The application of Psychologically Informed Practice: Observations of experienced physiotherapists working with people with chronic pain.

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Abstract.

Objectives: Psychologically informed practice (PIP) is advocated for physiotherapists to help people with chronic pain. There is little research observing how PIP is delivered in clinical practice. This study describes behaviours and techniques used by experienced physiotherapists working with groups of people with chronic pain.

Setting and Participants: Experienced physiotherapists (n=4) were observed working with groups of people with chronic pain in out-patient pain management, and physiotherapy departments, in a large UK city centre teaching hospital.

Design: We observed the clinical behaviours and interpersonal skills of experienced psychologically informed physiotherapists, enriched by their accounts of intentions. The physiotherapists were audio and video recorded delivering group movement sessions.

Recordings were reviewed with the physiotherapists for elaboration of intentions, then thematically analysed for comparison with defined CBT competencies.

Results: Four themes representing physiotherapist intentions when working with people with chronic pain were identified; building a therapeutic alliance, reducing perceived threat, reconceptualising beliefs and somatic experience, and fostering self-efficacy. The physiotherapists also reflected on challenges including engaging patients in self-management, encouraging activity and reinforcing rather than correcting movement. Considerable overlap existed between the observed behaviours in this study and existing CBT competencies.

Conclusions: This paper complements current recommendations for delivering psychologically informed physiotherapy by providing examples of these skills being used in clinical practice. Further research supporting the development of training for, and mentoring of, physiotherapists, to promote competence and confidence in delivering psychologically informed interventions is recommended.

Key words:

Chronic pain, Psychologically informed, Cognitive Behavioural Therapy, Qualitative

Contribution of paper

- This study describes behaviours and techniques used by experienced physiotherapists working with groups of patients with chronic pain.
- This paper complements current recommendations for delivering psychologically

informed physiotherapy by providing examples of these skills being used in clinical practice.

Background:

Chronic pain is difficult to treat and poses a major healthcare challenge, affecting up to half the UK population [1]. Its management requires a biopsychosocial model prioritising self-management [2], since treatment of even the most severely affected 1% requires more resources than could ever be available [3]. Psychological approaches to extend and enhance the skills of physiotherapists, and promote self management with patients, have been advocated for over twenty years [4]. Delivering these psychological approaches and promoting patient self-management necessitates changes in usual behaviours of health care practitioners [5].

Guidelines recommend treatment packages with psychologically informed practice alongside exercise and activity [6,7], but do not specify the interpersonal skills and behaviours required by clinicians to deliver this approach. The phrase *psychologically informed practice* (PIP) [2] represents a trend towards inter-professional working [8,9], particularly in the management of chronic pain (see McLoughlin [10] for example). The term PIP is itself open to interpretation. Main and George [2] focus on the patient context and experience, referring "primarily to the

inclusion of a specific focus on psychosocial or psychological factors (both clinical and occupational) for [chronicity] risk determination and as potential targets for intervention by the physical therapist". Wilson [11], by contrast, describes PIP in terms of the methods used by the physiotherapist, delivered "within a psychological framework". PIP is often taken to involve cognitive-behavioural techniques (CBT), which may encompass mindfulness and/or acceptance-based interventions, stress management, relaxation training, hypnosis, coping skills training, problem solving, systematic desensitisation, and motivational interviewing, in combination with physiotherapy and delivered by a physiotherapist [,12,13].

1.

Physiotherapists have the training and credibility to assess risk versus safety in human movement and have a key role in reducing disability in persistent pain conditions [14]. In healthcare delivery they provide a bridge between biomedical and psychosocial models of care, and many interactions with patients provide education, advice and reassurance intending to target unhelpful beliefs and behaviours [14].

While recognising that other models of behaviour change are available [15] , here we focus on CBT, as a pervasive model of effective change in chronic pain rehabilitation. CBT draws on a theoretical and evidence base: it is practiced flexibly, in the moment, using understanding of the principles and applying them to physiotherapeutic content. Identification of unhelpful beliefs or thinking patterns, and of ways to work with them in a physiotherapeutic setting, have been

described in the physiotherapy literature [16,17]. CBT requires a collaborative relationship with the client, sharing framework and methods, as a joint exploration in which the client learns skills to apply beyond the therapeutic setting in development of self-management skills. Experiential learning is recognised as fundamental to the behaviour change required for self-management skills [15]. Physiotherapists are ideally placed to promote experiential learning particularly through movement and activity focused sessions.

Relevant competences in CBT for psychologist practitioners are shown in table 1, and share characteristics with those outlined by Hansen [18] and the Physiotherapy Pain Assocation [19] for physiotherapists working in pain services.

Table 1: Competence model for cognitive and behavioural therapy (CBT) practitioners

Through undergraduate and early career training, physiotherapists are expected to demonstrate basic physiotherapy competencies that align with *generic* and *basic* CBT competences identified in Table 1 (I. and II.), such as the ability to engage the client, foster a good relationship, agree goals, and set homework. Newly qualified physiotherapists are expected to be able to prescribe appropriate and engaging home exercise programmes for patients.

Many factors influence the patient/therapist relationship and treatment including; therapeutic alliance [20], practitioner/therapist effects [21], attitudes and beliefs [22], empathy [23,24], and other emotional responses [25]. While many physiotherapists demonstrate a positive attitude and beliefs regarding PIP, they identify the need for further training to instil confidence in

practice [26]. Physiotherapists have reported low confidence in challenging unhelpful thoughts [18]. Interpersonal skills used to deliver PIP are poorly specified in the literature [27,28] and physiotherapists tend to prefer dealing with the more mechanical aspects of low back pain [22], and consider that neither their initial training nor available professional development training provided them with the requisite skills and confidence to successfully identify and address the psychological and social aspects of low back pain [22]. Where skills training has subsequently been sampled in practice, it has not shown as consistent or widespread effects as intended [29].

Thus while there is widespread enthusiasm for the aims of PIP, within the profession and the NHS, we are still some way from defining the competences of PIP, and how best to train them. Rather than training physiotherapists in researcher-selected elements of CBT, and assuming that the physiotherapists practiced it effectively with patients, this paper rather examined what psychologically informed physiotherapists actually do in practice, taking a phenomenological approach to their behaviours and the intentions informing these behaviours, recorded during sessions with patients with chronic pain.

Methods

Clinical behaviours and interpersonal skills were collected from observations, enriched by participants' accounts of their intentions, and mapped against the CBT competences identified

in table 1. NHS ethics approval was obtained (Ref 11/078).

Participants and recruitment

Participating physiotherapists (table 2) were recruited from a large central London teaching hospital as part of research on the design of technology to support self-directed rehabilitation [30,31,32]. They were known to the research team, having advised on other aspects of the larger research study. The observed therapists had variable training but considerable experience working alongside psychologists in chronic pain. All physiotherapists who were approached agreed to take part and no drop outs occurred. Partaking in the study was of their own valition. In order to be included in the study physiotherapists had to:

- run a group treatment for chronic pain patients over several weeks
- have at least 5 years of expertise within the field of chronic pain
- be a member of the medical team of the UCLH or NHNN

Table 2: Participating physiotherapists

The observed group sessions varied, but were all exercise based and did not include any manual therapy (*Table 3*).

Table 3: Summary of the groups led by physiotherapists observed.

153 ***Data collection***

154 Physiotherapists were video and audio-recorded, with their consent and that of patients.
155 Cameras, and a small wearable microphone, were used to record facial expressions and body
156 movement and to capture physiotherapists' communicative and expressive behaviours [33].
157 Recordings were then reviewed with the physiotherapists for elaboration of intentions, then
158 thematically analysed for comparison with defined CBT competencies [34].

159 Initially, physiotherapists reviewed the video with a psychologist researcher (AF), using
160 'naturalistic social cognition methodology' [34]. The researcher (female) was a psychology
161 graduate, new to research in pain management, with a 6 month postgraduate scholarship
162 interest in influences of social interaction on pain, There was no script for these one-off
163 interviews which lasted for approximately one hour and no pilot interviews were undertaken.
164 The video was stopped by either party to explore or explain behaviour and intentions in
165 interactions with patients, in particular, use of CBT techniques. The process was audio-recorded
166 and transcribed verbatim, which enabled a deep exploration of the physiotherapists'
167 understanding of situations and decision-making processes at particular moments during
168 treatment.

169 ***Data analysis***

170 Thematic analysis was applied to the transcripts, an inductive process driven by data content
171 and involving an iterative and reflexive process of extracting superordinate themes from the raw
172 data, which was managed using Microsoft Excel (2007), according to established methods
173 [35,36]. Although both researchers who conducted the thematic analysis were psychologists (AF
174 and AW), CBT competences were not accessed until thematic analysis was complete. The

researcher (AF) arranged individual meetings with each participating physiotherapist where summaries of the analysis, and the opportunity to feedback, were given.

Results

Initial coding generated 112 behaviours and intentions; these were grouped thematically and collapsed to some extent where intentions of behaviours were similar, a process carried out by the Interviewer (AF) and subsequently by another author (AW). From this, four themes representing physiotherapist intentions emerged, incorporating 11 subthemes, each described by specific behaviours, some of which appear in more than one theme. Behaviours concerning general process events such as catching a patient's eye to gain their attention or to indicate interest or approval, were not categorised.

The four themes were:

1. building a therapeutic alliance
2. reducing perceived threat
3. reconceptualising beliefs and somatic experience
4. fostering self-efficacy

Examples of strategies used by the therapists under each theme/subtheme are given below as well as one representative quotation. For further illustrative quotations see *table 4*.

Theme 1 Building a therapeutic alliance

Theme 1 consisted of various behaviours directed towards building a therapeutic alliance, including repeating patients' words to modify or emphasise important points; copying or demonstrating movement; inclusive language; nonverbal behaviour; and humour. All behaviours were directed towards engaging patients and establishing trust. We identified no subthemes in this category.

> B: "*So often I try and repeat the actual words that people have said, to acknowledge hearing them, and to kind of mirror... you know, I have heard what you have said and reinforce that that's a helpful thing that they have said.*"

Theme 2: Reducing perceived threat

We identified behaviours including goal-setting, problem-solving, and use of activity monitoring in this theme, with two sub-themes:

i) ***Normalising somatic sensations***:

Strategies used by physiotherapists included explaining somatic experience; reinterpreting symptoms as unthreatening; focusing on positive aspects and sensations; reminders of breathing; and even speaking tone and relaxed manner to model calm.

> D: *"When they're moving and stretching and they hear clicking it can be quite frightening, so it's just to remind them these are normal sounds. We will have talked about what they are, what clicking is, what's going on in the body previously, so that I don't go into huge detail, but it's to remind them that it's kind of normal."*

ii) ***Matching demand to patient tolerance***:

The physiotherapist provided individual options or modifications for exercises, or suggested taking a break, in order to mitigate patient anxiety and ensure participation.

> D: *"There is a bit of myth that exercise has to be done a certain way or it's not right, and actually there is a spectrum and there is lots of ways you can do, so it's finding what works for you. So it's giving.... giving options, and then the patient or the person can choose what works best for them*."

Theme 3: Reconceptualising beliefs and somatic experience

Helping the client to identify and modify assumptions and rules was evident in this theme, as was planning and conducting tasks to identify any bariers to activity, often referred to as behavioural experiments. We identified three sub themes.

i) *Using behaviour to influence beliefs*

Here physiotherapists used what was happening in the moment to improve patient understanding; drew on patients' experiences for illustrating behaviours; set up behavioural experiments to demonstrate principles; provided options for achieving same end by different means; guided attention; recorded and reflected on activity.

> B:"*Sometimes ... I might get to the point where ... we're just getting stuck, so I might go more into... "How about we set up an experiment or how about you give an alternative approach and give this a go and just see what happens, and it might be that your way is a better way, but you might like the new way."*

ii) ***Direct engagement with beliefs and changing beliefs***

Physiotherapists at times took a more direct approach: outlining facts; rephrasing a patient question or comment for discussion; asking about concerns; providing information about behavioural options and their consequences; asking the patient to describe behaviours and their consequences in context and generating alternative possible behaviours with consequences; negotiating goals and expectations; summarising learning from session; repeating key concepts.

> D: *"Should we sit with crossed legs?*
> *Patient 1: No.*
> *Patient 2: Yes.*
> *D: Should we not sit with crossed legs? Is crossed legs sitting bad for us?*
> *Several patients: Yes.*
> *D: They are used to me just saying "Is that a bad thing? Why is that a bad thing?" 'Cause it's getting them to question what they have been told by others. It's amazing how much we just take as gospel … rather than really thinking about it and exploring it yourself and working out why it is that way."*

In some cases, this took the form of eliciting patient reflection in order to change beliefs.

> C: *"There is a whole issue around, 'Oh this consultant doesn't want to see me again', 'Why is he telling me to go away?' kind of thing, and then asking them... see if they can come up with any answers that are a little bit more constructive than 'The medical service is letting me down'. Sometimes if you ask a patient, "So why do you think the consultant hasn't rebooked you?" or whatever, they might say, 'Well, I don't think he can help me really'. You know, if they can come up with those answers, 'Well, maybe it's because I need to live with it...' or something… towards that sort of acceptance. ... so instead of feeling unfairly treated, they might come to a little bit more of acceptance: 'Okay, the doctor does really care about me, but actually he hasn't got any medical treatment that would be beneficial for me', which is much more helpful."*

iii) ***Recognising achievement***:

Physiotherapists put emphasis on recognising achievements by recording activity and exercise; prompting attention to aspects of movement that represent achievement; and reminders of short term goals.

> C: *"If we tell the patient "Next stretch you're going to have to bend forward", for example, you might already trigger off some areas in their brains that go, "Ooooh, bending forwards is really bad", but if you just start doing it and then talk through it as you're doing it ... there's something that says to them, "Oh, actually I am bending!"*

Theme 4: Fostering self-efficacy

The emphasis on engaging and supporting the client in self-management was particularly evident in this theme, with four sub themes.

i) *Resolving possible barriers to activity*,

Physiotherapists used problem-solving with patient; elaborating description to involve or normalise; and focusing on experience not performance.

> C: *It doesn't sound silly at all, they are completely normal thoughts that you just want to walk down the street and not be noticed...*These are absolute classic obstacles to people pacing: "I want to be normal. I don't want to stop and catch my breath".

ii) Modelling behavioural changes towards activity,

This consisted of encouraging any movement over 'correct' movement; demonstrating exercises; avoiding making instructions too specific; resisting requests for prescriptive advice about exercise; modelling the patient making his/her own choices about activity; getting the patient to pace stretches by counting breaths.

> D: [re giving choices of exercise] *"We all want to have choice and want to feel like we are a bit more in control of things."*

iii) *Encouraging patient autonomy*,

Patient autonomy was guided by physiotherapists avoiding eye contact to reduce patients' dependence on supervision; moving away from patient; shifting topic or starting new conversation; deciding when to explain more and when to stop talking; reminders of short term goals; asking patients to lead parts of sessions.

> A: *"I think sometimes if you're too prescriptive, people will think that... they can only exercise with supervision and then you're over-medicalising them again and a whole part of this process is to de-medicalise it."*

iv) Encouraging self-attribution of success

Physiotherapists emphasised self-attribution of success by giving positive feedback to the whole group; recording activity; pausing to reflect on achievements; and giving feedback to individual about doing something challenging.

> C: *"The ultimate aim is for them to move with confidence rather then moving in a way that we want them to move."*

Physiotherapists' reflections on their role

Several comments from each physiotherapist referred to behaviours used in combination, but more striking were dilemmas that occurred across themes, in three particular areas:

1. Whether they succeeded in engaging a patient in learning self-management methods, rather than eliciting compliance through instructions.
2. Rather than listen to the patient's concerns, and possibly attempt to resolve those that undermined movement, shouldthe physiotherapist encourage *any* activity, even to 'try it and see'..
3. When to reinforce any movement and effort rather than trying to correct or shape the particular movement towards the desired performance.

All these were particularly demanding in group sessions, and often not possible for individual physiotherapists to resolve although they clearly reflected critically on their decisions.

> C: [trying to engage someone who had had a fall and was worried about lots of new pains, then got on an exercise bike]
>
> *"What we are trying to do is get some principles of how to do exercise and how to do activity, and that's what I am miserably failing with this guy to elicit from him: 'Yes, I have got the principle, I understand the principles', and now that we have done this behavioural experiment where he just did whatever he wanted to do and he came back and said, 'It didn't give me a flare-up': unfortunately, it hasn't taught him anything."*

The physiotherapists were acutely aware of the risk of iatrogenic problems resulting from advice not supported by evidence, or unwittingly colluding with patients' caution about movement.

> C: [re stretch instructions] *"In a group where you're doing stretches, in context, 'gentle' is fine, but sometimes in letters ... I think the word... you just have to be careful in case gentle means 'be careful not to'."*

Last, all physiotherapists were careful not to assume the role of a psychologist, but to liaise with

them and share understanding, on a firm basis of their psychological stance on patients' difficulties.

> D:*" You can't possibly help somebody with chronic pain by just focusing on the physical and not be aware of everything that is coming up for them. So yeah, we are not psychologists. And where a lot may come up, then we probably try and involve psychology… I imagine the patients who generally tend to say no to psychology side come to us, tend to use us as okay to talk about this stuff because you are not a psychologist, … so I guess part of the challenge for us is getting them to accept that maybe psychology could be a really useful thing for them to be more engaged with. "*

Discussion

Recommendations for the use of psychologically informed approaches alongside physical therapy are increasing [6]. Greater emphasis is now placed on self-management in physical and psychological therapies [37]. To date, however, very little is published on the actual clinical behaviours of experienced physiotherapists working in a psychologically informed way with people who have chronic pain. This paper provides clinical examples of how experienced physiotherapists deliver this approach and how their behaviours link to an existing competency framework.

Mapping observed behaviours with CBT competencies

Considerable overlap existed between the observed behaviours in this study and the CBT competencies presented in table 1. The capacity to work from the patient's perspective is evident across all themes, engaging with patients' beliefs and current level of activity or willingness to make a particular movement. Building a therapeutic alliance, which emerged as

384 the first theme, was perhaps the longest-established skill of these physiotherapists, not
385 acquired only through CBT training and supervision. It was described in an integrated way
386 across verbal and nonverbal behaviours, with (perhaps surprisingly) no subthemes. Evidence of
387 CBT metacompetences, including use of clinical judgement in implementing treatment, adapting
388 interventions to the client, and using and responding to humour, emerged across all themes.
389
390 Throughout themes two and three (Reducing perceived threat and Reconceptualising beliefs
391 and somatic experience) there is evidence of brief, informal behavioural experiments being
392 integral to PIP sesssions. Together with review and reflection, demonstrated largely in themes
393 three and four (Reconceptualising beliefs and somatic experience and Fostering self-efficacy),
394 our evidence shows PIP sessions embody experiential learning. To our knowledge this is the
395 first account of experienced physiotherapists demonstrating the application of CBT and the
396 importance of behavioural experimentation. By building a therapeutic alliance and reducing
397 perceived threat, the physiotherapists were able to facilitate the reconceptualisation of beliefs
398 and experience and enhance self-efficacy.
399
400 Physiotherapists use a range of psychological skills with patients, but reflecting on their
401 performance in a way that helps to develop competence is often attenuated by time pressures,
402 reimbursement issues, lack of appropriate supevision, patients' expectations of physiotherapy ,
403 and other barriers [16]. Reflection is an important tool for the therapist, in terms of using
404 strategies they have learned in training to enhance practice. Within this study, physiotherapists
405 reflected that at times "*they were uncertain whether they had succeeded in engaging a patient*

406 *in learning self-management methods, rather than eliciting compliance as with traditional*
407 *physiotherapy*". This quote illustrates that psychologically informed physiotherapists are aware
408 of the importance of reflecting on an action with the patient, identifying what has been learned
409 and how this will influence future behaviour. .
410
411 Three of the four physiotherapists in the study had attended at least a two day CBT training
412 course and had monthly psychology supervision. None of the CBT courses included follow-up
413 supervision or supported reflection, despite current recommendations for training
414 physiotherapists in PIP [13] and evidence demonstrating improving learning [38]. This highlights
415 an important gap in current PIP training and delivery, supporting integration of theoretical skills
416 in practice, especially where psychology supervision is not accessible. The development of
417 mentoring and peer supervision networks may provide some ways to address this issue.
418
419 **Strengths and limitations**
420
421 The real-life material used offers direct evidence of what psychologically-informed
422 physiotherapists do in practice, distinct from role-play or discursive accounts. However,
423 physiotherapists may have been influenced by the presence of cameras and the psychologist
424 operating them, and made more conscious effort to display CBT competencies in their
425 interactions with patients. Qualitative analysis is always subject to unconscious bias on the part
426 of those who perform it, and the psychological background of the two researchers, one a reader
427 in clinical, educational and health psychology and the other a psychology graduate, both of

whom were known to the participants, doubtless informed understanding of the material. However, the quotations themselves demonstrate the high level of psychological literacy, and the extent of self-critical reflection, of the four physiotherapists involved. Additionally, while to a large extent spontaneous, the physiotherapist explanations of both behaviour and intentions might have been somewhat censored for better self-presentation. Thematic analysis was used as given the breadth of the phenomenon being studied a true phenomenological approach was not possible. Lastly, The N for this study is very small, partly because we wished to be certain of the level of training and experience of our subjects, and partly because the methods themselves were very time-consuming for researchers and for physiotherapist participants. Ideally, a better resourced study would sample a wider range of physiotherapists at work, to achieve data saturation and perhaps use random or purposive sampling of videoed material to make methods feasible for larger numbers.

Conclusion

This research sought to identify what physiotherapists actually do in practice that qualifies as psychologically informed practice. The analysis here can enrich our understanding of psychological competences in the practice of physiotherapy by providing clinical examples of the application of psychologically informed approaches. Whilst development of *generic therapeutic* and *basic CBT* competences form part of physiotherapy undergraduate and early career training,the question is: what additional behavioural changes are required in order to deliver psychologically informed physiotherapy, and promote patient self-management [5]? This

study describes behaviours and techniques used by physiotherapists experienced in psychologically informed aproaches andworking with groups of patients with chronic pain. The physiotherapists studied clearly demonstrated competences as outlined in the model for cognitive and behavioural therapy (CBT) practitioners (table 1) in a clinical setting. They were able to identify and reflect on the skills, applied specifically to the needs and difficulties of people with chronic pain. This paper complements current recommendations for training physiotherapists [13] which focus on development of a treatment manual, workshops, and supervision by experienced CBT practitioners, by providing examples of these skills being used in clinical practice..

Table 4: Themes, sub-themes and illustrative quotes

Table 5: Additional physio comments: Acknowledging Risks and Boundaries

Ethical Approval: NHS ethics was dealt with by the special office at UCL for NHS related ethics. Approval was obtained; Ref 12/0078. Full ethics was not required as this research did not directly interview patients.

Conflict of Interest: The authors of this paper have no known conflicts of interest.

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