Exploring physiotherapist experiences and beliefs about psychologically informed practice to inform development of a training programme

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ABSTRACT

Aim:

To explore physiotherapists' experiences, beliefs, and opinions about psychologically informed practice (PIP) in order to design a training programme for non-psychologist clinicians to enhance their PIP skills.

Design:

This study adopted an interpretive description qualitative methodology using focus groups and consistent with the aim of generating knowledge relevant to applied health and to inform the design of a training programme.

Participants:

Phase one included musculoskeletal physiotherapists (n=18) who were purposively sampled to take part in two focus groups. A third focus group consisted of pain specialist physiotherapists (n=6) recruited from a specialist network in the UK called the physiotherapy pain association (PPA) to explore further topics identified in phase one and to inform training development.

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Data Analysis and Synthesis:

Qualitative content analysis was used as a framework for data analysis and consisted of subjective interpretation of textual data through a systematic classification process of coding and identifying themes or patterns.

Results:

three interconnected themes that provide insights into the perceptions and experiences of physiotherapists concerning PIP were constructed: 1) Professional Roles and External Influences on PIP, 2) Interpersonal Aspects of PIP Delivery, and 3) Support Needs to Enhance PIP Application.

Conclusion:

The findings provide an understanding of the multifaceted nature of PIP and its impact within healthcare settings. They will inform development of training to address gaps and provide practical strategies for enhancing PIP delivery for non-psychologists.

Contribution of the Paper.

- Our findings concur with existing literature regarding application of psychologically informed practice; that physiotherapists recognise that there are challenges in applying knowledge and skills relating to psychologically informed practice.
- With increasing complexity and numbers of people living with multiple long-term conditions it is important for physiotherapists to increase their confidence in order to ensure they are considering the psycho-social aspects of care for this population.

- A desire for training in psychologically informed practice was expressed and in addition supervision and mentorship was recognised as essential in supporting clinicians to embed skills and increase confidence.

Introduction

This study describes the background work and methods used to develop a training programme to enhance psychologically informed practice skills for physiotherapists. The term “psychologically informed practice” (PIP) was first coined in 2011 (1) and PIP is recommended when working with patients experiencing chronic pain (2–4). Chronic pain (also referred to as persistent, lasting, or ongoing) is pain that persists for more than three months and may be sub-categorised as “primary chronic pain”, where no underlying clearcut condition explains the pain, or “secondary chronic pain”, where the pain is associated with an underlying condition (5). While the term "PIP" was coined in 2011, the utilisation of psychological models and approaches to improving clinical care for physiotherapists has been documented in research for over 25 years (6). The application of psychological skills in other professions, including general practice, has been noted for an even longer period (7).

An agreed definition of PIP does not exist which contributes to recognised challenges in delivering this approach in everyday practice (8). PIP was initially, and perhaps rather vaguely, described as “offering enhancement to clinical practice with the aim of restoring function and reengaging activity, rather than providing pain relief *per se*; with the goal of

optimal self-management" (1,3). Intervention methods that have been posited as representing PIP are drawn from a range of different underpinning psychological approaches as outlined in table 1:

Table 1 Major types of Interventions used in PIP (adapted from Keefe et al (4))

Intervention	**Brief Description**
Educational	Threat reduction and activation
Behavioural Change	Explicit focus on incorporating adaptive behaviours in response to pain using behaviour change interventions, and acknowledging impact of contextual factors such as environment
Cognitive Behavioural	Principal focus on cognition and coping strategies
Psychophysiological Focus	Variants of stress reduction (e.g. progressive relaxation training, meditation, autogenic training, and biofeedback) and mindfulness-based stress reduction (MBSR)
Contextual cognitive-behavioural therapy	Acceptance and commitment therapy

Non-psychologist clinicians may recognise many of these methods from undergraduate training without appreciating the origins in established psychological methods e.g. goal setting as part of behavioural change methodology (9). A wide range of treatment methods recognised by physiotherapists have been named in the literature, and could be considered to fall under the definition of PIP (see Box 1 for a non-exhaustive list of examples).

Box 1: Alternative names for methods/approaches under the umbrella of PIP.

- Psychosocial interventions (2)
- Biopsychosocial approaches (10,11)
- (brief) Psychological interventions (3,12)
- Cognitive behavioural-based approaches (13,14)
- Stress inoculation (15)
- Dialectical behaviour therapy (16)
- Cognitive functional therapy (17–19)
- Pain coping skills training (20)
- Motivational Interviewing (21)

Pain neurobiology education (PNE) has intentionally been omitted from this list because it has been recommended that PIP focus on the development of effective communication between clinicians and patients to enhance patient-centeredness in clinical care, rather than on education typical of PNE (22,23)*, Although it is appropriate to help patients to understand the nature of chronic pain and replace misunderstandings with more helpful explanations, PIP attempts to direct attention to the impact of the pain (or other illness) and the challenges of managing those* (22)*.*

A common misconception is that PIP means abandoning existing clinical skills and/or becoming a psychologist and/or addressing mental health difficulties that require specialist care (24). We suggest that PIP is not intended to be an approach for non-psychologists to treat patients who present with mental health problems, rather it offers skills that enhance clinical care for all patients. We conceptualise PIP as a framework that supports clinicians to enhance existing clinical skills through awareness of psychological factors that can limit outcomes (22), using strategies that are core competencies in cognitive behavioural approaches (such as goal setting) (25), and communication skills to enhance therapeutic alliance (26). Concerns have also been raised that PIP over-emphasises individual responsibility; Nicholls (2023) for example has interpreted PIP as representing a treatment in and of itself that promotes “personal responsibility and productivity despite ongoing pain” rather than as a framework within which to deliver profession-specific treatment approaches(27). Confusion over the term PIP can challenge clinicians who grapple with their scope of practice and lack confidence applying PIP (28–32). For this study we are aligned with the view that the overarching goal of PIP is to enhance quality of life by providing a better understanding of the patient’s condition, improved tailoring of interventions, enhanced adherence to treatment methods, fostering self-efficacy for delivering PIP, and better outcomes (4).

Training in PIP

From a patient perspective PIP approaches are important because they foster development of a strong therapeutic alliance (26) and emphasise a person centred approach, which advocates for the co-creation of care through partnership between patients, their families and

carers, social and cultural environment, and health professionals/health system (33). This paper uses focus group methods to explore perceptions of PIP and PIP training to inform development of a training programme to support non-psychologist clinicians to enhance their skills and feel more confident to deliver clinical care using PIP.

The literature is limited on the topic of training in PIP and given the lack of clear definition, the competencies required by clinicians to deliver PIP are open to (mis)interpretation (9). Although training is recommended (22,23) what this includes remains unclear. Research has looked at training development to deliver PIP in the United States of America (USA) healthcare settings (12,20,34). In the United Kingdom (UK), some groups have also developed training packages for physiotherapists to deliver PIP as part of larger research trials (13,35,36). It has been recommended that emphasis needs to be given to training that supports skills development and competencies/capabilities for clinicians in PIP (2). Unfortunately training programmes used in research settings have generally not continued beyond the research duration and there exists a gap in appropriate theory informed and evidence based training opportunities for clinicians to develop these skills (3,13).

Denneny et al (37) identified four themes relating to skills and behaviours observed in practice of experienced psychologically informed physiotherapists that may inform training programmes, namely:

- Building a therapeutic alliance; which relates to the interpersonal aspects of the clinical encounter

- Reducing perceived threat of pain; which may include problem solving and goal setting
- Reconceptualising beliefs and somatic experience; which refers to co-constructing a more helpful understanding of pain
- Fostering self-efficacy for pain control; which focussed on strategies that enhance the person's ability to self-manage their pain and deal with future flare ups

Aim

To explore physiotherapists' experiences, beliefs, and opinions about psychologically informed practice in order to design a training programme for non-psychologist clinicians to enhance their PIP skills.

Objectives

- Understand the experiences and confidence of physiotherapists regarding PIP
- Identify training gaps, and understand the learning needs, for clinicians to deliver PIP

Methods

This study is reported in line with the Consolidated criteria for reporting qualitative research (COREQ) to ensure quality and transparency (38). Ethical approval for this research was granted by Queen Mary (University of London) Ethics of Research Committee (QMREC2305a).

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Study Context

The Physiotherapy Pain Association (PPA), a special interest group for physiotherapists in the UK with an interest in pain, conducted feasibility work to address membership requests to offer PIP training (See Denneny and Walumbe for more information (39)). In parallel at two large National Health Service (NHS) university hospitals (which provide free-at-the-point-of-care healthcare services to ethnically and socioeconomically diverse populations in an urban setting based in XXX UK), henceforth NHS trusts, identified a gap in the learning needs for their physiotherapy team when working with people living with chronic pain. Recognising shared objectives both groups met in October 2019 to collaborate on the development of PIP training. This group met regularly over 18 months.

Research and Development team

In accordance with co-production principles the process of developing this training was iterative, “involving diverse types of expertise, knowledge and actors to produce context-specific knowledge and pathways towards a sustainable future” (40). In keeping with principles of co-production (40) it was important to have representation from people with lived experience and the training development team (henceforth the committee) included two members with lived experience (including CP (F)). Additionally the committee included three physiotherapists (DD (M), RML (F), TN (M)), and three clinical psychologists (CC (F), AM (F), FK (M)) who all had experience in pain and PIP. The project was supported by grant funding from Health Foundation’s Q Lab Network (https://q.health.org.uk/q-improvement-lab/), with project management support from the Academic Health Science Network (AHSN) for south London.

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This study presents findings from initial pilot work and scoping focus groups which informed development of the PIP training programme.

Theoretical framework

The study adopts an interpretive description qualitative methodology (41) consistent with the aim of generating knowledge relevant to applied health (to inform the design of the training programme). This approach amalgamates interdisciplinary perspectives and accounts for the use of different theoretical traditions to make sense of research findings (42). Insights were combined from pilot work, together with scoping focus groups (43) to describe:

1) Current accounts of practising clinicians

2) Identify training needs and areas for development.

The focus group is a particular type of group interview where the facilitator asks targeted questions designed to elicit collective views about a specific topic (43,44), in this case; the training needed for clinicians to feel more skilled and confident to deliver PIP. Data collection and analysis considered the group's dialogue and focused primarily on verbal content (43).

Participant Selection and Sampling

Three focus groups were conducted and facilitated by two researchers from the AHSN.

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Phase 1

Participants were purposively sampled from NHS trusts physiotherapy musculoskeletal departments for the first two groups. The groups were scheduled to last for no more than one hour to fit in with participant clinical schedules. No payments were given for taking part, but participants were offered one-year free membership of the PPA as a token of appreciation for participating (value £20 GBP). The first two focus groups, held in Spring 2019, included 18 physiotherapists working at NHS trusts. A topic guide (Appendix 1), informed by the findings of two separate research studies by members of the research and design team (4,37) was employed to ensure consistency across both groups and focussed on two themes:

(a) The experience, and confidence, of participants relating to PIP

(b) Participants' thoughts and opinions regarding training in PIP and content of such training

Initial findings highlighted thoughts and opinions relating to gaps in knowledge, skills, and confidence and preferences for training programme content. These were presented at committee meetings where the decision was made to run a further focus group (Phase 2) in summer 2020.

Phase 2

Focus group three participants were purposively recruited via PPA advertising to membership and included physiotherapists (n=6) who identified as being more experienced with PIP. The topic guide for phase 2 was amended to incorporate initial findings (appendix

2) and was also informed by the four themes identified by Denneny et al (37) in order to identify content areas for the training programme.

All participants read a participant information sheet and gave written informed consent before participating in the focus groups. Sessions were recorded (audio recording for the first two in-person groups and zoom ® recording feature for the third online group). Recordings were transcribed verbatim and checked for accuracy by AHSN staff.

Data Analysis and Synthesis

We used qualitative content analysis (QCA) as a framework for data analysis. QCA is defined as a theoretically flexible research method that consists of subjective interpretation of text data content through a systematic classification process of coding and identifying themes or patterns (45). Both inductive and deductive coding approaches were used, as recommended by QCA, holding a priori considerations of PIP related themes to generate and use a codebook . One researcher (DD) reviewed the transcripts, using NVivo 12 plus ® software, to construct general themes from the sessions. Initial codebook findings were discussed and critiqued with two other members of the research team (TN and RML) and revision of themes based upon these discussions resulted in the final set of themes reported here (See codebook in Appendix 3).

Findings

The analysis of the focus group discussions led to the construction of three interconnected themes that provide insights into the perceptions and experiences of physiotherapists concerning PIP:

1: Professional Roles and External Influences on PIP

2: Interpersonal Aspects of PIP Delivery

3: Support Needs to Enhance PIP Application

These themes provide an understanding of the multifaceted nature of PIP and its impact within healthcare settings.

1: Professional Roles and External Influences on PIP

In the first theme, participants demonstrated awareness of the concept of PIP and identified various factors that influence its application. These influencing factors were often seen as being beyond the control of the physiotherapist. In this theme they also offer thoughts and opinions of PIP and aspects of their clinical practice. This theme is divided into three sub-themes:

a) Clinical Environments and Outcomes:

Participants highlighted challenges related to clinical environments. For instance, medical documentation forms hindered discussions about psychological aspects. One participant (GP4) noted that "*paperwork doesn't help; there's not enough room to explore things like sleep and stress*." The absence of private rooms was also felt to impact on the ability to have

confidential conversations. For example GP6 felt it was "*hard in an environment with curtains and noise*." And GP3 offered that delivering care using PIP was "*easier in our own clinic rooms*."

Time constraints were flagged by participants as another barrier to addressing psychological aspects of care with concerns raised that using PIP in "*conversations take time*" (P3) and can add to "*time pressures in outpatient settings*" (P2).

b) Professional Roles, Expectations, and Boundaries:

Participants questioned their role in addressing psychological aspects viewing pain as either physical or psychological. Some expressed beliefs that "*non-psychological factors can drive pain*" (P1) suggesting more bio-medical beliefs regarding pain mechanisms whereas PIP rejects this dichotomy and recommends a more person centred model. The challenge of addressing the impact of stress on pain may also speak to this: "*When the patients attribute their pain to their stress… that's difficult to approach*" (P3). Could this reveal both challenges to more traditional biomedical understandings of pain as well as to gaps in skills to discuss and support people when these links present in clinical encounters?

Others reported they were "*confident in recognising signs but unsure how to respond*" (S3). Some concerns were raised about how the therapeutic relationship might be adversely affected by trying to deliver care in a PIP way, feeling that their attempts at trying to use PIP approaches were "*sometimes not well received*" (P5). This may signal mis-understandings about what PIP is and how to deliver physiotherapy treatments in a more skillful PIP-manner

There was a sense that expectations of physiotherapists role on the part of patients and other health care professionals also contributed to challenges in delivering care in a PIP wa. P4 captured this by saying "*physio is physical; why ask about mental health?".* These expectations were perceived by some to make it challenging when *"referrals sometimes [are] based on incorrect expectations"* (PP6).

Lack of formal training was also identified as leading to uncertainty when "*dealing with challenging conversations*" (P2), with a sense of concern over "*opening a can of worms without a solution*" (P1) and feeling unskilled in how to manage these situations.

c) Recognition of impact on one's own wellbeing as a physiotherapist:

Physiotherapists acknowledged the impact of pain on mental health and wellbeing and the challenges in managing them, and referring patients on for specialist intervention. The sense that having more time with patients when compared with GPs was not always experienced as positive, with concerns it could enable patients to disclose more, as demonstrated by P2: "*GPs have 10 minutes… in physio you are more likely to… uncover issues*." Dealing with these "issues" was a concern causing difficulty in knowing where to direct patients for additional support; "*it is more difficult to know where to signpost to*" (P4).

The importance of managing the relationship between illness and psychological well-being was emphasised, with some noting that "*the link is huge… we need better skills at managing these patients*" (S3). Experience was highlighted as a key factor in effectively delivering PIP care with some participants suggesting that "*delivering a psychosocial approach is not what*

everybody signed up for" (P1). Confidence amongst participants in discussing the impact of pain and illness on wellbeing and mental health varied, with some feeling they could do so at "*only at a basic level… and signposting to GP*" (S2). Whereas others reported recognising and valuing the benefits of addressing the wider impact of pain on wellbeing in consultations as highlighted by P7: "*If you do explain why wellbeing is so important… they will start a cycle of change*."

2: Interpersonal Aspects of PIP Delivery:

This second theme explores factors influencing PIP practice, from healthcare professionals to patients and their relationship. Again this is divided into three sub-themes.

a) Healthcare Professional Attributes:

The emotional impact of patient care on professionals was highlighted with one participant, when recalling a particularly difficult clinical encounter, sharing how it "still haunts me" (P3). Not achieving expected outcomes was also noted as something that can have an impact on the physiotherapist and cause them to "*feel deflated*" especially when patients "*don't really take it [physiotherapist advice] on board"* (GP7). A sense that responsibility for change belongs to the patient, and how wellbeing may impact this, with little awareness of influence from the physiotherapist was expressed on occasions. For example when one participant shared that "*compliance can be reduced… often due to fatigue, mood, pain*" (S1), and perhaps more starkly when P6 shared how "a*nger is common… they blame everyone else and not themselves*". These moments may reveal lack of awareness of the complexity of living with long term pain and the importance of therapeutic alliance and the role of the

314 therapist themselves in terms of understanding, motivation, and support during clinical
315 encounters and outcomes more generally.

316

317 Some participants did speak of how the pressure from professional responsibility was a
318 source of stress in terms of self-expectations with signs of a dawning awareness at how this
319 could potentially cause issues, for example PP1 said "*I'm going to heal the world…*
320 *sometimes it can actually be the clinician who's the barrier*" and from another "*we need to be*
321 *ace at… letting them talk about their horrible day*" (GP2). At times the discussion simulated
322 moments of self-reflection and thoughts on how personal traits can influence clinical practice
323 and therapeutic relationships with one participant suggesting it could be helpful to do "*360*
324 *feedback on our personalities… we should be able to amend and adjust"* (GP4). For others
325 PIP offered a sense of "freedom" in clinical practice, moving away from hard and rigid rules
326 as expressed by GP1: "*It's given me freedom… rather than being so prescriptive."* There
327 were moments of awareness that "simple" strategies can be powerful; "*Sometimes it is as*
328 *simple as listening… they never had that before*" (P1).

329

330 b) Impact of Patient Wellbeing on treatment:

331 The correlation between persistent pain, wellbeing, and psychological distress was noted
332 during the discussions with participants sharing their thoughts that "*people with persistent*
333 *pain have poorer mental health and vice versa*" (S1). Challenges in treatment compliance
334 and attendance due to psychological impacts were discussed with many feeling them to
335 cause "*a real issue with compliance… attendance at appointments is a big issue*" (S3).

During the discussions many reported awareness of greater challenges experienced by specific groups such as adolescents and those with mental health issues: "*The adolescent group are hard… no one takes the lead so nothing is really solved*" (P2). There was acknowledgement on how problems with service provision to support such groups could also impact on wellbeing with one participant noting how a "*friend's son has mental health problems and has been left with nothing due to waiting times*" (P3). There was a sense that treatment offered in physiotherapy could be adversely affected for people experiencing these difficulties and awareness that this represents a large proportion of people who are referred: "*The prevalence of mental health is more… it is a big part of the population we see*" (GP1).

The difficulty in discerning when to refer to mental health services was also a concern expressed by many and demonstrated by GP8 when they identified how it was often "difficult" to know how best to discern and manage "between the pain and injury or their mental health."

c) Therapeutic Alliance:

Some were aware of therapeutic alliance as an important factor to consider in patient care. Some conceptualised this alliance as built on listening, trust, and validation and shared their thoughts that "*a good therapeutic alliance means that both parties are listening and talking… mutual respect and understanding*" (PP5). They recognised skills that are helpful in strengthening a therapeutic alliance and in particular the importance of "*listening… making them realise that they are being listened to and believed*" (PP4). PP3 noted how "*a good*

therapeutic alliance allows you to pursue a common goal… by listening, by communicating, by making them feel validated." The group acknowledged that these skills were not always easy to enact in clinical practice. For example PP1 reflected on how "*the listening side of it… sometimes we do forget how to listen well"* perhaps demonstrating the value of emphasising these core skills in training development and including activities to support deepening of these skills.

3: Training Needs to Enhance PIP Application:

The third theme discusses the need for improved training and resources to apply PIP effectively and is also divided into three sub-themes.

a) Training in PIP:

Participants expressed a desire for educational support and the necessity for practical training was commonly acknowledged in the focus group discussions: "*We need education behind it (PIP), that would be brilliant*" (GP2). Participants highlighted that although PIP "makes sense on paper…you never see it practised" suggesting the value in demonstrating and practising strategies that may come under the PIP umbrella. The importance of regular practice and peer discussions was emphasised with value in being able to discuss aspects of PIP with colleagues being noted: "some routine re-training/follow up, to practise, reflect – someone you can discuss things with" (P3). These comments highlight the need to move beyond traditional two-day workshop style training models that aim to address a knowledge gap by introducing information but rarely provide opportunities to address the skills

acquisition gap and apply the skills learned. Training should instead consider models of delivery that offer opportunities to apply and master the skills that are introduced.

b) Resources to Aid PIP Delivery:

Clinicians identified a need for tangible resources to support PIP delivery: "*We don't have handouts to help… there is a lot more that could be done*" (GP5). The use of visual aids and information for display in patient areas was discussed as possibly supporting the resetting of expectations regarding treatment approaches, and in turn supporting the confidence of the physiotherapist in delivering care in a PIP manner, for example "*having a model, or paper with a diagram on it makes it seem more official*" (GP4). The benefit of web-based resources for patient guidance was also requested/recognised as potentially helpful such as "a website, a book" (P1) "… a *bit like a toolbox you can use to signpost people to*" (P4). The yearning for such handouts may betray ideas that information or education alone is sufficient to change behaviour and highlight areas to include in PIP training that emphasise other key skills required in supporting behaviour change both for clinicians to change their clinical practice as well as for patients they work with.

c) Supervision and Reflective Practice:

The need for clinicians to have opportunities to follow-up on cases with colleagues and engage in reflective practice after attending any training was stressed. One participant referring to past training experiences was concerned that "*they give you ideas but no follow up… it's important we can discuss that after the event*" (P6). Some suggested that there may

be opportunities to integrate PIP reflection time into existing supervision structures: "*It needs to be part of our 1:1 debrief session with seniors*" (P6).

The importance of peer support for efforts to apply PIP skills was again emphasised when one suggested the need to have opportunities to practise, for example having "*a week where we take a slot out, practice and discuss*" (P1). This was echoed by another who stated a "*need to feel supported and look after ourselves*" (P4). The necessity for debriefing opportunities was highlighted particularly "*when you are the first person they've opened up to*" (P6). Concerns about personal wellbeing were raised by some whilst acknowledging how support to work in a PIP way may mitigate this: "*Someone needs to look after our mental health as well… we need a way to talk to our peers*" (P2).

Together, these themes reflect a consensus on the necessity for training in PIP but also for structured support systems in terms of cultural shifts in professional practice and ongoing reflection and supervision, to empower clinicians in delivering care in a psychologically informed manner.

Discussion

The findings have led to the construction of interconnected themes that provide valuable insights into the perceptions and experiences of physiotherapists regarding Psychologically

Informed Practice (PIP). These themes shed light on the complex nature of PIP and its impact within healthcare settings.

Contemporary guidelines and research advocate for the integration of psychological aspects into healthcare, making it important for healthcare professionals to gain confidence and skills to deliver PIP. Whilst this is starting to occur it is important to recognise the limitations of current models of training delivery that tend to target knowledge deficits rather than offering opportunities to master the clinical skills required to work in a PIP way. The findings from this work highlight a lack of confidence and skills among healthcare professionals in applying PIP and are aligned with the literature in this field. This reinforces the need for training programmes to address this confidence gap and equip healthcare professionals with the necessary skills to implement PIP effectively.

One aspect that requires attention is the compartmentalisation of psychosocial factors as separate from the physical aspects of illness. The findings underscore the importance of breaking down these barriers and fostering a more integrated approach to care. By acknowledging and addressing the interrelationship between physical and psychological well-being, healthcare professionals can provide more comprehensive and effective care to their patients whilst remaining within their professional boundaries. In addition, developing skills in PIP may assist non-psychologist healthcare professionals to recognise the impact of chronic pain on mental health and wellbeing, and to know when, in addition to continuing their own work with the patient, referral for specialist psychological input is required. The

findings highlight the concerns relating to professional boundaries and the potential restrictions this can impose on the flexibility of healthcare professionals. It is important to explore ways to provide training and support that encourage flexibility in practice, allowing healthcare professionals to adapt and integrate PIP effectively.

Our findings also highlight awareness among healthcare professionals regarding their own internal or personal wellbeing and how this may impact clinical practice and delivering PIP. One hypothesis could be that addressing these issues can stir up emotions and contribute to burnout symptoms leading to avoidance of PIP to protect themselves. The role of the healthcare professional in building a therapeutic alliance and delivering person-centred care is central to the success of PIP and this is affected by their internal emotional landscape. Shared decision-making and effective communication are also key components of this process. The findings from the focus groups stress the importance of developing and maintaining core skills related to narrative aspects of practice, which are relevant across healthcare conditions.

The need for adequate space and time to learn and practise skills is another point that is strongly evident from the discussions. The challenges faced by healthcare professionals in managing their clinical workload and delivering care in a PIP manner underscore the necessity for dedicated time and supportive environments for practice and reflection with thos skilled in this approach.. Peer support that takes the form of ongoing feedback and peer

supervision is seen as a valuable resource in this regard and training programmes need to consider ways to integrate this.

The insights gained from this research will be used to inform the development of a comprehensive training program for healthcare professionals. This programme will address the identified skill gaps, help practitioners to understand and experience the benefits of working using PIP approaches and the integration of psychological aspects into care, and provide opportunities for reflective practice and peer support. Furthermore, the findings underscore the importance of integrating ongoing supervision as an integral part of the training programme, rather than keeping it separate. Further information on the programme will be published in a follow up paper.

Strengths and Limitations of this Study

This study presents findings from three focus groups with participants from the UK healthcare setting and therefore findings should be interpreted with this in mind. The research and design group included members who have published research previously relating to this topic which may have added bias to the interpretation of findings. However the inclusion of others including two people with lived experience from the early stages of the project were intended to mitigate this.

Conclusion

The themes discussed collectively offer a thorough understanding of the factors affecting the perception and application of PIP among healthcare professionals. They will be used to inform the development of a training programme that addresses concerns raised by providing practical strategies for enhancing PIP delivery, ultimately contributing to the evolution of PIP within healthcare settings. These findings underscore the need for this training. The training programme will need to provide necessary resources, promote reflective practice, and offer opportunities for peer support to enhance the quality of PIP delivery in healthcare settings.

Ethical Approval

The Queen Mary (University of London) Ethics of Research Committee approved this study (QMREC2305a). All participants gave written informed consent before data collection began.

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Conflict of Interest

The authors have no conflicts of interest to declare.

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References

1. Main CJ, George SZ. Psychosocial Influences on Low Back Pain: Why Should You Care? Phys Ther. 2011 May 1;91(5):609–13.

2. van der Windt D, Hay E, Jellema P, Main C. Psychosocial Interventions for Low Back Pain in Primary Care: Lessons Learned From Recent Trials. Spine. 2008 Jan;33(1):81–9.

3. Main CJ, Sowden G, Hill JC, Watson PJ, Hay EM. Integrating physical and psychological approaches to treatment in low back pain: the development and content of the STarT Back trial's 'high-risk' intervention (StarT Back; ISRCTN 37113406). Physiotherapy. 2012 Jun;98(2):110–6.

4. Keefe FJ, Main CJ, George SZ. Advancing Psychologically Informed Practice for Patients With Persistent Musculoskeletal Pain: Promise, Pitfalls, and Solutions. Phys Ther. 2018 May 1;98(5):398–407.

5. Nicholas M, Vlaeyen JWS, Rief W, Barke A, Aziz Q, Benoliel R, et al. The IASP classification of chronic pain for ICD-11: chronic primary pain. Pain. 2019 Jan;160(1):28–37.

6. Harding V, Williams AC de C. Extending Physiotherapy Skills Using a Psychological Approach: Cognitive-behavioural management of chronic pain. Physiotherapy. 1995 Nov;81(11):681–8.

7. Weinman J, Medlik L. Sharing psychological skills in the general practice setting. Br J Med Psychol. 1985;58(3):223–30.

8. Coronado RA, Brintz CE, McKernan LC, Master H, Motzny N, Silva FM, et al. Psychologically informed physical therapy for musculoskeletal pain: current approaches, implications, and future directions from recent randomized trials. PAIN Rep. 2020 Oct;5(5):e847.

9. Sharpe L, Jones E, Ashton-James CE, Nicholas MK, Refshauge K. Necessary components of psychological treatment in pain management programs: A Delphi study. Eur J Pain. 2020;24(6):1160–8.

10. Booth J, Moseley GL, Schiltenwolf M, Cashin A, Davies M, Hübscher M. Exercise for chronic musculoskeletal pain: A biopsychosocial approach. Musculoskeletal Care. 2017 Dec;15(4):413–21.

11. Nicholas MK. The biopsychosocial model of pain 40 years on: time for a reappraisal? PAIN. 2022 Nov;163(S1):S3.

12. Beneciuk JM, George SZ, Greco CM, Schneider MJ, Wegener ST, Saper RB, et al. Targeted interventions to prevent transitioning from acute to chronic low back pain in high-risk patients: development and delivery of a pragmatic training course of psychologically informed physical therapy for the TARGET trial. Trials. 2019 Dec;20(1):256.

13. Hansen Z, Daykin A, Lamb SE. A cognitive-behavioural programme for the management of low back pain in primary care: a description and justification of the intervention used in the Back Skills Training Trial (BeST; ISRCTN 54717854). Physiotherapy. 2010 Jun;96(2):87–94.

14. Hansen Z. The competence of physiotherapists to deliver a cognitive behavioural approach for low back pain. :271.

15. Sterling M, Smeets R, Keijzers G, Warren J, Kenardy J. Physiotherapist-delivered stress inoculation training integrated with exercise versus physiotherapy exercise alone for acute whiplash-associated disorder (StressModex): a randomised controlled trial of a combined psychological/physical intervention. Br J Sports Med. 2019 Oct;53(19):1240–7.

16. Norman-Nott N, Wilks CR, Hesam-Shariati N, Schroeder J, Suh J, Czerwinski M, et al. The No Worries Trial: Efficacy of Online Dialectical Behaviour Therapy Skills Training for Chronic Pain (iDBT-Pain) Using a Single Case Experimental Design. J Pain. 2022 Apr 1;23(4):558–76.

17. Belache FTC, Souza CPD, Fernandez J, Castro J, Ferreira PDS, Rosa ERDS, et al. Trial Protocol: Cognitive functional therapy compared with combined manual therapy and motor control exercise for people with non-specific chronic low back pain: protocol for a randomised, controlled trial. J Physiother Elsevier. 2018 Jul;64(3):192–192.

18. O'Keeffe M, O'Sullivan P, Purtill H, Bargary N, O'Sullivan K. Cognitive functional therapy compared with a group-based exercise and education intervention for chronic low back pain: a multicentre randomised controlled trial (RCT). Br J Sports Med. 2020 Jul;54(13):782–9.

19. Vibe Fersum K, O'Sullivan P, Skouen JS, Smith A, Kvåle A. Efficacy of classification-based cognitive functional therapy in patients with non-specific chronic low back pain: A randomized controlled trial. Eur J Pain. 2013 Jul;17(6):916–28.

20. Bryant C, Lewis P, Bennell KL, Ahamed Y, Crough D, Jull GA, et al. Can Physical Therapists Deliver a Pain Coping Skills Program? An Examination of Training Processes and Outcomes. Phys Ther. 2014 Oct 1;94(10):1443–54.

21. Fortune J, Breckon J, Norris M, Eva G, Frater T. Motivational interviewing training for physiotherapy and occupational therapy students: Effect on confidence, knowledge and skills. Patient Educ Couns. 2019 Apr 1;102(4):694–700.

22. Main CJ, Ballengee LA, George SZ, Beneciuk JM, Greco CM, Simon CB. Psychologically Informed Practice: The Importance of Communication in Clinical Implementation. Phys Ther. 2023 Jul 1;103(7):pzad047.

23. Lin I, Wiles L, Waller R, Caneiro JP, Nagree Y, Straker L, et al. Patient-centred care: the cornerstone for high-value musculoskeletal pain management. Br J Sports Med. 2020 Nov 1;54(21):1240–2.

24. Nicholls DA. Fragility and Back Pain: Lessons From the Frontiers of Biopsychosocial Practice. Phys Ther. 2023 Apr 20;103(6):pzad040.

25. UCL. UCL Psychology and Language Sciences. 2018 [cited 2024 Apr 22]. Cognitive and Behavioural Therapy. Available from: https://www.ucl.ac.uk/pals/research/clinical-educational-and-health-psychology/research-groups/competence-frameworks-0

587 26. Miciak M, Mayan M, Brown C, Joyce AS, Gross DP. The necessary conditions of
588 engagement for the therapeutic relationship in physiotherapy: an interpretive description
589 study. Arch Physiother. 2018 Dec;8(1):3.

590 27. Nicholls DA. Fragility and Back Pain: Lessons From the Frontiers of Biopsychosocial
591 Practice. Phys Ther. 2023 Jun 1;103(6):pzad040.

592 28. Stannard C, Johnson M. Chronic pain management -can we do better? An interview-
593 based survey in primary care. Curr Med Res Opin. 2003 Jan;19(8):703–6.

594 29. Ponte CD, Johnson-Tribino J. Attitudes and Knowledge About Pain: An Assessment of
595 West Virginia Family Physicians. Fam Med. 2004;37(7):4.

596 30. Synnott A, O'Keeffe M, Bunzli S, Dankaerts W, O'Sullivan P, O'Sullivan K.
597 Physiotherapists may stigmatise or feel unprepared to treat people with low back pain and
598 psychosocial factors that influence recovery: a systematic review. J Physiother. 2015
599 Apr;61(2):68–76.

600 31. Hadi MA, Alldred DP, Briggs M, Marczewski K, Closs SJ. 'Treated as a number, not
601 treated as a person': a qualitative exploration of the perceived barriers to effective pain
602 management of patients with chronic pain. BMJ Open. 2017 Jun;7(6):e016454.

603 32. Gum AM, Epstein-Lubow GP, Gaudiano BA, Wittink M, Horvath C. Brief behaviour change
604 strategies for distressed patients in primary care. BMJ. 2019 Sep 24;l5360.

605 33. Britten N, Ekman I, Naldemirci Ö, Javinger M, Hedman H, Wolf A. Learning from
606 Gothenburg model of person centred healthcare. BMJ. 2020 Sep 1;m2738.

34. Nielsen M, Keefe FJ, Bennell K, Jull GA. Physical Therapist–Delivered Cognitive-Behavioral Therapy: A Qualitative Study of Physical Therapists' Perceptions and Experiences. Phys Ther. 2014 Feb 1;94(2):197–209.

35. Hay E, Mullis R, Lewis M, Vohora K, Main C, Watson P, et al. Comparison of physical treatments versus a brief pain-management programme for back pain in primary care: a randomised clinical trial in physiotherapy practice. The Lancet. 2005 Jun;365(9476):2024–30.

36. Sowden G, Hill JC, Konstantinou K, Khanna M, Main CJ, Salmon P, et al. Targeted treatment in primary care for low back pain: the treatment system and clinical training programmes used in the IMPaCT Back study (ISRCTN 55174281). Fam Pract. 2012 Feb 1;29(1):50–62.

37. Denneny D, Frijdal (nee Klapper) A, Bianchi-Berthouze N, Greenwood J, McLoughlin R, Petersen K, et al. The application of psychologically informed practice: observations of experienced physiotherapists working with people with chronic pain. Physiotherapy. 2020 Mar;106:163–73.

38. Booth A, Hannes K, Harden A, Noyes J, Harris J, Tong A. COREQ (Consolidated Criteria for Reporting Qualitative Studies). In: Guidelines for Reporting Health Research: A User's Manual [Internet]. John Wiley & Sons, Ltd; 2014 [cited 2024 Apr 22]. p. 214–26. Available from: https://onlinelibrary.wiley.com/doi/abs/10.1002/9781118715598.ch21

39. Denneny D, Walumbe J. Training physiotherapists in psychologically informed practice using a novel online approach. Physiotherapy. 2021 Dec;113:e192.

628 40. Norström AV, Cvitanovic C, Löf MF, West S, Wyborn C, Balvanera P, et al. Principles for
629 knowledge co-production in sustainability research. Nat Sustain. 2020 Jan 20;3(3):182–
630 90.

631 41. Thorne S. Interpretive Description: Qualitative Research for Applied Practice. Routledge;
632 2016. 337 p.

633 42. Thompson Burdine J, Thorne S, Sandhu G. Interpretive description: A flexible qualitative
634 methodology for medical education research. Med Educ. 2021;55(3):336–43.

635 43. Ryan KE, Gandha T, Culbertson MJ, Carlson C. Focus Group Evidence: Implications for
636 Design and Analysis. Am J Eval. 2014 Sep;35(3):328–45.

637 44. Sim J, Waterfield J. Focus group methodology: some ethical challenges. Qual Quant.
638 2019 Nov;53(6):3003–22.

639 45. Erlingsson C, Brysiewicz P. A hands-on guide to doing content analysis. Afr J Emerg Med.
640 2017 Sep;7(3):93–9.

641 Appendix 1

642 Focus group Topic Guide (prompts in bullet points if not covered in open discussion)

643 1. What are your thoughts on Therapeutic Alliance (TA)?

644 • Are you aware of TA when you work with patients?
645 • What factors contribute to TA and what does it look like in practice?
646 • How confident are you in your skills & knowledge to maximise TA?

647 2. What are your thoughts on perceived threat when working with patients?

648 • Are you aware of perceived threat when you work with patients?
649 • What factors contribute to perceived threat and how might you identify it?
650 • How confident are you in your skills & knowledge to manage perceived threat?

3. What are your thoughts on Reconceptualising beliefs and somatic experience when working with patients?

- Are you aware of these when you work with patients?
- What factors contribute to unhelpful beliefs and somatic experience and how might you identify them in practice?
- How confident are you in your skills & knowledge to help reconceptualising beliefs and somatic experience?

4. What are your thoughts on fostering self-efficacy when working with patients?

- Are you aware of self-efficacy when you work with patients?
- What factors contribute to self-efficacy and how might you identify them in practice?
- How confident are you in your skills & knowledge to foster self-efficacy?

5. What are your thoughts on training in psychologically informed approaches?

- How do you think training might change clinical practice?
- What might the barriers be to having training?
- What might be the barriers to using PIP approaches in clinical practice?
- What would "good" training look like/include?

Appendix 2

Nodes\\SG, KH & PPA combined

Coding of all three focus groups together

Name	Description
1) Professional Practice and PIP	Includes thoughts and opinions of HCPs on PIP and aspects of their clinical practice

Name	Description
Clinical environment and outcomes	Perceptions of HCP on impact of mental wellbeing on treatment and outcomes including issues of clinical environment (private room for example)
Time factors when delivering PIP	Concerns expressed for lack of time to address issues using PIP or uncertainty regarding how much time is needed.
Professional Roles, expectations, and boundaries	Times when HCPs question whether psychological aspects fall in or out of their remit of care or their competencies, or when there are expectations from HCP or the patient regarding roles and PIP
Recognising Mental health issues	Recognising when impact on mental health is present in consultations and therapeutic relationships
Medicalisation of care	HCP thoughts on balance between referral for mental health issues and normalising experiences
Signposting	Knowledge (or lack of) regarding when, who and how to refer on
2) Interpersonal Aspects of Care and PIP	Discussion of aspects of PIP that relate to self (including self-reflection and impact on wellbeing), to the person with pain (patient), AND to the interpersonal relationship (therapeutic alliance).
HCP attributes	Identification of impact of professional work on self, including wellbeing. Also includes aspects of HCP judgements, assumptions and opinions that may influence care or perceptions of care.
Clinical experience	identifying times where level of experience is an advantage or disadvantage
Clinician Wellbeing	Reflections on how discussing or encountering psychological aspects of care impact upon the HCP
Confidence of HCP	Times when participants speak of self-confidence with psychological aspects of care
Can of worms	HCP use of the term "can of worms" when thinking about mental health/PIP approaches
Opinions, Judgements, or Stigma	Examples of HCP perceptions/ thoughts on patients and mental wellbeing that could be perceived as judgemental and/or implicit assumptions regarding patient and reasons for engagement or not. Also examples of

Name	Description
	when own perceptions might impact on own experience of care and treatment.
Patient Attributes and Impact	Expressions of impact of condition (pain) on the person with pain. Recognition of the challenges they face and impact on ability to experience benefit from treatment.
Therapeutic alliance	Identifying times when PIP, or aspects of mental health and wellbeing impact on therapeutic relationship
Listening	Identifying the importance and relevance of listening skills
Trust	Identifying issues of trust in clinical encounters and impact of this
Validation	Identifying importance of believing and validating someone's experience
3) Conditions to support PIP application	Identified areas/needs/suggestions to support development and application of PIP skills
Resources	Times when HCP suggests or identifies resources that would be helpful
Supervision and Reflective practice	Times when HCP identifies need for supervision and reflection
Peer support for HCPs	Identifying value of peer support
Training needs for PIP	Expressions of desire for, or a lack of training to manage impact on mental wellbeing/PIP
Ability to Practice PIP	Identifying the importance of time to practice together wiht peers
Benefits of PIP	Potential benefits of identifying and working with impact on psychological wellbeing
Challenges working with PIP	HCP identified challenges working in a PIP manner

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Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No. Item	Guide questions/description	Reported on Page #, line #
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Inter viewer/facilitator	Which author/s conducted the interview or focus group?	10, line 176
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	Provided in title page
3. Occupation	What was their occupation at the time of the study?	9, lines 149-56
4. Gender	Was the researcher male or female?	9, lines 154/5
5. Experience and training	What experience or training did the researcher have?	1 and 9, lines 153 to 156
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	No, Externally facilitated focus groups
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	10 and 11
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	Pages 8 & 9, study context and team Lines 139-159

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Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Use of Interpretive descriptive qual methodology and QCA. 9, lines 162 -169 and 11, lines 207-12
Participant selection		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	10; lines 179-80, and 11; lines 196-198
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	10; lines 179-80, and 11; lines 196-198
12. Sample size	How many participants were in the study?	1, 10 and 11
13. Non-participation	How many people refused to participate or dropped out? Reasons?	NA
Setting		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	10 and 11
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	NA
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	10 and 11
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Topic guide 10, 11 and Appendix 1, page 31
18. Repeat interviews	Were repeat inter views carried out? If yes, how many?	3 Focus groups, Page 10, line 176
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	11, lines 202-3
20. Field notes	Were field notes made during and/or after the interview or focus group?	No
21. Duration	What was the duration of the inter views	10, lines 180-1

	or focus group?	
22. Data saturation	Was data saturation discussed?	N/A. Qualitative paper, not appropriate for methodology we used.
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	No
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	How many data coders coded the data?	One. 12, line 212
25. Description of the coding tree	Did authors provide a description of the coding tree?	Appendix 2, page 32
26. Derivation of themes	Were themes identified in advance or derived from the data?	12, lines 222-4
27. Software	What software, if applicable, was used to manage the data?	N-Vivo, 12, Line 212
28. Participant checking	Did participants provide feedback on the findings?	No
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Yes, in findings section line 218-409
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes.
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes, in abstract, and lines 222-4
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Yes, minor themes in findings section (lines 236 to 409)

CRediT author statement

Title: Exploring physiotherapist experiences and beliefs about psychologically informed practice (PIP) to inform development of a training programme

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