah, I think you can assume too easily and then blow me down you might have missed something quite major. You know, the night sweats sort of thing. (Tina)

Norma then shared an example of a patient whose symptoms were initially attributed to the perimenopause but were later diagnosed as cancer:

> I had one lady recently, not recently, a little while back and she was putting down her what she thought was perimenopausal symptoms and weight gain and that ended up being a cancer. Now I know that's really rare, but I think we just need to sort of as a yeah, I'm sure we're all very mindful of that. (Norma)

Finally, Stephen cautioned that over-reliance on menopause as an explanation for symptoms could lead to poor clinical practice:

> Be like a hiding place for poor clinical work, couldn't it? It could easily be a oh, it's down to menopause because of our [redacted] physio or [redacted], you know? Poor health. It could be. Oh, you know what? It's this, it's that. It could be used as excuse for sort of poor input, couldn't it, or just like lack of, you know, lack of time or lack of availability. (Stephen)

How knowledge and attitudes combine to impact patient management

A key theme concerned how MSK physiotherapists' knowledge and attitudes toward menopause combine to impact patient management. Several points were raised by participants, particularly regarding diagnosis and treatment approaches.

Participants discussed instances where conditions such as fibromyalgia or long COVID might be diagnosed in patients presenting with symptoms that could also be explained by menopause. For example, Tina noted that "fibromyalgia is always in those middle-aged women" and highlighted a reluctance to diagnose it without first exploring the possibility of perimenopause or menopause. Similarly, Judith described how patients often present with "a cascade of problems. They'll start off with a shoulder problem, then an elbow problem, then a wrist problem, then a neck problem." Reflecting on this, Tammy emphasised the importance of recognising menopause as a potential factor:

> When you start talking to your patients where they are on their journey through perimenopause, menopause, it's recognising that a lot of women haven't even thought, it hasn't entered their radar in the same way it had entered mine. And once you start looking into it, it's like oh, these Eureka light bulb moments that just seem to sort of switch on and you think, oh, actually, how amazing is that? (Tammy)

Participants recognised the importance of advocating for patients, adapting management strategies, providing reassurance alongside realism, liaising with GPs, and offering additional resources. Education was also highlighted as an essential tool in patient management. Jacqueline noted that she avoids using "the typical chronic pain talk" when she suspects menopause-related symptoms in her patients, ensuring they receive appropriate support rather than a misdiagnosis.

In addition to enhancing their own knowledge, participants acknowledged the importance of educating patients to improve their healthcare experiences. Judith highlighted this, stating: "if I can give somebody a better helping chance because they're not getting it from their GP, at least they know what to ask for when they go to the GP, because a lot of the GPs don't know."

Similarly, Tina described how she is "not afraid to spend 10 minutes talking about the menopause and how hormones change with aging." She also directs patients to resources such as the NHS website, menopause.co.uk, and the Balance App (the latter noted by Tammy).

There were differing views on whether to recommend HRT when advising patients. Some participants expressed concern that women might "rush to the HRT" (Norma) believing it to be a "panacea" and instead suggested an initial focus on "cleaning up the lifestyle" (Tammy). However, across all three focus groups, there was general agreement that HRT can play a valuable role in managing perimenopausal and menopausal symptoms, ultimately enabling greater engagement with rehabilitation.

Discussion

The aim of this study was to qualitatively explore physiotherapists' perceptions of managing MSK conditions in women of perimenopausal and menopausal age. In doing so, three key themes were constructed:

knowledge, knowledge construction and sharing; attitudes toward menopause in a changing healthcare landscape; and how knowledge and attitudes influence patient management. These findings provide valuable insights into the perceptions of the perimenopause and menopause among experienced MSK physiotherapists in the UK that can be used to direct future education and training for MSK physiotherapists, to enhance overall knowledge and understanding, mitigate some of the risks of misdiagnosis, and provide appropriate medical advice to patients presenting with MSK conditions.

Many participants in this study revealed that their awareness of perimenopause and menopause was limited, primarily recognising a few symptoms. When knowledge was gained, it was largely through personal experience or informal sources, such as media, incidental encounters with specialists, or patient interactions. Few participants had obtained knowledge from academic literature, organisational websites, or clinical guidelines, although they were aware of NICE guidelines and NHS resources. As a result of this and the lack of education on this topic, there was understanding of the relevance of menopause to MSK conditions in women of perimenopausal and menopausal age. However, those with some knowledge felt comfortable sharing information with patients (within reason) but lacked confidence in sharing it with colleagues.

Wilson's Model of Information Seeking Behaviour (1997) (see Figure 1) suggests that physiotherapists seek information when they perceive a need within their role, which influences their information-seeking behavior. This model implies that knowledge about menopause is only sought if it is seen as essential for managing patients. In the absence of this perceived need, physiotherapists may not actively pursue this knowledge. The data from this study show that many participants recognised a need for information on the impact of menopause on MSK conditions. Those who did not see menopause-related knowledge as a learning need did not actively seek out information or engage in relevant learning opportunities, and their understanding remained at the level of a layperson (Tariq et al., 2023).

When physiotherapists gain new information, its processing and application are crucial within Wilson's Model of Information Seeking Behaviour, as it allows them to educate colleagues and encourage further information-seeking. According to Foucault's (1975) theory of knowledge and power, some participants felt confident sharing their knowledge with patients, using their trusted healthcare professional status to provide useful resources. However, they expressed less confidence when sharing their knowledge with colleagues, potentially due to a lack of formal training, their job title, or because the sources of information they relied on – such as social media or TV programs – were not considered trusted. This reluctance to share knowledge with colleagues may contribute to the ongoing knowledge gap.

From a social constructionist viewpoint, knowledge is built through social interactions and cultural influences (Burr, 2015), particularly within physiotherapy departments during in-service training or through conversations with colleagues. The focus groups in this study provided a space for participants to engage with one another and identify a shared learning need. This interaction indicates the need for educational opportunities that allow physiotherapists to share knowledge with colleagues, the wider healthcare team, and their patients. In support, there was a consensus that evidence-based training on menopause is necessary (British Menopause Society, 2023) and should be provided by influential institutions (Foucault, 1975), such as universities, specialist bodies, professional development courses, and respected organisations like the CSP (Tariq et al., 2023). To further develop this, Mead's social constructionism, which asserts that knowledge and identity are shaped through multiple interactions with others (Burr, 2015), and symbolic interactionism, a framework that emphasises the importance of sharing ideas and language to create common meaning (Griffin, 2012), can be applied. In this study's context, physiotherapists engage in interactions through training, conversations with colleagues, and patient interactions. These experiences help physiotherapists attribute meaning to the menopause and its impact on MSK assessment and management, depending on their role and perspective. Participants were able to interpret past experiences and use them to educate women presenting with symptoms such as anxiety, fatigue, low mood, and stress, which they had previously associated with normal life. These symptoms being perceived as "normal" was also highlighted by the House of Commons Women and Equalities Committee (2022), and the World Health Organisation (WHO, 2022) notes that women may not realise that their symptoms are related to menopause.

The study revealed that many participants were unaware of how menopause affects MSK conditions, as they did not consider this part of their role, nor had they previously inquired about it. This is particularly significant, as research indicates that perimenopause and menopause can significantly impact tendon health, strength, pain, and inflammation (Cook, Bass, and Black, 2007; Cowan et al., 2022; Fede et al., 2016; Greising, Baltgalvis, Lowe, and Warren, 2009; Kahn, 2006; Marian et al., 2021; Watt, 2018). Therefore, all physiotherapists working with MSK

conditions should be mindful of the potential effects of the menopause, especially in light of the WHO's (2022) finding that 26% of women globally were aged 50 and over in 2021, placing them in the menopausal or post-menopausal age group. While it is important for all physiotherapists to consider the impact of menopause, the study also raised concerns that some women might not feel comfortable discussing menopause with certain types of physiotherapists, possibly due to embarrassment (WHO, 2022). Additionally, male or less experienced physiotherapists, who may not have had similar experiences or established perspectives on menopause, might not inquire about menopausal symptoms with patients. However, the male participant in this study did express a willingness to discuss the impact of menopause on tendon pathology, though it is unclear whether other male physiotherapists would adopt the same approach.

Many participants expressed concern that the shift in healthcare, with physiotherapists becoming more involved at the front line, could result in women not being properly managed. Consequently, they recommended that training processes and the healthcare culture be reviewed to ensure that physiotherapists consider hormonal changes during subjective assessments. However, caution was advised, as physiotherapists must also remain vigilant for red flags that could mimic menopausal symptoms, such as pain, fatigue, or night sweats (NICE, 2021). This underscores the importance of clinical reasoning to adhere to the Health and Care Professions Council Standards of Proficiency for Physiotherapists (HCPC, 2024), ensuring that physiotherapists recognise the impact of the endocrine system on MSK conditions without being unduly influenced by patient assumptions or popular media representations.

Some participants expressed reluctance to recommend hormone replacement therapy (HRT), which may be linked to the stigma surrounding it (House of Commons Women and Equalities Committee, 2022). This reluctance may conflict with the evidence-based practice model, as HRT is considered a safe and effective intervention for perimenopausal symptoms (NICE, 2019) and should be discussed with patients presenting with these symptoms. Research has shown that addressing vasomotor symptoms with HRT can reduce pain (Watt, 2018; Williams et al., 2022), improve tendon physiology, and improve patient outcomes (Cook, Bass, and Black, 2007; Cowan et al., 2022). Some participants encouraged their patients to consult their GP about HRT to alleviate menopausal symptoms, which could, in turn, enhance their engagement with rehabilitation programs. Thus, accessible guidance for physiotherapists treating MSK conditions is necessary to improve the management of menopausal symptoms in clinical practice.

Limitations

As with many studies, there is potential for volunteer bias, whereby those who agreed to participate may have had higher motivation and interest in the topic (Offredy and Vickers, 2010). This aligns with the researcher's own interest following previous patient interactions and self-directed learning. Therefore, it is important to acknowledge that the transferability to other demographics of physiotherapists, with differing ages and experiences of reproductive aging, may be limited. However, the sample reflected a wide range of working areas, including charitable, private, and public health services. It is also noted that using a focus group might have limited some participants from demonstrating their knowledge of menopause in the context of MSK complaints. The focus groups consisted of a small number of participants (2–5), partly due to participant availability and the need to minimise rescheduling burden. Smaller groups can encourage more comfortable sharing and reduce domination, promoting equal representation. While using three focus groups might mean some themes were not fully captured, Guest, Namey, and McKenna (2016) suggest that 10–20% of "themes" could go undetected but that three focus groups is generally sufficient to identify prevalent themes within a dataset. Due to time and funding constraints associated with this forming a postgraduate physiotherapy project, response validation was not feasible, potentially allowing for some overlooked or misunderstood points, though peer debriefing helped mitigate this. Lastly, as the principal researcher served as both data collector and analyst, there is potential for researcher bias; though, the use of a "peer debriefer" helped mitigate this risk.

Conclusions

This study provides insight into the perceptions of UK physiotherapists managing women of menopausal age presenting with MSK conditions. The data suggests that much of the knowledge gained about the perimenopause and menopause was from personal experience or weak levels of evidence despite there being extensive literature evidencing the impact of hormonal change on MSK conditions. With the increased frequency of physiotherapists as first contact practitioners, and the importance of fostering a supportive environment for patients, it has become increasingly important to ensure an effective management strategy. As busy clinicians, physiotherapists will only seek information they deem relevant; therefore, to increase knowledge in this area, it

is recommended that training programs include education on hormonal changes on the presentation of MSK conditions to improve patient-centered outcomes and satisfaction as well as reduce the health burden on society.

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Data availability statement

The terms of our ethics approval and participants' consent do not allow the data to be made publicly available.

Ethics approval

The research project was approved by the Faculty of Health and Education Research Ethics Committee, Manchester Metropolitan University (Application No. 59890). Written and verbal informed consent was provided by all participants.

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