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## Research

**Physiotherapists may stigmatise or feel unprepared to treat people with low back pain and psychosocial factors that influence recovery: a systematic review**Aoife Synnott<sup>a</sup>, Mary O'Keeffe<sup>a</sup>, Samantha Bunzli<sup>b</sup>, Wim Dankaerts<sup>c</sup>,  
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## KEY WORDS

Physiotherapy  
Qualitative  
Systematic review  
Metasynthesis  
Low back pain

## ABSTRACT

**Question:** What are physiotherapists' perceptions about identifying and managing the cognitive, psychological and social factors that may act as barriers to recovery for people with low back pain (LBP)? **Design:** Systematic review and qualitative metasynthesis of qualitative studies in which physiotherapists were questioned, using focus groups or semi-structured interviews, about identifying and managing cognitive, psychological and social factors in people with LBP. **Participants:** Qualified physiotherapists with experience in treating patients with LBP. **Outcome measures:** Studies were synthesised in narrative format and thematic analysis was used to provide a collective insight into the physiotherapists' perceptions. **Results:** Three main themes emerged: physiotherapists only partially recognised cognitive, psychological and social factors in LBP, with most discussion around factors such as family, work and unhelpful patient expectations; some physiotherapists stigmatised patients with LBP as demanding, attention-seeking and poorly motivated when they presented with behaviours suggestive of these factors; and physiotherapists questioned the relevance of screening for these factors because they were perceived to extend beyond their scope of practice, with many feeling under-skilled in addressing them. **Conclusion:** Physiotherapists partially recognised cognitive, psychological and social factors in people with LBP. Physiotherapists expressed a preference for dealing with the more mechanical aspects of LBP, and some stigmatised the behaviours suggestive of cognitive, psychological and social contributions to LBP. Physiotherapists perceived that neither their initial training, nor currently available professional development training, instilled them with the requisite skills and confidence to successfully address and treat the multidimensional pain presentations seen in LBP. **Registration:** CRD 42014009964. [Synnott A, O'Keeffe M, Bunzli S, Dankaerts W, O'Sullivan P, O'Sullivan K (2015) Physiotherapists may stigmatise or feel unprepared to treat people with low back pain and psychosocial factors that influence recovery: a systematic review. *Journal of Physiotherapy* 61: 68–76].

© 2015 Published by Elsevier B.V. on behalf of Australian Physiotherapy Association. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).**Introduction**

Low back pain (LBP) is no longer accurately viewed as a purely structural, anatomical or biomechanical disorder of the lumbar spine. Research in recent decades has highlighted that LBP is a complex disorder, which can be influenced by a wide range of other factors.<sup>1,2</sup> These include cognitive (eg, catastrophic thoughts and beliefs, unhelpful expectations, poor motivation), psychological (eg, depression, anxiety), social (eg, low job satisfaction, interpersonal relationship stress, cultural factors), physical (eg, guarded and restricted movement patterns), and lifestyle (eg, physical inactivity) factors.<sup>2</sup> These factors are seen to act as catalysts for chronicity, contributing to poorer recovery and prolonged disability in at least some people with LBP.<sup>3,4</sup>

Guidelines for LBP treatment generally acknowledge a shift towards a biopsychosocial management approach.<sup>3,5</sup> However, physiotherapists have mostly received training of a more biomedical nature, at least in their initial education, similar to

many other healthcare professionals (eg, chiropractors, osteopaths, medical doctors).<sup>6</sup> Management of physical factors, such as guarded movement patterns and muscle tension, and lifestyle factors, such as sedentary behaviour and deconditioning, have been a focus of physiotherapy training for many decades. However, the need to incorporate consideration of cognitive, psychological and social factors in LBP management may pose a greater challenge for physiotherapists.<sup>7–9</sup>

Physiotherapy students have been found to have relatively evidence-based attitudes and beliefs about pain compared to other healthcare students.<sup>10–12</sup> However, even recently graduated physiotherapists demonstrate some attitudes and beliefs about pain that are not fully in line with LBP guidelines and contemporary research findings.<sup>10,12,13</sup> Physiotherapists increasingly receive training in treatment packages that take into account cognitive, psychological and social factors in LBP;<sup>14–18</sup> however, it is unclear as to whether such training adequately equips them with the requisite skills to change patient management and outcomes.<sup>19</sup> A recent review of

several different study designs concluded that whilst physiotherapists theoretically support a biopsychosocial approach to LBP, in practice, very few are doing so adequately, despite training in cognitive behavioural principles.<sup>20</sup> However, that review<sup>20</sup> focused primarily on return to work rather than the wider population of people with LBP. Furthermore, that review included only a limited number of qualitative studies that offered useful methodology to investigate physiotherapists' perceptions and identify potential barriers, and facilitators to incorporate such factors into clinical practice. Gaining a detailed insight of physiotherapists' perceptions about these factors could be very useful in order to evaluate whether such factors are considered in LBP assessment and management. Qualitative metasynthesis is 'an interpretive integration of qualitative findings that are themselves interpretive syntheses of data'<sup>21</sup> that may contribute to clinically oriented theory.<sup>22</sup>

Therefore, the research question for this systematic review and metasynthesis was:

What are physiotherapists' perceptions about identifying and managing cognitive, psychological and social factors that may act as barriers to recovery in people with LBP?

## Method

### Identification and selection of studies

This review has been reported in accordance with the enhancing transparency in reporting the synthesis of qualitative research (ENTREQ) guidelines;<sup>23</sup> the checklist for the synthesis of qualitative data is detailed in Appendix 1 on the eAddenda. The databases EbscoHost (Academic Search Complete, AMED, Biomedical Reference Collection, CINAHL, Medline, PsychArticles, PsychInfo, SportDiscus), Embase, Scopus and Web of Science were searched between March 2014 and May 2014 by two independent reviewers.

The search strategy was developed by the authors and key words were compiled based on systematic searches of key words utilised in systematic reviews<sup>20,24</sup> performed in this area. The strategy used four groups of key words, to ensure that the selected studies included: qualitative research methodologies; physiotherapists as the treating healthcare professional; cognitive, psychological and social factors; and LBP as the condition of interest. The specific key words had to be included in the abstract to be shortlisted for this review. The full search strategy is detailed in Appendix 2 on the eAddenda.

The search was limited to English-language papers involving humans; no year limits were applied. Titles and abstracts were screened by two independent reviewers. Full-text versions of potentially eligible articles were retrieved. Manual searches of reference lists of the shortlisted articles were also performed by two independent reviewers. Recent systematic reviews of qualitative literature on LBP<sup>20,24</sup> were also shortlisted and

### Box 1. Eligibility criteria.

#### Design

- Qualitative studies
- Published in English

#### Participants

- Physiotherapists with experience in treating LBP

#### Outcomes

- Physiotherapists' perceptions regarding identifying and managing the cognitive, psychological and social factors that may act as barriers to recovery in people with non-specific LBP

searched for references. The primary authors of the studies that were initially shortlisted were contacted to identify any additional studies of potential relevance. The eligibility criteria are detailed in Box 1. Mixed-method studies were included if the qualitative analysis could be isolated. Studies investigating the perceptions of physiotherapists and other healthcare professionals or patients were only included if the physiotherapists' data could be isolated. The physiotherapists' perceptions had to relate to non-specific LBP or chronic LBP but not specific diagnoses such as cauda equina syndrome, radicular syndrome, infection, inflammatory disorders, tumour, fractures, osteoporosis or pregnancy.

### Assessment of characteristics of studies

The Critical Appraisal Skills Programme (CASP) qualitative assessment tool was applied by two authors working independently to evaluate the trustworthiness of the eligible articles. Articles were not excluded on the basis of the CASP criteria. The trustworthiness criteria evaluated within CASP are listed in Table 1, with more detailed explanation in Appendix 3 on the eAddenda. For each article, the reasoning for the unfulfilled CASP criteria is detailed in Appendix 4 on the eAddenda.

### Data extraction and synthesis

The data extracted using a purpose-designed format were: a description of the participants, the sample sizes, the methods of data collection, the aims of the studies, and the main findings related to the metasynthesis.

Data synthesis was conducted by the first author (AS), an undergraduate physiotherapy student. The analytic process described by Sandelowski and Barroso<sup>21</sup> was adapted for the review. The first stage of the process was the extraction of findings and coding of findings for each article. The second stage was grouping of findings according to their topical similarity to determine if findings confirm, extend or refute each other. The third stage was abstraction of findings – analysing the grouped findings to identify additional patterns, overlaps, comparisons and

**Table 1**  
Achievement of the Critical Appraisal Skills Programme criteria by the included studies.

Study	Clear statement of aim	Qualitative methodology appropriate	Appropriate research design	Sampling	Data collection	Researcher reflexivity	Ethical consideration	Appropriate data analysis	Clear statement of findings	Research value
Billis et al 2005 <sup>25</sup>	Y	Y	N	N	N	Y	Y	Y	N	Y
Bond et al 2012 <sup>29</sup>	Y	Y	N	Y	Y	N	Y	N	N	Y
Côté et al 2009 <sup>31</sup>	Y	Y	Y	Y	N	N	Y	Y	N	Y
Daykin et al 2004 <sup>13</sup>	Y	Y	Y	Y	Y	N	Y	Y	N	Y
Dean et al 2005 <sup>26</sup>	Y	Y	Y	N	N	Y	N	Y	Y	Y
Jeffrey and Foster 2012 <sup>32</sup>	Y	Y	Y	N	N	Y	Y	Y	N	Y
Josephson et al 2011 <sup>34</sup>	Y	Y	N	N	N	Y	N	Y	N	Y
Josephson et al 2013 <sup>36</sup>	Y	Y	N	N	N	Y	N	Y	N	Y
Sanders et al 2013 <sup>30</sup>	Y	Y	N	Y	Y	N	Y	Y	N	Y
Sanders et al 2014 <sup>37</sup>	Y	Y	N	Y	Y	N	Y	Y	N	Y
Slade et al 2012 <sup>35</sup>	Y	Y	Y	Y	Y	N	Y	Y	N	Y
Wynne-Jones et al 2014 <sup>33</sup>	Y	Y	N	Y	Y	N	Y	Y	Y	Y

Y = yes, N = no.

redundancies to form a set of concise statements (themes), which capture the content of all findings. The three stages were completed simultaneously rather than sequentially. The emerging groupings of early codings were cross-checked with on-going codes and were used to inform future codes. Final groupings were reviewed by all authors to ensure homogeneity of the codes between groups, and to ensure no potential groupings were overlooked during the analysis. To ensure that the findings were grounded in primary data and to guide the interpretive process, the coding and thematic analysis was presented to, discussed with, and critiqued by two co-authors (KOS, MOK both clinical and research physiotherapists). The suitability of the fit of the final themes to early codes/grouping was further reviewed by another author (SB) with experience in qualitative analysis.

## Results

### Identification and selection of studies

The identification and selection of studies for analysis is summarised in Figure 1. In total, 6338 articles were found in the databases. After 1133 duplicates were removed, 5205 titles and abstracts were scanned. Thirteen articles were retrieved, with four articles being excluded because they did not fulfil the inclusion criteria. One study was deemed suitable from hand searching of relevant systematic reviews. Two articles recommended by relevant authors in the LBP area fulfilled the inclusion criteria. Twelve articles in total were included in the metasynthesis. A summary of the included articles is presented in Table 2. Nine studies were located in Europe, two in Australia and one in Canada, with the majority taking place between 2004 and 2013 in physiotherapy settings. A total of 182 participants were interviewed in the 12 studies.

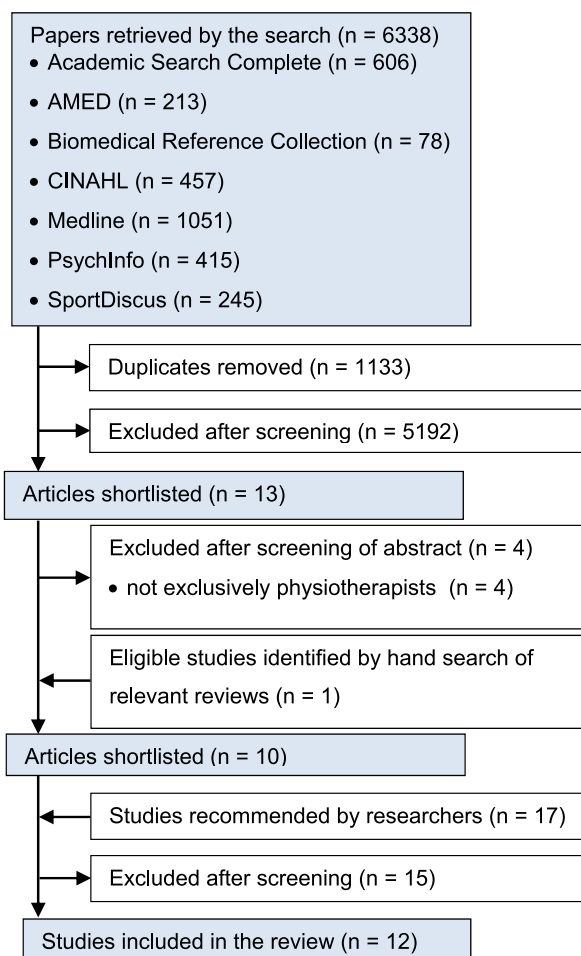


Figure 1. Flow of studies through the review.

### Description of studies

#### Confounding factors

Two studies in this review interviewed physiotherapists who primarily had experience in treating an acute LBP population.<sup>25,26</sup> Physiotherapists rarely use validated outcome measures to screen for psychosocial issues in acute LBP patients,<sup>27</sup> due to the traditional thinking that acute episodes of LBP resolve rapidly,<sup>28</sup> with outcome measures often reserved solely for those who present with poor clinical improvement. As a result, physiotherapists in the two studies that primarily had experience with an acute LBP caseload may not have had a comparable awareness of the cognitive, psychological and social factors that physiotherapists treating chronic or non-specific LBP may have had in the remaining studies.

One study<sup>29</sup> recruited physiotherapists who were employed within a military setting and were involved in treating a non-specific LBP population. It is not clear how this military setting and experience influenced these physiotherapists and if their experiences were comparable to those of the physiotherapists treating LBP recruited by the remaining studies. Participants in the remaining studies were all based within either public or private health settings.

#### Trustworthiness of results

The CASP criteria of trustworthiness met by each study are presented in Table 1. Further details about the specific reasons that individual studies failed to meet the criteria are presented in Appendix 4. For example, ten studies failed to fulfil criterion 9 due to an absence of member checking, where the original data and study findings are cross-checked with the participants. Because some studies did not meet some of the criteria, the completeness, interpretation and generalisability of the results may each have been affected. However, the studies all had clear aims research value, with consistent use of appropriate qualitative methodology and data analysis.

### Themes identified in the metasynthesis

Table 3 provides an overview of the themes and subthemes identified. Table 4 presents the number of times each subtheme was identified by a study, and the total number of times it was supported by a statement in any of the included studies.

#### Theme 1. Limited recognition by physiotherapists of the role that cognitive, psychological and social factors play in LBP

##### Subtheme 1.1. Patients' biomedical expectations

Physiotherapists in several studies described how patients' biomedical treatment expectations influenced their management approach. Some physiotherapists seemed to struggle when communicating with patients in these situations, with a view that treatment should involve either education or passive treatment, but not both.

*You certainly get a gut feel of the ones that you're wasting your time on... they perhaps think they're coming to me for a massage or something to be done to make them feel better... so they are difficult and I have to say... well, look if you don't want to follow what I'm saying I'm afraid I can't help you.<sup>30</sup>*

*Let's say you give them a nice little speech... it would surprise me if they were satisfied and if they would come back. You know they're just going to think... there's not much point in going for treatment.<sup>31</sup>*

*They don't want to hear what you're saying. They want you to make them better.<sup>32</sup>*

Consequently, the default position of many physiotherapists seemed to involve yielding to these patient expectations and administering passive treatments.

**Table 2**  
Characteristics of the included studies.

Study	Participants	Data collection	Aim	Main findings
Billis et al 2005 <sup>25</sup>	PTs dealing with a LBP population N = 18 (22% female) Qualified (yr) = 3 to 28 Workplace = 83% private	Three focus groups, each containing 6 to 8 participants	To evaluate the clinical and social factors that practising PTs and post-graduate PTs recognise as important in the assessment and management of LBP patients.	PTs readily recognised social factors such as marriage and family life as contributors to the patient's pain. However, PTs were less cognisant of the role that cognitive and psychological factors may play in the patient's pain presentation. Only a small group of PTs who had received post-graduate training paid attention to these factors in their initial examination of the patient. PTs were comfortable in utilising a biomedical approach in treating this patient caseload and often negatively stereotyped those presenting with non-specific LBP as attention seeking.
Bond et al 2012 <sup>29</sup>	PTs dealing with LBP in a military population N = 14 (60% female) Qualified (yr) = 5 to 30 Workplace = military	Semi-structured interviews	To understand civilian PTs' attitudes and beliefs towards assessing and managing LBP in a military population.	PTs recognised the influence of social factors on pain; however, they often administered contradictory biomedically-oriented treatment with weak evidence. Patients that were seen to have poor compliance and motivation for treatment were often referred onto other healthcare providers.
Côté et al 2009 <sup>31</sup>	PTs dealing with a LBP population (> 25% of caseload) N = 16 (gender n/s) Qualified (yr) = half < 10, half > 10 Workplace = 50% private	Semi-structured interviews	To identify perceived barriers and facilitators to PTs' use of clinical practice guidelines in management of LBP.	PTs recognised that cognitive factors such as patient expectations were barriers to recovery in LBP, as many patients expected hands-on treatment and were intolerant of a hands-off approach. PTs lacked confidence in their training to implement the recommended biopsychosocial approach clinically.
Daykin et al 2004 <sup>13</sup>	PTs dealing with a chronic LBP population N = 6 (100% female) Qualified (yr) = 15 to 27 Workplace = 0% private	Semi-structured interviews	To explore PTs' pain beliefs and their influence on the management of patients with chronic LBP.	PTs labelled those presenting with behaviours suggestive of cognitive, social and psychological factors as difficult. The self-perceived inexperience, and lack of training of PTs, may have contributed to this labelling.
Dean et al 2005 <sup>26</sup>	PTs dealing with a LBP population N = 8 (100% female) Qualified (yr) = 5 to 13 Workplace = 75% private	Semi-structured interviews	To explore PTs' perceptions of LBP patient's adherence to treatment.	PTs recognised cognitive factors such as unhelpful patient expectations as barriers to both patient adherence and treatment.
Jeffrey and Foster 2012 <sup>32</sup>	PTs dealing with a LBP population N = 11 Gender = 45% female Qualified (yr) = 10 to 39 Workplace = 36% private	Semi-structured interviews	To understand the personal experiences and beliefs of PTs that influence relevant decision making and management of a LBP patient population.	Even in the absence of a definitive mechanical diagnosis, PTs still classified patients purely on a mechanical basis. Cognitive factors such as patient expectations were barriers to successfully managing LBP patients. PTs questioned the value of intervention in patients that were perceived as passive or unmotivated, with some stigmatising such patients.
Josephson et al 2011 <sup>34</sup>	PTs dealing with LBP N = 21 Gender = 17% female Qualified (yr) = 6 to 40 Workplace = 19% private	Four focus groups, each containing 4 to 6 participants	To explore PTs' opinions about gaining the essential knowledge or information to successfully manage LBP.	PTs deemed those LBP patients that did not present with cognitive, psychological and social factors as 'easy'. In contrast, those that did present with these factors were described as 'complex' and posed a challenge to clinical practice.
Josephson et al 2013 <sup>36</sup>	PTs dealing with a LBP population N = 21 Gender = 71% female Qualified (yr) = 6 to 40 Workplace = 19% private	Four focus groups, each containing 4 to 6 participants	To learn how PTs describe reasoning behind their management interventions in LBP patients, and how they manage challenging patient presentations.	PTs believed that they had a responsibility to treat the easy cases. However, they were unsure of their role in the management of more complex cases when patients presented with cognitive, psychological and social factors, describing limitations in their expertise and scope of practice when managing such cases.
Sanders et al 2013 <sup>30</sup>	PTs dealing with a LBP population N = 12 (50% female) Qualified (yr) = 4 to 33 Workplace = 80% private	Semi-structured interviews	To learn how PTs incorporate a biopsychosocial approach into LBP management, and how they manage to balance the mechanical and psychosocial aspects of LBP patient care.	Combining both a biomedical and biopsychosocial approach in the management of this patient population posed a significant challenge amongst the PTs. While many recognise the importance of cognitive, psychological and social factors, they believe that addressing these factors extends beyond their scope of practice.
Sanders et al 2014 <sup>37</sup>	PTs dealing with a LBP population N = 26 (gender n/s) Qualified = n/s Workplace = 0% private	Semi-structured interviews	To evaluate perceived barriers among PTs to the implementation of a new biopsychosocial intervention in clinical practice.	PTs recognised LBP as a complex problem which involves social and psychological contributions. However, PTs felt inadequately prepared by their biomedically-oriented training to successfully address these factors in practice and advocated the need for further training.
Slade et al 2012 <sup>35</sup>	PTs dealing with a chronic LBP population N = 23 (56% female) Qualified (yr) = 1 to 37 Workplace = 43% private	Four focus groups, each containing 4 to 6 participants	To learn how PTs manage a LBP population in the absence of a definitive mechanical diagnosis.	PTs often lacked confidence or felt inadequately prepared to treat patients with non-specific LBP who did not have a clear biomedical diagnosis, due to their own biomedically-oriented training.

**Table 2** (Continued)

Study	Participants	Data collection	Aim	Main findings
Wynne-Jones et al 2014 <sup>33</sup>	PTs dealing with a LBP population N=6 (100% female) Qualified = n/s Workplace = 0% private	Semi-structured interviews	To explore both GPs' and PTs' views of managing LBP in the context of work.	While PTs routinely discussed work in the context of an assessment of a patient with LBP, their advice and treatment was often functional and mechanical in nature, perceiving that their profession is limited in instilling any change in the work environment.

GP=general practitioner, LBP=low back pain, n/s = not stated, PT=physiotherapist.

**Table 3**

Overview of themes and subthemes.

Themes	Subthemes
Limited recognition by physiotherapists of the roles that cognitive, psychological and social factors play in LBP.	1. Biomedical expectations of patients 2. Biomedical preferences of physiotherapists
Some physiotherapists stigmatise patients whose behaviour indicates that cognitive, psychological or social factors are influencing their LBP.	No subthemes identified
Limited role in managing cognitive, psychological and social factors.	1. Limited willingness to discuss with patients that these factors may influence their LBP 2. Concerns about training, expertise and exceeding professional scope of practice

**Table 4**

Number of contributing statements and articles that identified subthemes.

Subthemes	Contributing statements (n)	Contributing articles (n)
Biomedical expectations of patient	13	6
Biomedical preferences of the physiotherapist	18	7
Stigmatising of behaviours suggestive of cognitive, psychological and social factors	15	5
Limited willingness to identify factors as contributors to LBP	17	7
Concerns about training, expertise and exceeding their scope of practice	16	8

*Most people come in and they're looking for a diagnosis and therefore a click, crunch, and off they go they'll be fine.*<sup>26</sup>

#### Subtheme 1.2. Physiotherapists' biomedical preferences

Many physiotherapists believed that their role was mainly to address the mechanical aspects of LBP. Whilst there are no details on the training received by the physiotherapists, their own comments suggest that their preference for dealing with the 'mechanical' aspects of LBP reflects their own previous training and their professional confidence.

*Everyone (of my patients) gets stability exercises cause that's in fashion at the moment, so it's almost a case they get it whether they need it or not... so you are basing a lot of input on very little evidence base and yet it seems to be in fashion.*<sup>29</sup>

Even among patients who had been told that their LBP was non-specific in nature, physiotherapists preferred to explore the mechanical nature of LBP, either oblivious to the other dimensions of LBP, or choosing not to address it.

*I would probably explain to her that it was most likely postural strain... There could be an underlying facet joint degenerative problem evident.*<sup>32</sup>

Testament to this, amongst physiotherapists, there was an overwhelming preference for the biomedical pain presentation.

*I like clear pictures! It's easier isn't it, more straightforward.*<sup>13</sup>

*An uncomplicated back that feels well and allows someone to lead a rewarding life while still experiencing back pain is easy to treat.*<sup>30</sup>

Whilst physiotherapists recognised the implications of social issues, such as the influence of work-related factors on a patient's pain disorder, their advice was often linked to the functional and mechanical adaptations that patients can make in the context of work.

*If it (work) comes up in the questioning, in terms of either why they're off work, or the problems they're having at work, then yes, we'll look at, you know, the postures and the function, and any sort of ways round it or who they need to speak about it.*<sup>33</sup>

In fact, some physiotherapists attributed a progression to chronicity solely to a lack of understanding or awareness of the biomedical and mechanical drivers of pain, with no acknowledgement of the cognitive, psychological and social drivers of chronicity in back pain.

*Especially since our role as physiotherapists is to make sure that movement is restored, but we need to know what is preventing movement. Giving exercises to promote activity is fine but not enough. If you don't resolve the physical or biomechanical components, I think you will be heading towards chronicity.*<sup>31</sup>

Given the biomedically oriented preferences of patients and physiotherapists, it appeared that the cognitive, psychological and social factors were not widely recognised. Some physiotherapists seemed to recognise the significant influence on LBP of certain life events, as well as social factors such as the patient's family life and occupational environment. Very little mention of psychological factors was observed, apart from some mention of the role of fear in LBP. Overall, there was little discussion of if, or how, these factors were considered in the treatment program.

*It could be a lot of life problems behind (LBP) as the most important factor.*<sup>34</sup>

*... yea she may even need to switch jobs.*<sup>34</sup>

*Fear. Fear they might reproduce their symptoms, especially if they're not completely pain free, erm, and I think also they're worried about taking sick time again, erm, from the employers' perspective, losing their job if they keep taking sick leave.*<sup>33</sup>

#### **Theme 2. Some physiotherapists stigmatise patients whose behaviour indicates that cognitive, psychological or social factors are influencing their LBP**

Several physiotherapists described some LBP patients as poorly motivated, demanding, attention-seeking and, in some cases, self-centred and not interested in helping themselves to recover.

*Whether they're (patients) motivated to actually do something for themselves or they want you to, sort of... click your fingers; wave your magic wand and the pain'll be gone.*<sup>32</sup>

*This group of people (chronic LBP patients) are very self-centred self-focused group of people who are very interested in themselves. They're a self internal, internalizing group.*<sup>30</sup>

*Those extravagant pain people.*<sup>30</sup>

*Some do not get better with treatment due to their attention seeking need usually the neglected by their husbands women.*<sup>25</sup>

*Neglected women tend to moan I'm in pain... for attention.*<sup>25</sup>

This suggests some recognition by physiotherapists of the cognitive, psychological and social factors that might influence the pain experience. This includes depression or low mood contributing to low motivation, anxiety contributing to hypervigilance, low self-efficacy and an external locus of control contributing to a desire for passive treatment, and catastrophising contributing to extravagant behaviours.<sup>1,2</sup> However, physiotherapists neither seemed to identify cognitive, psychological or social factors as underlying causes for these observed behaviours, nor considered them as potentially modifiable factors for targeted intervention. From the language used in the above examples ('those' people, 'that' group), it appears that at least some physiotherapists in the included studies had little empathy for the cognitive, psychological or social aspects of the pain experience.

Some physiotherapists alluded to the possibility that some LBP patients may be in receipt of financial aid or disability and, as a result, are driven by a financial incentive and consequently lack a motivation for recovery.

*I suppose, I mean, if you really went down to it, you could talk about those people who are, or you know, poverty in patients, little money, sometimes, is quite, you know, they're quite willing to be ill, if you understand me?*<sup>30</sup>

*Maybe their own benefits, they will be earning more through that way than going back to work... but although I'm saying that, it's very hard to prove anything. You always have your own suspicions.*<sup>30</sup>

### **Theme 3. Limited role in dealing with the cognitive, psychological and social factors**

#### *Subtheme 3.1. Limited willingness to discuss with patients that these factors may influence their LBP*

Physiotherapists recognised the need to provide a clear and simple explanation for the patient's pain and felt that a biomedical diagnosis offered the best framework for this, even amongst those diagnosed as having non-specific LBP and where evidence for the explanation was lacking.

*The explanation is tailored entirely... on how much you feel they can understand without scaring them.*<sup>35</sup>

*Simplistic (mechanical) explanations (for their back pain), so the patients have something to hang their hat on... without saying that's the absolute truth.*<sup>35</sup>

*It's very easy to say, you've got a disc that's bulging out this way, if you do this McKenzie technique that pushes it back in... and we know that that's probably not true, but it's a simplistic way for patients to understand and you can give them a model.*<sup>35</sup>

*You have to give them some sort of diagnosis... even if I'm not a hundred per cent sure that it's facet I'll just tell them it's facet, tell them it's a disc strain so they know it's going to get better.*<sup>35</sup>

Physiotherapists expressed concerns about discussing with patients the influences that cognitive, psychological and social factors have on the presentation of pain, for fear of it 'going wrong'. Consequently, physiotherapists preferred it when patients brought up the certain cognitive, psychological or social factors related to their pain themselves, relieving the physiotherapists from this responsibility and the fear of it 'going wrong'.

*It was if I placed all the emphasis on the fact that she didn't like her job. She didn't like that; she really reacted then because I managed to identify too clearly the fact that she didn't like her job.*<sup>31</sup>

*I prefer a person (LBP patient) who can vent for herself and tell me things herself without me asking questions... cause it can go wrong.*<sup>36</sup>

Other physiotherapists described how experience from treating similar LBP patient presentations facilitated them being willing, or able, to identify these factors.

*Just through experience, you know, is that there are some joints that physios would call emotional joints.*<sup>30</sup>

*You're going to get a lot more of the psychological side coming in and that's why you need far more experienced physiotherapists, I think, to cope with that.*<sup>13</sup>

#### *Subtheme 3.2. Concerns about training, expertise and exceeding professional scope of practice*

Physiotherapists recognised the limitations of their professional training in dealing with influencing cognitive, psychological and social factors. Physiotherapists described a lack of adequate skill acquisition and were often unable to implement skills learned during training when working in clinical practice, which posed a barrier to addressing these issues in practice. In many cases, where cognitive, psychological and social factors were implicated, there was considerable pessimism about the potential for therapy to result in clinical improvement.

*I think that we are really not well equipped to give the right message across to these patients... I don't think we have enough training and background to maybe to know exactly what to say to these people, to be positive but to be realistic. I think we need more input with that kind of thing, the right things to say and the wrong things to say, would help.*<sup>37</sup>

*There is a limitation to what I can achieve with regard to, say, my counselling skills and my skills of helping them modify their pain behaviour and helping them with their cognitive, you know, construct if you like, regarding LBP.*<sup>30</sup>

*We can guide them as to ways of avoiding sitting all day, trying to encourage them to get up and move around regularly, as to make sure that they're sitting in a correct position as possible, but as far as changing what they're actually doing at work, I don't think I have much influence at all really.*<sup>33</sup>

Some physiotherapists described how their lack of expertise in these domains was so profound, there was no point even asking about them, since they could not treat them. Furthermore, even among those physiotherapists who recognised that these factors were important in LBP, many considered that the management of them was beyond their professional role and scope of practice, as they were not equipped with the knowledge or skills to have any successful input.

*Why would I give a questionnaire to my patient to identify whether he is afraid to move, if I don't know what to do about it?*<sup>31</sup>

*If there's a relationship issue and things like that, that's stuff that I won't necessarily address, because I don't think it's my area. I mean, I'm not going to start saying to patients, you know, how is your relationship with your husband at the minute, because... what am I going to do about it, if you know what I mean? If they start bringing up those sort of issues?<sup>30</sup>*

*That is where I feel I don't have much to offer, only to lend a listening ear and a bit of advice if I can, but I have no way of knowing whether that advice is appropriate.<sup>37</sup>*

This was often described in such a way as to absolve the profession from having any professional involvement. Consequently, the responsibility for treating patients presenting with cognitive, psychological and social factors is often shifted on to other healthcare professionals.

*I mean, it can't be our, we who fail (physiotherapy profession), and take the blame for it. I don't think we're barking up the wrong tree either. You can't dump it (patients' psychosocial issues) over on somebody else like that.<sup>36</sup>*

*Is that really what we think is better (physiotherapy) than just letting things take their natural course?<sup>36</sup>*

In the event that such 'difficult' patients were offered treatment, physiotherapists reported feeling pessimistic about these interactions and expected patient outcomes, which in turn reduced their own job satisfaction and their self-confidence about being capable of helping people.

*You can treat again until you're blue in the face, but you'll take two steps forwards and the patient will go away, do whatever they want, and take two steps back... and this is when you get frustrating... unresolved cases.<sup>13</sup>*

*A physiotherapist who is treating a difficult patient may switch off a little bit... I think you become less sympathetic.<sup>13</sup>*

*Difficult patients were not expected to have good treatment outcomes so the physiotherapist would write them off quickly.<sup>13</sup>*

*The sort of patient who you've been seeing for twice a week for 10 weeks, 12 weeks, 14 weeks, and yeah, when you say Mrs So-and-So's coming in and you see Mrs So-and-So's name on the books, your heart sinks down into your boots. You think 'Oh no!' That's a 'heart sink' patient.<sup>13</sup>*

## Discussion

The first theme that was identified in this review was that physiotherapists displayed limited recognition of the roles that cognitive, psychological and social factors play in LBP. Physiotherapists appeared to be more comfortable with the concept of LBP as a mechanical disorder of the spinal tissues. This is consistent with patients requesting passive 'hands-on' therapy for the spine, and physiotherapists being quite happy to provide advice on local structural diagnoses, and exercise or manual therapies directed at a local mechanical spinal disorder.

Some physiotherapists appeared to readily recognise and discuss social factors, such as family life and work, as being relevant to LBP. The main cognitive barrier to recovery that was identified was patients' biomedical treatment expectations. The issue of how to handle patients' expectations, that are deemed by physiotherapists to be unhelpful, is an interesting one. On the one hand, it has been suggested that patients' expectations and preferences should be elicited and used in the clinical decision-making process to help select treatments that have the best chance

of promoting recovery.<sup>38</sup> On the other hand, by ceding to patients' expectations and providing biomedical explanations of pain and treatments, physiotherapists may be perpetuating patients' biomedical beliefs and fears that pain indicates significant tissue damage.<sup>39</sup> It is possible that the perceived expectations of patients are heavily influenced by the beliefs and attitudes of their physiotherapists, and that patients may be more open to 'non-physical' treatment, if high-quality two-way communication is used. In addition, it may be more relevant to challenge patient beliefs around the overall range of factors involved in their LBP rather than worrying unduly about which specific treatment or exercise is used as part of treatment.

Despite expressing frustration with patients expecting biomedically oriented treatment, many physiotherapists themselves were more comfortable with LBP presentations that were deemed straightforward and did not involve complicating factors, allowing treatment to focus on 'mechanical' factors such as mobility and movement patterns. However, there is no evidence to suggest that even in 'routine' LBP presentations that an approach which only addresses mechanical factors is optimal. Such conflicting management principles have been previously documented, with physiotherapists recognising the influence of psychosocial factors on outcome in LBP, yet advising patients to remain off work.<sup>7</sup> Such an approach has previously been rationalised as indicative of pessimistic beliefs about pain, and an attempt to legitimise the experience of pain for the patient and enhance patient satisfaction.<sup>40</sup>

Apart from one study mentioning the importance of fear in LBP,<sup>33</sup> there was little mention of specific psychological factors that are known barriers to recovery, including depression, anxiety and post-traumatic stress disorder. The lack of focus on some of these factors may explain why previous research has suggested that clinicians are not as capable of identifying risk or complexity among LBP patients using questionnaires that examine these factors in a standardised manner.<sup>41,42</sup> Several such questionnaires, including the Orebro and Startback questionnaires, are now available and, based on these results, may be worth using in clinical practice.<sup>41,42</sup> However, even the use of such questionnaires would not address the reported lack of competence and confidence among physiotherapists in influencing these factors.

The second theme that was identified was that physiotherapists stigmatised some behaviours that were suggestive of cognitive, psychological and social factors being involved in patients' LBP experience. Many LBP patients had negative personal characteristics attributed to them. This included accusations of patients looking for attention, lacking motivation, being dependent of others, helping them rather than self-managing, and being motivated by the prospect of financial gain. Similar findings have been reported elsewhere, where LBP is attributed to personal weakness and a desire for secondary gain with manipulative, excessively demanding patients seen to be placing huge strain on healthcare services.<sup>43</sup> As discussed, this may reflect a lack of awareness that these behaviours may be indicative of underlying cognitive, psychological and social factors.

Another consideration is that physiotherapists often rely heavily on a structural diagnosis to inform their treatment.<sup>44</sup> When a non-specific diagnosis is used, this diagnostic ambiguity poses a challenge to the physiotherapist. Consequently, this 'non-fitting' scenario threatens their professional competence, with physiotherapists attributing responsibility for poor patient outcomes to the patient.<sup>45</sup> Quinter and Cohen<sup>46</sup> have recently discussed the stigmatisation of people with chronic pain by healthcare professionals, proposing that it can be explained by a lack of empathy towards pain patients who don't 'fit' neatly into the healthcare professional's biomedical perspective of pain. Attempts to enhance empathy may first need to come from educating physiotherapists about the underlying mechanisms of chronic LBP, as empathy is at least predicated on being able to understand what is going on with patients. Perceptions of stigmatisation by health professionals are common amongst

people with LBP and may jeopardise the patient-therapist relationship, which is closely linked to patient compliance<sup>47</sup> and successful management.<sup>44,48</sup>

It is possible that the factors perceived by physiotherapists to reflect the negative personality characteristics of a patient are in fact potentially modifiable barriers to recovery that require targeted intervention. For example, rather than being a sign of laziness or being unmotivated to help themselves, the search for a 'magic-bullet' cure may reflect deeply held biomedical beliefs that, if left unchallenged, present a barrier to recovery. Equally, repeatedly seeking passive care may indicate low self-efficacy and poor coping strategies. Thus, in order to reduce perceptions of stigmatisation amongst people presenting with LBP, it may be important to educate physiotherapists about identifying what is a potentially modifiable factor.

The third, and final, theme that was identified was the limited perceived role for physiotherapists in managing cognitive, psychological and social factors among people with LBP. Patients commonly report fear and anger, and mentioning the presence of these factors in their lives may de-legitimise their LBP in the eyes of their clinician.<sup>49,50</sup> This appears to have been experienced by some of the physiotherapists, so that they often avoided even discussing a factor unless the patient brought it up. However, in contrast to this reluctance of physiotherapists to discuss these factors with patients, previous research has identified that acknowledgement by a clinician of the impact of pain on a person's psychological health is considered to be very valuable by patients.<sup>51</sup> In other words, patients may be quite happy to have the impact of pain on their lives discussed and acknowledged, as long as there is no suggestion that these factors mean that their pain is 'psychosomatic' or imagined.

Many physiotherapists reported that they lacked the requisite skills and confidence to successfully discuss and address these factors among patients with LBP. In many ways, this probably reflects their biomedically oriented nature of their training, and the absence of explicit training in communication, such as the use of role playing during training to enhance communication skills.<sup>13</sup> In some cases, this lack of skills and confidence seems to have been used to absolve physiotherapists of their responsibility to help patients with these issues. Linton et al<sup>52</sup> previously described the physiotherapy profession as 'fear-avoidant' when confronted with these issues in practice. This fear-avoidance may be employed as a defence mechanism, in order to protect their professional confidence and self-esteem, which can be threatened by repeated encounters with patients whose 'non-specific' diagnosis is outside their clinical comfort zone.

Among the physiotherapists who reported a willingness to engage with these factors, any currently available training courses were deemed to be insufficient for developing their skills and enhancing their patient management. Instead, it was considered that substantial clinical experience was needed in order to develop sufficient expertise to enable successful management of these patients. However, there is no evidence that healthcare professionals with greater clinical experience or even a special interest in LBP display better beliefs about LBP.<sup>15,53,54</sup> These limitations might be alleviated by attending biopsychosocially-oriented workshops on LBP. However, while such training may succeed in changing beliefs regarding pain, the skills and knowledge learned during these courses do not always translate into changes in physiotherapists' management and patient outcomes and satisfaction.<sup>15,19,55</sup> One possible explanation is that physiotherapists who attend such courses know what they are expected to say after training, in terms of identifying on a case vignette some important cognitive, psychological or social factors; however, this may not reflect their actual practice. Other possibilities are that they are simply overwhelmed in trying to translate this into practice, and local resource issues (eg, staffing, space, training) do not facilitate integrating the training into their clinical practice. Some other methods of helping physiotherapists to use additional training to manage these factors in their everyday clinical practice may be needed.<sup>56</sup>

This review has several important clinical implications. The fact that cognitive, psychological and social factors were only partially identified by physiotherapists as barriers to recovery factors in LBP supports the role for using short screening tools (eg, STarTBack<sup>41</sup> and Orebro<sup>42</sup>) to specifically highlight when such factors are present. The presence of these factors, the limited understanding of how they affect patient engagement with therapy, and a lack of confidence in exploring these factors may partly explain some of the stigmatising of patients with LBP that occurs among some physiotherapists. Physiotherapists should consider whether some characteristics such as poor motivation, or dependence on passive therapies, may indicate the presence of other factors such as depression, anxiety or poor self-efficacy, which require greater consideration. Furthermore, there may be a need for greater appreciation by physiotherapists of how important it is to manage factors like patient expectations, because they are related to clinical outcomes.<sup>57,58</sup> This may require expansion of the core range of clinical tools used by physiotherapists, which can be done without reinforcing passive dependence on the physiotherapist. Because some physiotherapists feel underprepared by their traditional biomedically oriented education to adequately identify and address these factors, there is a need for additional training to ensure any additional knowledge and skills gained are transferrable to clinical practice. Consequently, it may be of benefit for physiotherapists involved in treating LBP to undergo training that specifically involves the assessment and treatment of 'live' patients, to enable physiotherapists to translate the skills they have learned into practice, with ease and confidence. This may lead to improved confidence and competence of physiotherapists, and improved patient outcomes. It may also be necessary to carry out research to establish the correct language to use when explaining pain in order to legitimise patients' pain and avoid stigmatisation.<sup>40,59</sup> Guidance from professional organisations and/or statutory healthcare providers on how these issues can be dealt with by a physiotherapist, including when onward referral to another professional or service is indicated, is currently lacking and may be very useful.

**What is already known on this topic:** Recovery from LBP can be limited by cognitive factors (eg, catastrophic beliefs, poor motivation), psychological factors (eg, depression, anxiety), and social factors (eg, low job satisfaction, relationship stress).

**What this study adds:** While some physiotherapists recognise the importance of these factors as important barriers to recovery, most prefer to treat the mechanical aspects of LBP and some stigmatise patients who demonstrate such factors. Many physiotherapists feel underprepared to treat these aspects of LBP. Physiotherapists may benefit from using screening tools with which to identify these factors and from training to help discuss and manage these factors with patients.

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## References

1. Waddell G. Low back pain: a twentieth century health care enigma. *Spine*. 1996;21(24):2820-2825.
2. O'Sullivan P. It's time for change with the management of non-specific chronic low back pain. *Br J Sports Med*. 2012;46(4):224-227.



3. Kendall NA. Psychosocial approaches to the prevention of chronic pain: the low back paradigm. *Best Pract Res Clin Rheumatol*. 1999;13(3):545–554.
4. van der Windt DA, Kuijpers T, Jellema P, van der Heijden GJ, Bouter LM. Do psychological factors predict outcome in both low-back pain and shoulder pain? *Ann Rheum Dis*. 2007;66(3):313–319.
5. Koes BV, van Tulder M, Lin C-WC, Macedo LG, McAuley J, Maher C. An updated overview of clinical guidelines for the management of non-specific low back pain in primary care. *Eur Spine J*. 2010;19(12):2075–2094.
6. Pincus T, Vogel S, Breen A, Foster N, Underwood M. Persistent back pain—why do physical therapy clinicians continue treatment? A mixed methods study of chiropractors, osteopaths and physiotherapists. *Eur J Pain*. 2006;10(1):67–76.
7. Bishop A, Foster NE. Do physical therapists in the United Kingdom recognize psychosocial factors in patients with acute low back pain? *Spine*. 2005;30(11):1316–1322.
8. Overmeer T, Linton SJ, Boersma K. Do physical therapists recognise established risk factors? Swedish physical therapists' evaluation in comparison to guidelines. *Physiother*. 2004;90(1):35–41.
9. Foster NE, Delitto A. Embedding psychosocial perspectives within clinical management of low back pain: integration of psychosocially informed management principles into physical therapist practice—challenges and opportunities. *Phys Ther*. 2011;91(5):790–803.
10. Ali N, Thomson D. A comparison of the knowledge of chronic pain and its management between final year physiotherapy and medical students. *Eur J Pain*. 2009;13(1):38–50.
11. Burnett A, Sze CC, Tam SM, Yeung KM, Leong M, Wang WT, et al. A cross-cultural study of the back pain beliefs of female undergraduate healthcare students. *Clin J Pain*. 2009;25(1):20–28.
12. Kennedy N, Healy J, O'Sullivan K. The beliefs of third-level healthcare students towards low-back pain. *Pain Res Treat*. 2014;2014.
13. Daykin AR, Richardson B. Physiotherapists' pain beliefs and their influence on the management of patients with chronic low back pain. *Spine*. 2004;29(7):783–795.
14. Overmeer T, Boersma K, Main CJ, Linton SJ. Do physical therapists change their beliefs, attitudes, knowledge, skills and behaviour after a biopsychosocially orientated university course? *J Eval Clin Pract*. 2009;15(4):724–732.
15. O'Sullivan K, O'Sullivan P, O'Sullivan L, Dankaerts W. Back pain beliefs among physiotherapists are more positive after biopsychosocially orientated workshops. *Physiother Pract Res*. 2013;34(1):37–45.
16. Vowles KE, McNeil DW, Gross RT, McDaniel ML, Mouse A, Bates M, et al. Effects of pain acceptance and pain control strategies on physical impairment in individuals with chronic low back pain. *Behav Ther*. 2007;38(4):412–425.
17. Brunner E, De Herdt A, Minguet P, Baldew S-S, Probst M. Can cognitive behavioural therapy based strategies be integrated into physiotherapy for the prevention of chronic low back pain? A systematic review. *Disabil Rehabil*. 2013;35(1):1–10.
18. Zusman M. Cognitive-behavioural components of musculoskeletal physiotherapy: the role of control. *Phys Ther Rev*. 2005;10(2):89–98.
19. Overmeer T, Boersma K, Denison E, Linton SJ. Does teaching physical therapists to deliver a biopsychosocial treatment program result in better patient outcomes? A randomized controlled trial. *Phys Ther*. 2011;91(5):804–819.
20. Gray H, Howe T. Physiotherapists' assessment and management of psychosocial factors (Yellow and Blue Flags) in individuals with back pain. *Phys Ther Rev*. 2013;18(5):379–394.
21. Sandelowski M, Barroso J. *Handbook for synthesizing qualitative research*. New York: Springer Publishing Company; 2007.
22. Richardson B, Lindquist I. Metasynthesis of qualitative inquiry research studies in physiotherapy. *Physiother Res Int*. 2010;15(2):111–117.
23. Tong A, Flemming K, McInnes E, Oliver S, Craig J. Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. *BMC Med Res Methodol*. 2012;12(1):181.
24. Snelgrove S, Edwards S, Lioffi C. A longitudinal study of patients' experiences of chronic low back pain using interpretative phenomenological analysis: Changes and consistencies. *Psychol health*. 2013;28(2):121–138.
25. Billis EV, McCarthy CJ, Stathopoulos I, Kapreli E, Pantzou P, Oldham JA. The clinical and cultural factors in classifying low back pain patients within Greece: a qualitative exploration of Greek health professionals. *J Eval Clin Pract*. 2007;13(3):337–345.
26. Dean SG, Smith JA, Payne S, Weinman J. Managing time: An interpretative phenomenological analysis of patients' and physiotherapists' perceptions of adherence to therapeutic exercise for low back pain. *Disabil Rehabil*. 2005;27(11):625–636.
27. Turner-Stokes L, Turner-Stokes T. The use of standardized outcome measures in rehabilitation centres in the UK. *Clin Rehabil*. 1997;11(4):306–313.
28. Bishop A, Foster NE, Thomas E, Hay EM. How does the self-reported clinical management of patients with low back pain relate to the attitudes and beliefs of health care practitioners? A survey of UK general practitioners and physiotherapists. *Pain*. 2008;135(1):187–195.
29. Bond S, Soundy A. The Influence of Perceptions and Beliefs of Civilian Physiotherapist Working for the Ministry of Defence in their Management of Back Pain: An Exploratory Study using Mixed Methods. *J R Army Med Corps*. 2012;158(1):14–21.
30. Sanders T, Foster NE, Bishop A, Ong BN. Biopsychosocial care and the physiotherapy encounter: physiotherapists' accounts of back pain consultations. *BMC Musculoskelet Disord*. 2013;14(1):65.
31. Côté A-M, Durand M-J, Tousignant M, Poitras S. Physiotherapists and use of low back pain guidelines: a qualitative study of the barriers and facilitators. *J Occup Rehabil*. 2009;19(1):94–105.
32. Jeffrey JE, Foster NE. A qualitative investigation of physical therapists' experiences and feelings of managing patients with nonspecific low back pain. *Phys Ther*. 2012;92(2):266–278.
33. Wynne-Jones G, van der Windt D, Ong BN, Bishop A, Cowen J, Artus M, et al. Perceptions of health professionals towards the management of back pain in the context of work: a qualitative study. *BMC Musculoskelet Disord*. 2014;15(1):210.
34. Josephson I, Bülow P, Hedberg B. Physiotherapists' clinical reasoning about patients with non-specific low back pain, as described by the International Classification of Functioning, Disability and Health. *Disabil Rehabil*. 2011;33(22–23):2217–2228.
35. Slade SC, Molloy E, Keating JL. The dilemma of diagnostic uncertainty when treating people with chronic low back pain: a qualitative study. *Clin Rehabil*. 2012;26(6):558–569.
36. Josephson I, Hedberg B, Bülow P. Problem-solving in physiotherapy-physiotherapists' talk about encounters with patients with non-specific low back pain. *Disabil Rehabil*. 2013;35(8):668–677.
37. Sanders T, Ong BN, Sowden G, Foster N. Implementing change in physiotherapy: professions, contexts and interventions. *J Health Organ Manag*. 2014;28(1):96–114.
38. Main CJ, Foster N, Buchbinder R. How important are back pain beliefs and expectations for satisfactory recovery from back pain? *Best Pract Res Clin Rheumatol*. 2010;24(2):205–217.
39. Bunzli S, Smith A, Watkins. Schütze R, O'Sullivan P. What Do People who score highly on the Tampa Scale of Kinesiophobia really believe? A mixed methods investigation in people with chronic non specific low back pain. *Clin J Pain*. 2015. Accepted for publication.
40. Bunzli S, Watkins R, Smith A, Schütze R, O'Sullivan P. Lives on hold: A qualitative synthesis exploring the experience of chronic low-back pain. *Clin J Pain*. 2013;29(10):907–916.
41. Hill JC, Dunn KM, Lewis M, Mullis R, Main CJ, Foster NE, et al. A primary care back pain screening tool: identifying patient subgroups for initial treatment. *Arthritis Care Res*. 2008;59(5):632–641.
42. Linton SJ, Nicholas M, MacDonald S. Development of a short form of the Örebro Musculoskeletal Pain Screening Questionnaire. *Spine*. 2011;36(22):1891–1895.
43. Hahn SR. Physical Symptoms and Physician-Experienced Difficulty in the Physician Patient Relationship. *Ann Intern Med*. 2001;134(9 Part 2):897–904.
44. Askew R, Kibelstis C, Overbaugh S, Walker S, Nixon-Cave K, Shepard KF. Physical therapists' perception of patients' pain and its affect on management. *Physiother Res Int*. 1998;3(1):37–57.
45. Thomson D. The Experience of "Problem" Patients as Experienced by Senior Physiotherapists in the Context of their Working Lives. *Adv Physiother*. 2000;2(1):2–13.
46. Cohen M, Quintner J, Buchanan D, Nielsen M, Guy L. Stigmatization of patients with chronic pain: The extinction of empathy. *Pain Med*. 2011;12(11):1637–1643.
47. Ferreira PH, Ferreira ML, Maher CG, Refshauge KM, Latimer J, Adams RD. The therapeutic alliance between clinicians and patients predicts outcome in chronic low back pain. *Phys Ther*. 2013;93(4):470–478.
48. Darlow B, Dowell A, Baxter GD, Mathieson F, Perry M, Dean S. The Enduring Impact of What Clinicians Say to People With Low Back Pain. *Ann Fam Med*. 2013;11(6):527–534.
49. Scheermesser M, Bachmann S, Schämanna A, Oesch P, Kool J. A qualitative study on the role of cultural background in patients' perspectives on rehabilitation. *BMC Musculoskelet Disord*. 2012;13(1):5.
50. Toye F, Barker K. 'Could I be imagining this?'—the dialectic struggles of people with persistent unexplained back pain. *Disabil Rehabil*. 2010;32(21):1722–1732.
51. Lærum E, Indahl A, Skouen J. What is "the good back-consultation"? A combined qualitative and quantitative study of chronic low back pain patients' interaction with and perceptions of consultations with specialists. *J Rehabil Med*. 2006;38(4):255–262.
52. Linton SJ, Vlaeyen J, Ostelo R. The back pain beliefs of health care providers: are we fear-avoidant? *J Occup Rehabil*. 2002;12(4):223–232.
53. Buchbinder R, Staples M, Jolley D. Doctors with a special interest in back pain have poorer knowledge about how to treat back pain. *Spine*. 2009;34(11):1218–1226.
54. Houben RM, Vlaeyen JW, Peters M, Ostelo RW, Wolters PM, Stomp-van den Berg SG. Health care providers' attitudes and beliefs towards common low back pain: factor structure and psychometric properties of the HC-PAIRS. *Clin J Pain*. 2004;20(1):37–44.
55. Stevenson K, Lewis M, Hay E. Does physiotherapy management of low back pain change as a result of an evidence-based educational programme? *J Eval Clin Pract*. 2006;12(3):365–375.
56. May C, Finch T. Implementing, embedding, and integrating practices: an outline of normalization process theory. *Sociology*. 2009;43(3):535–554.
57. Kamper SJ, Kongsted A, Haanstra TM, Hestbaek L. Do recovery expectations change over time? *Eur Spine J*. 2014;1–9.
58. Parsons S, Harding G, Breen A, Foster N, Pincus T, Vogel S, et al. The influence of patients' and primary care practitioners' beliefs and expectations about chronic musculoskeletal pain on the process of care: a systematic review of qualitative studies. *Clin J Pain*. 2007;23(1):91–98.
59. Butler DS, Moseley GL. *Explain Pain: (Revised and Updated)*. Adelaide: Noigroup Publications; 2013.