



Original article

Healthcare professionals' experiences of delivering pain science education to adults from ethnically minoritised groups

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ARTICLE INFO

Keywords:

Pain
Pain science education
Ethnic minority
Cultural competence

ABSTRACT

Background: Pain Science Education (PSE) seeks to increase patients understanding of their pain, to improve clinical outcomes. It has been primarily developed and tested within western cultures. There is a lack of research exploring its use with people from ethnically minoritised groups.

Objective: To explore Healthcare Professionals (HCPs) experiences of delivering PSE to people with persistent pain from ethnically minoritised groups.

Methods: In this qualitative study semi-structured interviews were carried out with a convenience sample of 14 HCPs who routinely deliver PSE to patients from ethnically minoritised groups. The interviews were analysed using reflexive thematic analysis.

Results: Three themes were identified: 1) *Biomedical model or disengagement*, 2) *Pain is a taboo topic*, and 3) *The importance of cultural competence*. Participants believed that people from ethnically minoritised groups disengaged with PSE sooner in comparison to non-ethnically minoritised groups and this was rooted in a strong biomedical understanding of pain and preference for biomedical treatments. Addressing patients' beliefs was deemed difficult as participants felt that pain was considered a taboo amongst some ethnically minoritised groups and HCPs lacked sufficient training in cultural competency to confidently address their pain-related misconceptions.

Conclusions: Overall, HCPs found that many people from ethnically minoritised groups held strongly biomedical views and/or a cultural reluctance to discuss pain. These factors made pain discussions challenging leading to disengagement from PSE and a preference for passive care. Cultural competency training and access to culturally competent PSE resources may facilitate engagement with PSE for people from ethnically minoritised background.

1. Introduction

Persistent (or Chronic) pain is pain which persists beyond normal tissue healing time, which is assumed to be ≥ 3 months (NICE, 2021). Persistent pain is a global health challenge and associated with considerable costs to health care systems (Dueñas et al., 2016). Approximately 28 million people in the UK live with persistent pain (Fayaz et al., 2016) and the cost to the UK Economy in terms of work loss alone is estimated at £10.7 billion (NICE, 2016).

There is a higher burden of persistent pain on people from ethnically minoritised groups (Singh et al., 2018; Versus Arthritis, 2021). Individuals from ethnically marginalised and socioeconomically disadvantaged groups tend to have higher levels of persistent pain (Craig et al., 2020). In the United Kingdom (UK), the prevalence of persistent

pain in ethnically minoritised groups such as Black, South Asian, mixed ethnicity and 'other' ethnicity groups are higher than those who identify as white (Jones et al., 2014). In the United States of America (USA), native Americans and people identifying as mixed race have higher prevalence of pain than other ethnic groups (Zajacova et al., 2022). Similarly, in Europe, people of Asian descent have significantly more pain, greater psychosocial impairment, and a larger impact of pain on their life in comparison to those of European descent (Lewis and Upsdell, 2018).

Pain science education (PSE) is a form of pain education which has existed for ~20 years and is commonly used in pain management (Moseley et al., 2024). PSE is an evidence-based pain education usually delivered by healthcare professionals (HCPs) who ideally are trained in PSE delivery through postgraduate training. PSE attempts to help the

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Received 5 July 2024; Received in revised form 21 September 2024; Accepted 26 September 2024

Available online 27 September 2024

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patient/consumer to reconceptualise their understanding of pain away from the outdated biomedical model towards a biopsychosocial model in keeping with contemporary scientific understanding of pain (Moseley and Butler, 2015; Watson et al., 2019; Moseley et al., 2024). There is a growing body of evidence supporting PSE as an effective intervention for people with persistent pain (Louw et al., 2011, 2016; Clarke et al., 2011; Cuenda-Gago and Espejo-Antunez, 2017; Yun, 2017; Traeger et al., 2018; Wood and Hendrick, 2019; Watson et al., 2019; Siddall et al., 2022). It is also recommended within pain management guidelines (British Pain Society, 2021; Fitzcharles et al., 2021; NICE, 2021). Additionally, a small number of qualitative studies have reported positive patients experience of PSE (Robinson et al., 2016; King et al. 2016, 2018). However, PSE itself was developed within westernised countries and the vast majority of RCTs published to date comes from groups working in westernised countries (Louw et al., 2016; Wood and Hendrick, 2019; Watson et al., 2019; Bulow et al., 2021; Bonatesta et al., 2022), with little indication of whether those from ethnic minorities were involved as participants.

Tailoring care so that it is bespoke to the culture and needs of people from ethnically minoritised groups may be important (Craig et al., 2020). Small exploratory studies that have delivered PSE to minority groups where the material was adapted to that group have shown promise (Cooper et al., 2023). However, there is a significant paucity of research in this area. This is important as ethnicity and culture can influence pain experience and which interventions work best (Callister, 2003; Peacock and Patel, 2008; Reis et al., 2022). It is unclear if PSE is acceptable and useful for minority groups or what if any challenges may exist when delivering PSE to minority groups.

The aim of this study was to explore HCPs experiences of delivering PSE to adults from ethnically minoritised groups with persistent pain. Doing so may help to explore the appropriateness of PSE for this patient group and may help to identify strategies to adapt/improve PSE delivery amongst people from ethnically minoritised groups.

2. Methods

2.1. Registration and reporting

The protocol was registered with the Open Science Framework (10.17605/OSF.IO/H2G43). The study is reported following the consolidated criteria for reporting qualitative research (COREQ) [Appendix A] (Tong et al., 2007).

2.2. Study design

This study was grounded in a Phenomenological approach and used reflexive thematic analysis (TA) to explore the experiences of HCPs who deliver PSE to patients with pain from ethnically minoritised groups. A phenomenological approach was selected because it explores peoples' lived experience of a thing or event which aligns with the aim of the study (Tomaszewski et al., 2020). Reflexive TA allows the understanding of participants' experiences through the analytical lens of the researcher and the findings and interpretation is logically and transparently grounded in the participants' transcripts (Braun and Clarke, 2021a,b). Reflexive TA is theoretically flexible which means it reflects the values of a qualitative paradigm, centring researcher subjectivity, organic and recursive coding processes, and the importance of deep reflection on, and engagement with data (Braun and Clarke, 2019).

2.3. Recruitment and sample

Individuals met the inclusion criteria if they were a UK registered HCP delivering PSE to adults with persistent pain from ethnically minoritised groups. Healthcare professionals are healthcare providers who diagnose, prevent and treat illnesses, injury and other physical and mental impairments in accordance to patient's needs (World Health

Organisation, 2013). The list of HCPs includes doctors, nurses, pharmacists, dentists, osteopaths allied health professions (Physiotherapist, Radiographer, Clinical Psychologist etc.). This study aimed to recruit a convenience sample of 12–15 participants who met the eligibility criteria. To facilitate study planning, a target sample of 12–15 participants was set as such sample sizes can bring about higher levels of thematic saturation in homogenous groups (Guest et al., 2006, 2020; Pietkiewicz and Smith, 2014; Braun and Clarke, 2021a,b). Participants were recruited through email messages sent via the North East Musculoskeletal Society (NEMS), the Physiotherapy Pain Association and Council for Allied Health Professions Research (CAHPR) which has a broad network of healthcare professionals. Prior to the interview participants' demographic information were recorded. Data were collected between October 2022 and April 2023. This study was approved by the University Research Ethics and Governance Committee and all participants were provided written informed consent and participant information sheet.

2.4. Exposure

Pain science education is often aligned with the concepts from the book "Explain Pain" (Butler and Moseley, 2003). PSE is a biopsychosocially informed educational approach which aims to change an individuals' conceptualisation of pain from it being a direct marker of tissue damage or disease to reflecting the unconscious perceived need to protect body tissue (Butler and Moseley, 2003; Moseley and Butler, 2015; Moseley et al., 2024). It can be delivered within a group setting or in a one-to-one setting, in one or multiple sessions, with total durations varying from 30 min to 3 h plus within the literature (Louw et al., 2016; Watson et al., 2019).

2.5. Data collection

In-depth semi-structured interviews (see interview script appendix B) were carried out with eligible participants focused on their experiences of delivering PSE to people from ethnically minoritised groups. The process was piloted before formal data collection began and two interview questions on PSE delivery structure and frequency were added post pilot. All interviews were audio recorded and undertaken by JP and took place online using Microsoft TEAMS. The interviews were automatically transcribed using Microsoft TEAMS and checked for accuracy by JP and the participant. Once the participants confirmed the accuracy of the transcripts through email, the recording was permanently and securely deleted, and the transcripts were rendered non-identifiable.

2.6. Data analysis

This study used reflexive TA in keeping with the processes of Braun and Clarke (2022). Once the interviews were transcribed, transcripts were coded using NVIVO software (version 12). Personal reflexivity is when researcher's values shape their research and knowledge produced relating to social positioning (Braun and Clarke, 2022). For example, JP is considered as an insider because, as an HCP, she belongs to the group to which the participants belong. Simultaneously, as an individual from an ethnically minoritised background, and thus identifiable with the individuals the questions were about, she was also an outsider. JP [Asian British, female, state registered physiotherapist, doctoral candidate] led the analysis, with additional input from CR [White non-British, male, state registered physiotherapist with a specialism in PSE, PhD] and JF [White British, male, non-HCP, PhD]. JP is currently undertaking her Doctorate and as part of her Doctorate, she has undertaken modules on qualitative research and has undertaken this study under the supervision of her supervisor team who have published multiple qualitative studies. Both CR and JF have experience of undertaking qualitative research, both have taught on research methods modules including qualitative

methods at university levels and have published multiple qualitative papers. Neither have received formal qualitative methods training.

JP undertook an active read of the transcript and began initial coding. Following this, a process of peer review was carried out to facilitate a deeper understanding of the topic and to refine the themes. JP and JF both read two transcripts and then met to discuss JP's initial codes and discuss identified patterns across the transcripts. Following this discussion, JP reflected on the ideas that emerged. An overview of the developing themes was discussed with CR. JP then coded the remaining transcripts (see coding tree [appendix C](#)). Further discussions were held amongst the wider team and a full narrative was then developed using illustrative quotes to support the themes.

3. Results

3.1. Participant characteristics

Fourteen HCPs (mean age 35yrs [4♂ 10♀]) participated in interviews lasting 42–69 min ([Table 1](#)). Nine participants identified as White British, three as Asian/Asian British and two as White Other. Twelve participants were physiotherapists, one participant was pharmacist and another participant was osteopath and all participants worked within the National Health Service (NHS). No individuals refused to participate or drop out.

3.2. Themes

Three themes were derived from the data. These were not mutually exclusive and there was clear evidence of overlap between them: 1) Biomedical model or disengagement, 2) Pain is a taboo topic, 3) The importance of cultural competence.

3.2.1. Biomedical model or disengagement

Participants felt that individuals from ethnically minoritised groups were more familiar and comfortable with the biomedical model of care and were keen to seek out “medicine” or care compatible with this model. Participants believed that patients, not originally from the UK, described it as easier to access “medicine” (biomedical care) in their country of origin and had similar expectations of accessibility from the UK's NHS. It was perceived that these individuals became frustrated if biomedical investigations/interventions were not provided immediately within the NHS and would sometimes travel abroad to access such care. However, it was noted that non-minority patients often report similar frustrations and travel abroad to access private healthcare. This resulted in disengagement with UK healthcare amongst minority and non-minority groups alike.

‘Because they think why can you not send me for a scan all the time that's one big battle ... And then a lot of these patients have gone privately either here or in their home country. So, I have had Eastern European patients who have gone back to Poland or Germany. I have had Asian patients who have gone back to India and they have paid for their full body MRI to check if there's something wrong,’ P1.

‘There was a British[non-minority] patient who went to Spain and bought high dose[s] of ibuprofen ... lost trust in the system so they [patients, not necessarily minority or non-minority ethnic background] then reaching out to places where they can trust and feel comfortable’, P1.

This corresponded to a perceived dominance of a biomedical model amongst minorities, participants felt it was difficult to explain the concepts of PSE to these patients. They felt that individuals from ethnically minoritised groups do not respond well to PSE when they don't understand the concept of PSE. The participants described that some people from ethnically minoritised groups have unrealistic expectations from HCPs regarding treatment for their persistent pain, having a mindset of wanting to be fixed or cured rather than managed, and thus not seeing

Table 1
Demographic information of participants.

Participant ID	Age (years)	Gender	Ethnicity	PSE delivery Structure*	PSE delivery frequency*	Training	Job title	Number of years qualified
1	31	Male	Asian/Asian British	Both	Daily	EP, NHS in-service training related to pain management	Pharmacist	More than 5 years
2	40	Female	White British	Both	Daily	MSc Advanced Pain Management	Physiotherapist	More than 5 years
3	32	Female	White Other	Both	Daily	EP	Clinical Pain Specialist/Osteopath	3 years
4	49	Female	Asian/Asian British	Both	Weekly	EP, PhD in pain education	Physiotherapist	More than 5 years
5	27	Female	Asian/Asian British	Both	Daily	Research placement – PSE	Physiotherapist	3 years
6	46	Female	White British	1-2-1	Daily	EP	Physiotherapist	More than 5 years
7	50	Female	White Other	Both	Daily	MSc Orthopaedic Medicine, EP	Physiotherapist	More than 5 years
8	33	Female	White British	1-2-1	Daily	Webinars on PSE	Physiotherapist	3 years
9	25	Female	White British	Both	Weekly	CPD course on PSE	Physiotherapist	3 years
10	28	Female	White British	Both	Weekly	CPD course on pain management for chronic MSK pain	Physiotherapist	3 years
11	38	Female	White British	Both	Weekly	NHS in-service training related to pain management, EP, CPD course on PSE	Physiotherapist	More than 5 years
12	31	Male	White British	Both	Weekly	EP, NHS in-service training related to pain management	Physiotherapist	More than 5 years
13	39	Male	White British	1-2-1	Less than monthly	–	Physiotherapist	More than 5 years
14	28	Male	White British	Both	Weekly	EP, NHS in-service training related to pain management, PhD in pain science education	Physiotherapist	More than 5 years

Legend: EP - Explain Pain, NHS - National Health Service, CPD - Continued Professional Development, MSc - Master of Science, PhD – Doctor of Philosophy, PSE - Pain science education, MSK – musculoskeletal, 1-2-1 - one to one PSE session, both - 1-2-1 and group sessions, * denotes additional information on PSE delivery structure and frequency.

the value in an educational approach. This biomedical dominance was mirrored in a perceived negative view of biopsychosocial interventions such as education. Again, there was an awareness that this mindset was not exclusive to minority groups.

'And you've always come from a background of people talking about medical model of managing pain. And there's always been an injection or an operation or a drug to be able to fix it. And trying to kind of accept pain as being part of what life needs to look like because we can't make it go away,' P6.

'They would think that something needs to be done to help decrease their pain ... more reliant on pain medications and having prolonged rest and were not very keen on changing their perception about pain Both groups [minorities and non-minorities] wanted ... something to be done rather than talking about their pain,' P11.

'They sometimes say how is pain science education going to help with my pain ... Some even already have negative perception about pain science education before even starting the sessions,' P9.

It was prominent throughout the participant narratives that people from ethnically minoritised groups had a tendency to disengage with services sooner than non-minority patients and this was felt to be underpinned by a more biomedical expectation grounded in their culture or experiences from their ancestral country of origin rather than an inability to understand and speak adequate English. This may also be related to a preference for passive care, often synonymous with biomedical care, and a reluctance to engage in group-based care. All of this makes PSE more difficult to deliver.

'Often I feel that these patients are discharged perhaps a lot sooner ... they don't think this service is helping them very much ... so they often disengage or don't attend their appointments,' P1.

'They find it very hard to understand the concept of pain science education and may find it uncomfortable to go into a group classes. So, it can be very difficult to keep them engaged throughout the session or some may even stop coming to these sessions because it may not fit well with the system that they may be more used to the system from their home country and are more likely to respond better to the biomedical,' P2.

3.2.2. Pain is a taboo topic

Taboo is defined as an action or word that is prohibited by religion or culture as such behaviour is considered either too dangerous or too sacred for an individual to undertake (Fershtman et al., 2009). Participant narratives expressed that pain was, in a number of ways, a taboo topic amongst some ethnically minoritised patients, and thus, they were reluctant to discuss pain. This was for a variety of reasons. Some ethnic minorities had superstitious and/or religious belief about their pain, with the pain related to "black magic" which resulted in disengagement (or lack of engagement) with PSE.

I had [a] patient from who belonged to [a] South Asian part and she used to think that pain is some sort of black magicShe was very negative about the whole concept of what pain science education was about. She stopped attending after [a] few sessions. The reason for less engagement from ethnic minorities linked with their culture or even religion,' P9.

'She was superstitious and she used to think that pain came from black magic ... and that she will have to endure it until the black magic disappears ... I was challenging her beliefs that she had for more than 30 years,' P10.

Participants narratives emphasised that talking about pain related co-morbidities such as mental health issues may also be considered a taboo for women from certain ethnically minoritised groups, because it might call into question their ability to fulfil their role in the home and their social identity, and a perception that pain and mental health can be seen as a form of weakness.

'In a lot of cultures, women are predominantly responsible for housework They have a lot of pressure or burden from the family to kind of fulfil that role Sometimes in terms of mental health aspects as well and psychological aspect of pain are still a taboo in certain cultures you don't get that much engagement as there is a bit of taboo,' P1.

'The taboo to talk about the sort of thing, even if they aren't a lot of pain ... expressing pain to be seen as a weakness They might actually be concerned about what other people think,' P5.

There may be a particular difficulty in talking about pain where it is in any way related to sex/sexuality. Participant 14 talked about a female patient from the Democratic Republic of Congo, of black ethnicity, who did not understand and/or accept the message of PSE and was unable to discuss or consider the role of her previous sexual trauma in her pain experience.

'There's this one lady who had multiple abdominal gynaecological surgeries Delivering pain science education with her was particularly challenging. She could kind of grasp it, but couldn't understand or accept the message of pain science education ... Whether it was a lack of acceptance of her previous sexual trauma and not wanting to accept,' P14.

3.2.3. The importance of cultural competence

Despite many of the participants having received pain/pain education specific training via postgraduate courses, several participants described themselves as being unaware of different religious or cultural practices due to a lack of cultural competency training. There was a fear amongst some participants who belonged to White British ethnicity that they may inadvertently insult cultural, religious or spiritual beliefs about pain held by their patients and this may also act as a barrier not just to PSE, and how best to "pitch it", but also to establishing a therapeutic relationship, which will be important in PSE delivery as it is for other interventions.

'Because I am more familiar with White [British] culture difficult for me to understand their perspectives or even their culturelack understanding with what would be more appropriate for their culture or religiondifficult to build up a good rapport with the patient itself,' P2.

'I don't particularly understand cultural beliefs around pain ... not having that shared culture and potentially an ignorance on my level about what the overall cultural beliefs around pain are within different cultures. So, it makes it hard to adapt it or pitch it at the right level,' P12.

'I really worry about offending people with my view on their injury particularly if they have spiritual, cultural, religious views such as God gave this to me because I wasn't good or God has done it. I'm really worried about insulting people,' P4.

Participants also lamented the lack of availability of culturally appropriate PSE resources for ethnically minoritised groups. Feeling that this could be an important barrier to PSE engagement.

'There could be issues with access to resources such as technology or leaflets or even so with social media use. Some ethnic minority groups may not respond well to the resources that are more White-centric or Westernized. The resources that I provide to people [from] ethnic minorities may not be culturally appropriate to them,' P2.

In contrast, it was felt that patients from ethnically minoritised groups responded well to PSE when it was well aligned with their cultural/religious practices and when there was no cultural or communication barrier, and there was a suggestion that this might be facilitated when the HCP delivering the care was from the same cultural/minority background as the patient. There was a curiosity as to whether delivering PSE in groups who share the same minority background would be beneficial and a keenness to get the input of patients as to how best to tailor PSE for them.

'Since I am a healthcare professional from ethnic minority background ... people from a similar ethnic background engage better because they can relate to what I'm saying ... she found it less embarrassing to speak to me in comparison to when speaking to her doctor from non-minority group because we gained that sense of trust with each other ... because they might feel a little bit more innate sense of trust with you because they identify,' P5.

'If you can find some dialogue that feels relevant to themwanted to be able to pray in the way that they normally would like kneeling on the floor. So, if you can find ways to help them to do that then it's more likely to be effective,' P6.

'It would be really interesting as to have people from some of the common ethnic minority groups that we have and come and talk to us about what their culture is like. This helps us to the kind of processes that go on in their culture and what sort of things are relevant for them,' P13.

4. Discussion

4.1. Summary of results and comparison to existing literature

The aim of this study was to explore HCP's experience of delivering PSE to individuals with pain from ethnically minoritised groups. Participants felt that many patients from ethnically minoritised backgrounds held strong biomedical beliefs which made them inclined to seek biomedical care and were thus more likely to disengage (early) from biopsychosocial interventions such as PSE. Whilst it was noted that majority white patients shared similar biomedical beliefs, they seemed more ingrained within minority groups. This was compounded by the feeling that pain was a taboo subject for some patients from an ethnically minoritised background making it more challenging to address these biomedical misconceptions. Contrastingly, there were also some patients that had a religious/spiritual/superstitious understanding of pain which participants felt contributed to the "taboo" nature of pain. Finally, HCPs commonly felt ill equipped to address misconceptions about pain due to a perceived lack of cultural competency and a fear of insulting patients through a lack of sociocultural awareness.

Participants believed that patients from ethnically minoritised groups disengaged with PSE sooner in comparison to non-minority patients and attributed this to their cultural background which had greater emphasis on the biomedical model. Although similar reasons for disengagement were acknowledged in non-minority groups, it was felt more prominent when discussing people from ethnically minoritised groups. This is consistent with [Ampiah et al. \(2022\)](#), which reported that biomedical beliefs were predominant amongst Ghanaian patients with back pain, mainly influenced by HCPs and sociocultural expectations. Patients believed that the structural defect was the cause of their back pain so they considered imaging (e.g. X-ray) important for diagnosis and hoped for a cure ([Ampiah et al., 2022](#)). Similar biomedical based misconceptions have been reported in other countries/cultures ([Darlow et al., 2014](#); [Igwe-Chidobe et al., 2017](#); [Setchell et al., 2017](#)). For example, in North America beliefs about back pain are predominantly biomedical with little or no awareness of the role of psychological or environmental factors ([Ray et al., 2022](#)) whilst people in China also have predominantly biomedical beliefs about back pain infused with beliefs about energy imbalance related to traditional Chinese medicine ([Li et al., 2020](#)). The belief that activities caused damage and tissues needed to be protected were also prominent ([Tarimo et al., 2017](#); [Singh et al., 2018](#); [Ampiah et al., 2022](#)). Our findings are consistent with previous qualitative studies, from people within western cultures, which reported disengagement with PSE because it was not considered relevant to them because of their biomedical perspective ([King et al., 2016, 2018](#); [Robinson et al., 2016](#); [Rizzo et al., 2023](#)). Given that guidelines recommend a biopsychosocial approach ([British Pain Society, 2021](#); [Fitzcharles et al., 2021](#); [NICE, 2021](#)), greater disengagement from interventions

such as PSE amongst ethnically minoritised groups may be worsening existing pain related health inequalities.

Some participants noted a reluctance of individuals from ethnically minoritised groups, especially women, to discuss pain. Discussing their pain and/or associated mental/sexual health was considered a "taboo". Our findings resonate with a qualitative study in Hong Kong, which found that mental health was a taboo topic amongst ethnically minoritised groups because of stigma towards mental health due to fear of societal discrimination ([Ilozumba et al., 2022](#); [Suen et al., 2023](#)). Previous studies have suggested that some cultures prioritise family honour over personal gain, and mental health issues in such instances were often viewed as a source of shame or disgrace ([Gilbert et al., 2004](#); [Hogg and Smith, 2007](#)). Many women oppressed in patriarchal societies have refrained from seeking treatment for mental health out of fear of being judged ([Suen et al., 2023](#)). Additionally, some of our participants highlighted that some people from ethnically minoritised groups considered their pain as a form of black magic, or a punishment from God, in keeping with aspects of their religion and culture ([Morgan, 1996](#); [Ferreira-Valente et al., 2011](#)). All these factors potentially make talking about pain and pain related disability more challenging with patients from ethnically minoritised backgrounds and are a significant barrier to good pain education. This again has the potential to widen pain related health inequalities, particularly in women from minority groups.

Despite many having postgraduate training in PSE, some participants expressed concerns about giving offence and intercultural anxiety because of their perceived lack of cultural competency training. This agrees with previous studies that have reported inadequate knowledge of different cultural values and norms resulting in HCPs experiencing uncertainty and unpleasant situations ([Ulrey and Amason, 2001](#); [Würth et al., 2018](#); [Debesay et al., 2021](#)). This is also in keeping with previous studies where HCPs have reported a lack of skills to manage patients' biomedical concerns, religious beliefs and expectations regarding PSE and the difficulty with integrating clinical explanations within a broader biopsychosocial framework that made sense to patients ([Ng et al., 2021](#); [Najem et al., 2023](#)). Most of our participants emphasised the need for cultural competency training and culturally competent PSE resources for people from ethnically minoritised groups in keeping with other studies ([Weech-Maldonado et al., 2012](#); [Shepherd et al., 2019](#)).

Furthermore, participants perceived that those patients from ethnically minoritised backgrounds shared positive experiences of PSE when it was culturally aligned with the individual, and the HCPs delivering PSE were from the same cultural/minority background as the patient. This resonates with previous studies which reported that people from ethnically minoritised groups may prefer HCPs from their own cultural background because these HCPs are likely to be familiar with cultural considerations and needs ([Meyer and Zane, 2013](#); [Shepherd et al., 2018](#)).

4.2. Strengths and weakness

A key strength of this study was that the researcher undertaking the interviews and leading the interpretation was herself an HCP from an ethnically minoritised group. The use of reflexive TA alongside the insider and outsider positionality provided an insightful perspective on the subject matter ([Braun and Clarke, 2022](#); [Yip, 2024](#)). Additionally, the co-researchers who inputted to the interview interpretations included individuals from a non-health professional and non-minority background, an outsider position, providing a rounded approach to the interpretation of the findings. Whilst distance was not a barrier to participation due to the online nature of the interviews, a weakness in this study was that there was low representation of non-physiotherapist HCPs, thus the findings may be less transferable to non-physiotherapists.

4.3. Clinical implications

The findings from this study highlight the additional challenges perceived by HCPs when delivering PSE to minority groups, the need for cultural competency training for HCPs (which could be integrated into PSE training), the need to consider flexible delivery specific to individual needs, and a multidisciplinary approach for patients with complex health needs requiring additional specialist support such as those who have been exposed to trauma, and the need to access culturally appropriate PSE resources that can be provided to patients from different ethnically minoritised groups. This may allow HCPs to consider different cultural needs, to increase the likelihood that discussions around pain are perceived as relevant by the patients, as perceiving the material as relevant has been identified previously as important to help patients take on the messages from PSE (King et al., 2016, 2018; Robinson et al., 2016). PSE should be delivered with care and sensitivity, ideally by someone appropriately trained in its delivery (Watson et al., 2019). When delivering PSE materials to people from ethnically minoritised groups, tailoring it so that it is appropriately contextualised to that person's cultural needs may reduce the likelihood of a negative response, which can occur for any patient/consumer, irrespective of ethnicity, if the messaging is not suitably contextualised (Weisman et al., 2022).

5. Conclusion

HCPs felt the majority of people from ethnically minoritised groups hold strong biomedical beliefs about their persistent pain, which are at odds with contemporary biopsychosocial guidelines. Talking about pain was considered a taboo amongst some people from ethnically minoritised groups, and others did not wish to engage with care unless it was biomedically focused, which was a challenge for HCPs wishing to address unhelpful beliefs. These factors may be contributing to pain related health inequalities amongst ethnically minoritised groups. HCPs recognised the need for culturally appropriate PSE training for all staff. Additionally, the availability of culturally appropriate resources for ethnically minoritised patients could improve patient engagement with PSE.

Funding disclosure statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Competing or conflicts of interests

CGR is a named inventor on a patent for a sensory discrimination training based medical device which could be used in the management of persistent pain conditions. He is also the community pain champion for the Flippin Pain™ campaign which is run by Connect Health Ltd. The consultancy fees for this role go directly to the University, CGR receives no personal income for this role. Professional, corporate, and scientific bodies have reimbursed him for expenses related to presentation of research on pain and rehabilitation at conferences/symposia. He has received speaker fees for presentations on pain and rehabilitation.

CRediT authorship contribution statement

J. Pun: Writing – original draft. **J. Franklin:** Supervision. **C.G. Ryan:** Supervision.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.msksp.2024.103196>.

References

- Ampiah, J.A., Moffatt, F., Diver, C., Ampiah, P.K., 2022. Understanding how patients' pain beliefs influence chronic low back pain management in Ghana: a grounded theory approach. *BMJ Open* 12, e061062.
- Bonatesta, L., Ruiz-Cardenas, J.D., Fernandez-Azorin, L., Rodriguez-Juan, J.J., 2022. Pain science education plus exercise therapy in chronic nonspecific spinal pain: a systematic review and meta-analyses of randomized clinical trials. *J. Pain* 23 (4), 535–546.
- Braun, V., Clarke, V., 2019. Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health* 11 (4), 589–597.
- Braun, V., Clarke, V., 2021a. One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qual. Res. Psychol.* 18 (3), 328–352.
- Braun, V., Clarke, V., 2021b. To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative Research in Sport, Exercise and Health* 13 (2), 201–216.
- Braun, V., Clarke, V., 2022. *Thematic Analysis: A Practical Guide*. SAGE Publications.
- British Pain Society, 2021. Guidelines for pain management programmes for adults. The British Pain Society, pp. 4–51. https://www.britishpainsociety.org/static/uploads/resources/files/PMP_guidelines_8QD8FJF.pdf. (Accessed 21 February 2024).
- Bulow, K., Lindberg, K., Vaegter, H.B., Juhl, C.B., 2021. Effectiveness of pain neurophysiology education on musculoskeletal pain: a systematic review and meta-analysis. *Pain Med.* 22 (4), 891–904.
- Butler, D.S., Moseley, G.L., 2003. *Explain Pain*. Noigroup Publications, Adelaide.
- Callister, L., 2003. Cultural influences on pain perceptions and behaviors. *Home Health Care Manag. Pract.* 15 (3), 207–211.
- Clarke, C.L., Ryan, C.G., Martin, D.J., 2011. Pain neurophysiology education for the management of individuals with chronic low back pain: a systematic review and meta-analysis. *Man. Ther.* 16, 544–549.
- Cooper, C., Green, S., Hartstein, A., Fergus, A., 2023. The impact of pain neuroscience education in a Hispanic-American population: a mixed-methods exploratory study. *Physiother. Theor. Pract.* 39 (9), 1938–1951.
- Craig, K.D., Holmes, C., Hudspeth, M., Moor, G., Moosa-Mitha, M., Varcoe, C., Wallace, B., 2020. Pain in persons who are marginalized by social conditions. *Pain* 161 (2), 261–265.
- Cuenda-Gago, J.D., Espejo-Antunez, L., 2017. Effectiveness of education based on neuroscience in the treatment of musculoskeletal chronic pain. *Rev. Neurol.* 65 (1), 1–12.
- Darlow, B., Perry, M., Stanley, J., Mathieson, F., Melloh, M., Baxter, G.D., Dowell, A., 2014. Cross-Sectional survey of attitudes and beliefs about back pain in New Zealand. *BMJ Open* 4, e004725.
- Debesay, J., Kartzow, A.H., Fougner, M., 2021. Healthcare professionals' encounters with ethnic minority patients: the critical incident approach. *Nurs. Inq.* 29 (1), e12421.
- Duenas, M., Salazar, A., Ojeda, B., Fernández-Palacín, F., Micó, J.A., Torres, L.M., Faile, I., 2016. A nationwide study of chronic pain prevalence in the general Spanish population: identifying clinical subgroups through cluster analysis. *Pain Med.* 16 (4), 811–822.
- Fayaz, A., Croft, P., Langford, R.M., Donaldson, L.J., Jones, G.T., 2016. Prevalence of chronic pain in the UK: a systematic review and meta-analysis of population studies. *British Medical Journal Open* 6, e010364.
- Ferreira-Valente, M.A., Ribeiro, J.L., Jensen, M.P., Almeida, R., 2011. Coping with chronic musculoskeletal pain in Portugal and in the United States: a cross-cultural study. *Pain Med.* 12 (10), 1470–1480.
- Fershtman, C., Gneezy, U., Hoffman, M., 2009. Taboos and identity: considering the unthinkable. *Am. Econ. J. Microecon.* 3 (2), 139–164.
- Fitzcharles, M., Cohen, S.P., Clauw, D.J., Littlejohn, G.O., Usui, C., Häuser, W., 2021. Nociceptive pain: towards an understanding of prevalent pain conditions. *Lancet* 397, 2098–2110.
- Gilbert, P., Gilbert, J., Sanghera, J., 2004. A focus group exploration of the impact of izzat, shame, subordination and entrapment on mental health and service use in South Asian women living in Derby. *Ment. Health Relig. Cult.* 7 (2), 109–130.
- Guest, G., Bunce, A., Johnson, L., 2006. How many interviews are enough? An experiment with data saturation and variability. *Field Methods* 18 (1), 59–82.
- Guest, G., Namey, E., Chen, M., 2020. A simple method to assess and report thematic saturation in qualitative research. *PLoS One* 15 (5), e0232076.
- Hogg, M.A., Smith, J.R., 2007. Attitudes in social context: a social identity perspective. *Eur. Rev. Soc. Psychol.* 18, 89–131.
- Igwechi-Chidobe, C.N., Coker, B., Onwasigwe, C.N., Sorinola, I.O., 2017. Biopsychosocial factors associated with chronic low back pain disability in rural Open access Nigeria: a population-based cross-sectional study. *BMJ Glob. Health* 2, e000284.
- Ilozumba, O., Koster, T.S., Syurina, E.V., Ebuonyi, I., 2022. Ethnic minority experiences of mental health services in The Netherlands: an exploratory study. *BMC Res. Notes* 15 (1), 266.
- Jones, G.T., Macfarlane, T., Macfarlane, G.J., 2014. Prevalence of pain reporting in different ethnic groups in the UK: results from a large biobank. *ACR Abstract Submission* 71.
- King, R., Robinson, V., Ryan, C.G., Martin, D.J., 2016. An exploration of the extent and nature of reconceptualization of pain following pain neurophysiology education: a qualitative study of experiences of people with chronic musculoskeletal pain. *Patient Education and Counselling* 99, 1389–1393.
- King, R., Robinson, V., Elliott-Button, H.L., Watson, J.A., Ryan, C.G., Martin, D.J., 2018. Pain reconceptualization after pain neurophysiology education in adults with chronic low back pain: a qualitative study. *Pain Res. Manag.*, 3745651.
- Lewis, G.N., Upsdell, A., 2018. Ethnic disparities in attendance at New Zealand's chronic pain services. *New Zealand Medical Association* 131 (1472), 21–28.

- Li, Y., Coppieters, M.W., Setchell, J., Hodges, P.W., Scholten-Peeters, G.G.M., 2020. How do people in China think about causes of their back pain? A predominantly qualitative cross-sectional survey. *BMC Musculoskel. Disord.* 21 (1), 476.
- Louw, A., Diener, I., Butler, D.S., Puenteadura, E.J., 2011. The effect of neuroscience education on pain, disability, anxiety, and stress in chronic musculoskeletal pain. *Arch. Phys. Med. Rehabil.* 92, 2041e56.
- Louw, A., Zimney, K., Puenteadura, E.J., Diener, I., 2016. The efficacy of pain neuroscience education on musculoskeletal pain: a systematic review of the literature. *Physiother. Theory Pract.* 32 (5), 332–355.
- Meyer, O.L., Zane, N., 2013. The influence of race and ethnicity in clients' experiences of mental health treatment. *J. Community Psychol.* 41, 884–901.
- Morgan, M., 1996. Prenatal care of African American women in selected USA urban and rural cultural contexts. *J. Transcult. Nurs.* 7, 3–9.
- Moseley, G.L., Butler, D.S., 2015. Fifteen years of explaining pain: the past, present, and future. *J. Pain* 16 (9), 807–813.
- Moseley, G.L., Leake, H.B., Beetsma, A.J., Watson, J.A., Butler, D.S., van der Mee, A., Stinson, J.N., Harvie, D., Palermo, T.M., Meeus, M., Ryan, C.G., 2024. Teaching patients about pain: the emergence of Pain Science Education, its learning frameworks and delivery strategies. *J. Pain* 25 (5), 104425.
- Najem, C., Wijma, A.J., Meeus, M., Cagnie, B., Ayoubi, F., Van Oosterwijck, J., Van Wilgen, C.P., 2023. Facilitators and barriers to the implementation of pain neuroscience education in the current Lebanese physical therapist health care approach: a qualitative study. *Disabil. Rehabil.* 46 (3), 524–532.
- National Institute for Health and Care Excellence (NICE) guideline, 2016. Low back pain and sciatica in over 16s: assessment and management. <https://www.nice.org.uk/guidance/ng59>. (Accessed 18 January 2024).
- National Institute for Health and Care Excellence (NICE) guideline, 2021. Chronic pain (primary and secondary) in over 16s: assessment of all chronic pain and management of chronic primary pain. <https://www.nice.org.uk/guidance/ng193>. (Accessed 25 January 2024).
- Ng, W., Slater, H., Starcevic, C., Wright, A., Mitchell, T., Beales, D., 2021. Barriers and enablers influencing healthcare professionals' adoption of a biopsychosocial approach to musculoskeletal pain: a systematic review and qualitative evidence synthesis. *Pain* 162 (8), 2154–2185.
- Peacock, S., Patel, S., 2008. Cultural influences on pain. *Reviews in pain* 1 (2), 6–9.
- Pietkiewicz, I., Smith, J.A., 2014. A practical guide to using Interpretative Phenomenological Analysis in qualitative research psychology. *Psychological Journal* 20 (1), 7–14.
- Ray, B.M., Kovaleski, A., Kelleran, K.J., Stilwell, P., Baraki, A., Coninx, S., Eubanks, J.E., 2022. An exploration of low back pain beliefs in a Northern America based general population. *Musculoskeletal Science Practice* 61, 102591.
- Reis, F.J.J., Nijs, J., Parker, R., Sharma, S., Wideman, T.H., 2022. Culture and musculoskeletal pain: strategies, challenges, and future directions to develop culturally sensitive physical therapy care. *Braz. J. Phys. Ther.* 26 (5), 100442.
- Rizzo, R.R.N., Wand, B.M., Leake, H.B., O'Hagen, E.T., Bagg, M.K., Bunzil, S., Traeger, A.C., Gustin, S.M., Moseley, G.L., Sharma, S., Cashin, A.G., McAuley, J.H., 2023. My back is fit for movement: a qualitative study alongside a randomized controlled trial for chronic low back pain. *J. Pain* 24 (5), 824–839.
- Robinson, V., King, R., Ryan, C.G., Martin, D.J., 2016. A qualitative exploration of people's experiences of pain neurophysiological education for chronic pain: the importance of relevance for the individual. *Man. Ther.* 22, 56–61.
- Setchell, J., Costa, N., Ferreira, M., Makovey, J., Nielsen, M., Hodges, P.W., 2017. Individuals' explanations for their persistent or recurrent low back pain: a cross-sectional survey. *BMC Musculoskel. Disord.* 18, 1–9.
- Shepherd, S.M., Willis-Esqueda, C., Paradies, Y., Sivasubramaniam, D., Sherwood, J., Brockie, T., 2018. Racial and cultural minority experiences and perceptions of health care provision in a mid-western region. *Int. J. Equity Health* 17, 33.
- Shepherd, S.M., Willis-Esqueda, C., Newton, D., Sivasubramaniam, D., Paradies, Y., 2019. The challenge of cultural competence in the workplace: perspectives of healthcare providers. *BMC Health Serv. Res.* 19, 135.
- Siddall, B., Ram, A., Jones, M.D., Booth, J., Perriman, D., Summers, S.J., 2022. Short-term impact of combining pain neuroscience education with exercise for chronic musculoskeletal pain: a systematic review and meta-analysis. *Pain* 163 (1), e20–e30.
- Singh, G., Newton, C., O'Sullivan, K., Soundy, A., Heneghan, N.R., 2018. Exploring the lived experience and chronic low back pain beliefs of English-speaking Punjabi and white British people: a qualitative study within the NHS. *British Medical Journal Open* 8, e020108.
- Suen, Y.N., Wong, Y.C., Wong, T.H.M., Chan, K.W.S., Hui, L.M.C., Lee, H.M.E., Chen, Y. H.E., 2023. Double stigma in mental health service use: experience from ethnic minorities in Hong Kong. *Int. J. Soc. Psychiatr.* 69 (6), 1345–1353.
- Tarimo, N., Diener, I., Nesto, T., 2017. Knowledge, attitudes and beliefs on contributing factors among low back pain patients attending outpatient physiotherapy treatment in Malawi. *S. Afr. J. Physiother.* 73, 1–8.
- Tomaszewski, L.E., Zarestky, J., Gonzalez, E., 2020. Planning qualitative research: design and decision making for new researchers. *Int. J. Qual. Methods* 19.
- Tong, A., Sainsbury, P., Craig, J., 2007. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int. J. Qual. Health Care* 19 (6), 349–357.
- Traeger, A.C., Lee, H., Hubscher, M., Skinner, I.W., Moseley, G.L., Nicholas, M.K., Henschke, N., Refshauge, K.M., Blyth, F.M., Main, C.J., Hush, J.M., 2018. Effect of intensive patient education vs placebo patient education on outcomes in patients with acute low back pain: a randomized clinical trial. *JAMA Neurol.* 76 (2), 161–169.
- Ulrey, K.L., Amason, P., 2001. Intercultural communication between patients and health care providers: an exploration of intercultural communication effectiveness, cultural sensitivity, stress, and anxiety. *Health Commun.* 13 (4), 449–463.
- Versus Arthritis, 2021. Chronic pain in England: unseen, unequal and unfair. Available at: <https://www.versusarthritis.org/media/23739/chronic-pain-report-june-2021.pdf>. (Accessed 22 January 2024).
- Watson, J.A., Ryan, C.G., Cooper, L., Ellington, D., Whittle, R., Lavender, M., Dixon, J., Atkinson, G., Cooper, K., Martin, D.J., 2019. Pain neuroscience education for adults with chronic musculoskeletal pain: a mixed-methods systematic review and meta-analysis. *J. Pain* 20 (10), 1140.e1–1140.e22.
- Weech-Maldonado, R., Elliott, M.N., Pradhan, R., Schiller, C., Hall, A., Hays, R.D., 2012. Can hospital cultural competency reduce disparities in patient experiences with care? *Med. Care* 50 (9), S48–S55.
- Weisman, A., Yona, T., Gottlieb, U., Masharawi, Y., 2022. Attitudinal responses to current concepts and opinions from pain neuroscience education on social media. *Musculoskeletal Science Practice* 59, 102551.
- Wood, L., Hendrick, P., 2019. A systematic review and meta-analysis of pain neuroscience education for chronic low back pain: short-and long-term outcomes of pain and disability. *Eur. J. Pain* 23 (2), 234–249.
- World Health Organisation, 2013. Transforming and Scaling Up Health Professionals' Education and Training: World Health Organisation Guidelines, 2013. Annex 1, Definition and list of health professionals. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK298950>. (Accessed 3 September 2024).
- Würth, K., Langewitz, W., Reiter-Theil, S., Schuster, S., 2018. Their view: difficulties and challenges of patients and physicians in cross-cultural encounters and a medical ethics perspective. *BMC Med. Ethics* 19 (1).
- Yip, S.Y., 2024. Positionality and reflexivity: negotiating insider-outsider positions within and across cultures. *Int. J. Res. Method Educ.* 47 (3), 222–232.
- Yun, J., 2017. A comparison of pain neurophysiology education with therapeutic interventions versus therapeutic interventions alone on pain and function in individuals with chronic low back pain. A Meta-Analysis (Doctoral dissertation) 1–50.
- Zajacova, A., Grol-Prokopczyk, H., Fillingim, R., 2022. Beyond Black vs White: racial/ethnic disparities in chronic pain including Hispanic, Asian, Native American, and multiracial US adults. *Pain* 163 (9), 1688–1699, 2022.