

RESEARCH ARTICLE

The ability of physiotherapists to identify psychosocial factors in patients with musculoskeletal pain: A scoping review

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Abstract

Background: It is not known how well physiotherapists identify psychosocial factors in people with musculoskeletal pain, when using clinical judgement. The purpose of this scoping review was to examine the research related to physiotherapist ability in identifying psychosocial factors and to subsequently identify gaps in the literature to help direct future research.

Data Sources: Searches using relevant key words, were conducted of Medline, Cinahl, the Cochrane Library, PEDro, PubMed, Scopus and Google Scholar. All primary quantitative and qualitative research from the year 2000 onwards, which met the search criteria, were included.

Data Extraction and Synthesis: A data extraction tool was used to tabulate data regarding demographics, study design and key findings of the included papers. The Mixed Methods Appraisals Tool (MMAT) was utilised to help examine the quality of included studies.

Results: Overall, the quality of the included studies was moderate. The total number of studies which met the inclusion criteria was relatively small ($n = 20$). The most common method for determining ability was comparison of physiotherapist estimations with validated screening tools or questionnaires. Physiotherapist estimates of psychosocial factors were poor and in the qualitative research, the lack of clinician confidence in psychosocial assessment was evident.

Conclusion: The available research suggests that physiotherapists lack confidence and ability in identifying psychosocial factors. More rigorous, mixed-methods research is warranted to capture the complexity of the research question.

KEYWORDS

physiotherapy, psychosocial, scoping review, yellow flag

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1 | INTRODUCTION

Musculoskeletal (MSK) pain affects 1 in 4 of the UK population and accounts for up to 30% of all GP consultations (NHS England, 2020). Physiotherapists are well placed, across the patient pathway, to lead the efforts in tackling MSK pain and improve the health of individuals and populations (Rastrick, 2017). In recent years the role of psychosocial factors, as part of the biopsychosocial model, have been recognised for their importance in MSK pain (Artus et al., 2017). Psychosocial factors, such as catastrophising, fear avoidance, low expectations of recovery and kinesiphobia, are known to influence outcomes in MSK conditions (Gray & Howe, 2013).

Given the strong evidence supporting the association between psychosocial factors and the persistence of MSK pain (Gray & Howe, 2013), it is important for physiotherapists to be competent and confident in detecting relevant psychosocial factors and determining how significant the various factors are in each individual patient. Physiotherapists can identify relevant psychosocial factors using clinical judgement through their subjective history questioning, and formal questionnaires or screening tools (Lundberg et al., 2009). In recent years, due to the multi-dimensional nature of MSK pain and the multitude of possible factors relevant to a patient's condition, multi-dimensional screening tools have been developed and validated. Tools such as the STarT Back Screening Tool (Hill et al., 2008), the Optimal Screening for Prediction of Referral and Outcome (OSPRO) tool (Lentz et al., 2016) and the Orebro Musculoskeletal Pain Questionnaire (Linton et al., 2011) have all been validated for use in MSK physiotherapy. However, despite the availability of numerous validated questionnaires and screening tools to detect psychosocial factors (Foster & Delitto, 2011; Lentz et al., 2016), they are often not utilised in clinical practice (Hill et al., 2020), with physiotherapists often relying on clinical judgement and subjective history taking. One recent survey of clinical practice showed that only 37% of physiotherapists used any sort of questionnaire or screening tool (Hill et al., 2020).

To date, there have been no systematic or scoping reviews published, which focus on how well physiotherapists identify psychosocial factors in MSK practice, other than one specifically in low back pain (Gray & Howe, 2013). How this ability to detect psychosocial factors is actually determined in research studies and how valid that judgement is, will be explored in this scoping review.

The objectives of this scoping review are therefore to:

1. Examine the evidence related to the physiotherapist assessment of psychosocial factors.
2. Explore the key characteristics and methodological quality of the research.
3. Identify gaps in the literature to help direct future research.

2 | DESIGN AND METHODOLOGY

To aid in the completion of this scoping review, the scoping review guidance by the Joanna Briggs Institute (Peters et al., 2020) were

used to help provide clarity and rigour to the conduct of this review. The PRISMA-ScR checklist was used when reporting results in the scoping review to ensure a transparent and methodological approach is taken (Tricco et al., 2018).

When formulating a research question for a scoping review, the Joanna Briggs Institute (JBI) recommend that the 'Population-Concept-Context' (PCC) framework is applied (Peters et al., 2020). Therefore, the research question in this scoping review was: 'How well do physiotherapists detect psychosocial factors in patients with MSK pain?'

2.1 | Inclusion criteria

2.1.1 | Population

- Patients with MSK pain.

2.1.2 | Concept

- Ability of physiotherapists and/or confidence, to identify psychosocial factors (including comparison with validated questionnaire/screening tool, researcher judgement or feedback from physiotherapists themselves).

2.1.3 | Context

- Any MSK setting
- Any publication type, except reviews
- Any country/health service
- Qualified or student physiotherapists
- Published in English language

2.2 | Search strategy

A three-step search strategy was utilised in this review, as recommended by JBI (Peters et al., 2020). An initial limited search of MEDLINE (Ovid) was undertaken before an analysis was made of the text words contained in the title and abstract, as well as index terms used to describe the article. Initial keywords used were: [physiotherap* OR physical therap*] AND [psychosocial OR yellow flag] AND [assess* OR detect* OR identif*]. As the second step, a search using all identified keywords and index terms was then completed on all included databases. Thirdly, the reference lists of all identified articles were searched for additional studies. Studies from the year 2000 to the present day were considered for inclusion in this review, to reflect the fact that the key concept of this review is affected by evidence-based developments in education curricula and clinical practice. Only studies in English were considered for inclusion in this review. The databases searched were:

MEDLINE via Ovid, CINAHL via EBSCO, the Cochrane Library, PEDro, PubMed and Scopus. The search engine Google Scholar was also utilised.

2.2.1 | Types of sources

This review considered both quantitative and qualitative research approaches. Narratives, clinical commentaries, comments, editorials, book chapters, systematic reviews and scoping reviews were not included.

2.3 | Data extraction and synthesis

Inclusion of papers in the review was determined by the author of the scoping review. The following information was recorded and formed the categories for the results table:

1. Author(s)
2. Year of publication
3. Country of origin
4. Number/type of participants
5. Study type
6. Method for determining 'ability' or 'confidence'
7. Key findings

2.4 | Critical appraisal

As well as examining the evidence, the quality of the research was appraised using the Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2018). Despite over 500 quality assessment tools being available to researchers, there is still no consensus on which to use for quantitative, qualitative or mixed-method studies (Pluye & Hong, 2014). Nevertheless, the MMAT allows for an efficient quality appraisal of multiple study methodologies and has also been recommended for both its content validation and its accompanying tutorial (Pluye & Hong, 2014).

3 | RESULTS

3.1 | Selection of sources of evidence

The database search retrieved 4018 studies, which were exported to a reference software manager. After 1154 duplicates were removed, 2864 titles and abstracts were screened for eligibility. Titles and abstracts were screened for their relevance to psychosocial assessment in physiotherapy, and specifically the criteria outlined in Section 2.1. As a result of this screening process, a further 2834 studies

were excluded. The remaining 30 studies were selected for full text reading, of which 20 studies met the inclusion criteria. The reference lists of these 20 studies were searched but no further relevant studies were found, which met the inclusion criteria. The study search flowchart, adapted from Moher et al. (2009), is depicted in Figure 1. Also, an example of search results for each search term are given in Appendix B, as taken from the CINAHL database. Appendix C shows the reasons for excluding 10 full texts.

3.2 | Study results

The results from the included studies have been extracted and charted in Table 1. Additionally, Table 2 shows the quality assessment which was undertaken on each study, using the MMAT. Appendix A shows the full criteria applied when utilising the MMAT.

3.3 | Characteristics of included studies

Twenty studies met the inclusion criteria for this scoping review and are charted in Table 1. Of these 20 studies, there were:

- nine observational cross-sectional studies (Beales et al., 2016; Brunner et al., 2018; Calley et al., 2010; Demmelmaier et al., 2010; Haggman et al., 2004; Hill et al., 2010; Miki et al., 2020; Oostendorp et al., 2015; Wassinger & Sole, 2021)
- four qualitative studies (Emilson et al., 2016; Singla et al., 2015; Teo et al., 2020; Zangoni & Thomson, 2017)
- 4 survey-based studies, of which 3 were quantitative (Bishop & Foster, 2005; Man et al., 2019; Parker, 2007) and 1 was qualitative (Driver et al., 2021)
- 1 randomised controlled trial (RCT) (Overmeer et al., 2009)
- one quasi-randomised study (Demmelmaier et al., 2012)
- 1 retrospective notes audit (Cooney et al., 2011)

Six of the studies were conducted in Australia, four in Sweden, three in the UK, and one each in Italy, Japan, Switzerland, Ireland, USA and the Netherlands.

3.4 | Sample size and participant characteristics

Within the 9 observation cross-sectional studies, the participant numbers totalled 666 patients; ranged between 12 (Hill et al., 2010) and 232 (Haggman et al., 2004) patients and physiotherapists; ranged between 3 (Hill et al., 2010) and 68 physiotherapists (Haggman et al., 2004). Only one observational cross-sectional study included student physiotherapists (Brunner et al., 2018) with the rest of the studies including only qualified physiotherapists. Where patients were involved (as well as physiotherapists) 2 studies included general

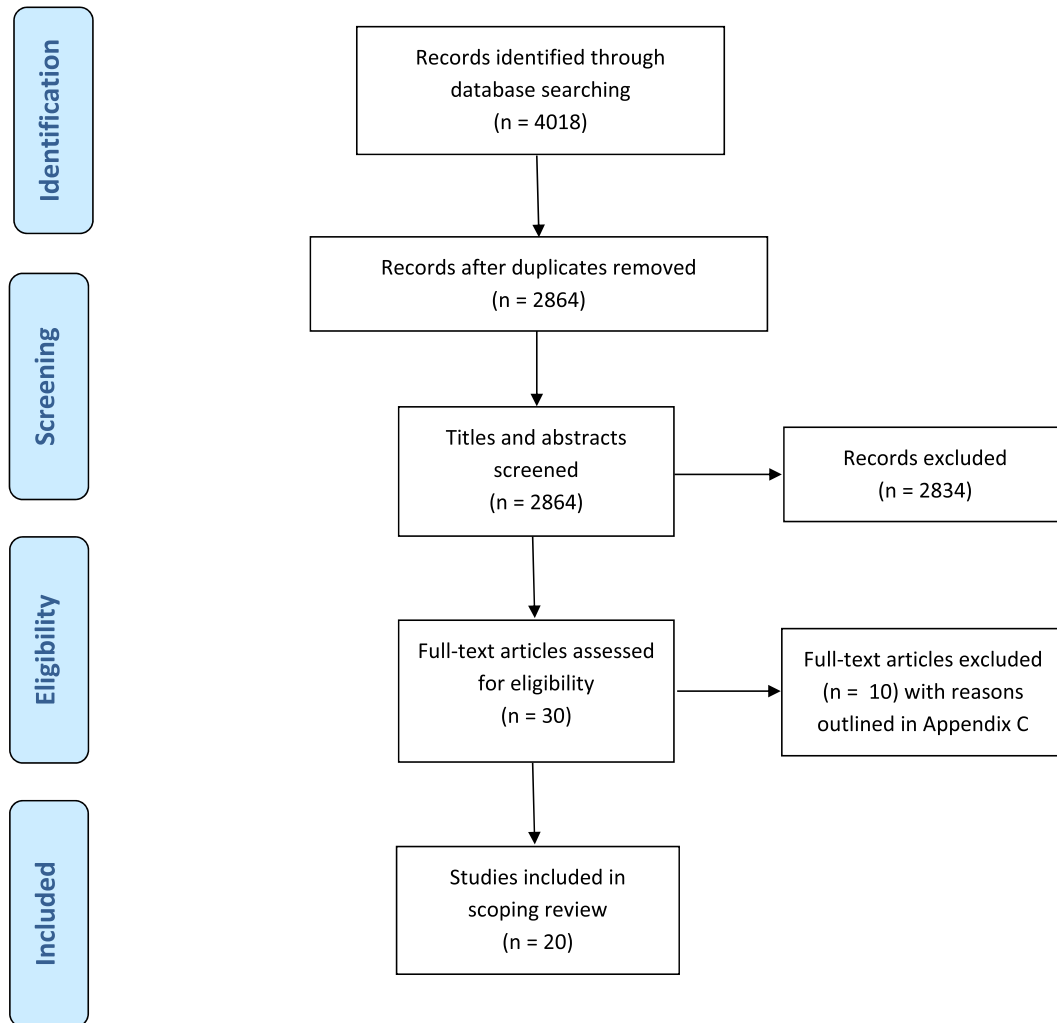


FIGURE 1 Study search flowchart, adapted from Moher et al. (2009)

MSK patients (Beales et al., 2016; Wassinger & Sole, 2021), one study included both neck and low back pain (LBP) patients (Oostendorp et al., 2015) whilst the remaining six observational cross-sectional studies included exclusively LBP patients.

Of the four qualitative studies, 2 concerned physiotherapists and their psychosocial assessment in general MSK patients (Emilson et al., 2016; Singla et al., 2015). One of the qualitative studies was related to LBP patient care specifically (Zangoni & Thomson, 2017) and 1 was related to patients with knee osteoarthritis (Teo et al., 2020). The total number of physiotherapists included across the 4 qualitative studies was 51.

Within the 4 different survey studies, the number of participating physiotherapists totalled 857 and ranged between 15 (Parker, 2007) and 453 (Bishop & Foster, 2005). Of these 4 survey studies, one was conducted on student physiotherapists (Parker, 2007) with the other 3 surveying qualified MSK physiotherapists.

The RCT (Overmeer et al., 2009) was conducted on 42 Swedish physiotherapists and the quasi-randomised study (Demmelmaier

et al., 2012) included 4 physiotherapists and 29 LBP patients. The retrospective notes audit was conducted on 23 paediatric MSK patients and 3 physiotherapists (Cooney et al., 2011).

3.5 | Quality of included studies

Table 2 shows the MMAT scoring which was completed on each of the 20 included studies. Overall the MMAT scores were moderate to high and the summary of results is below:

- 2 studies scored 20% (Demmelmaier et al., 2012; Overmeer et al., 2009)
- 1 study scored 40% (Parker, 2007)
- 3 studies scored 60% (Cooney et al., 2011; Demmelmaier et al., 2010; Man et al., 2019)
- 5 studies scored 80% (Beales et al., 2016; Driver et al., 2021; Haggman et al., 2004; Miki et al., 2020; Oostendorp et al., 2015)

TABLE 1 Summary of included articles

Author and year of publication	Country of origin	Number and type of participants	Study type	Method for determining 'ability' or 'confidence'	Key findings
Overmeer et al. (2009)	Sweden	42 physiotherapists	Randomised controlled trial (RCT)	Number of psychosocial factors identified	Poor baseline identification of psychosocial factors.oor basel
Demmelmaier et al. (2012)	Sweden	4 physiotherapists + 29 LBP patients	Quasi-experimental single subject studies	Number of psychosocial factors identified.	Poor baseline identification of psychosocial factors.
Miki et al. (2020)	Japan	78 adults with chronic LBP + 21 qualified physiotherapists	Observational, cross-sectional study, therapist completed a mirrored version of each questionnaire based on their judgements.	Comparison with validated outcome measure/ screening tool.	Correlation between therapist estimations and patient-reported scores was low.
Brunner et al. (2018)	Switzerland	49 adults with chronic LBP + 20 physiotherapists	Observational, cross-sectional study	Comparison with validated outcome measure/ screening tool	Correlation between therapist estimations and patient-reported scores were low to moderate.
Beales et al. (2016)	Australia	90 adults with MSK pain + 19 qualified physiotherapists	Observational, cross-sectional study	Comparison with validated outcome measure/ screening tool	Correlation between therapist estimations and patient-reported scores were low to moderate.
Hill et al. (2010)	UK	12 LBP patients + 3 GPs, 3 pain management specialists and 3 MSK physiotherapists	Observational, cross-sectional study	Comparison with validated outcome measure/ screening tool	Agreement between therapist estimations and patient-reported scores was fair.
Wassinger and Sole (2021)	USA	15 physiotherapists	Observational, cross-sectional study	Comparison with validated outcome measure/ screening tool	Agreement between therapist estimations and patient-reported scores was minimal.
Haggman et al. (2004)	Australia	232 adults with low back pain + 68 qualified physiotherapists	Observational, cross-sectional study	Comparison with validated outcome measure/ screening tool	Physiotherapist estimates significantly less accurate at identifying psychosocial factors, compared with reference standard.
Parker (2007)	UK	15 third year undergraduate physiotherapy students	Cross-sectional. Survey	Comparison with validated outcome measure/ screening tool	The students poorly interpreted psychosocial factors.
Cooney et al. (2011)	Ireland	23 paediatric (9–16-year olds) MSK patients + 3 senior physiotherapists	Retrospective notes audit	Number of psychosocial factors identified	Authors adjudged that "on many occasions" psychosocial factors were missed.

(Continues)

TABLE 1 (Continued)

Author and year of publication	Country of origin	Number and type of participants	Study type	Method for determining 'ability' or 'confidence'	Key findings
Calley et al. (2010)	USA	80 adults with LBP + 8 qualified physiotherapists	Observational, cross-sectional study	Comparison with validated outcome measure/ screening tool	Correlations between patient and therapist scores were low.
Man et al. (2019)	Australia	181 physiotherapists	Cross-sectional. Survey	Physiotherapist feedback	75% felt they were confident in judging the relevance of psychosocial factors.
Bishop and Foster (2005)	UK	518 physiotherapists	Cross-sectional. Survey	Comparison with validated outcome measure/ screening tool	The participants judged the number of psychosocial factors and the risk of chronicity correctly between 25% and 89% of the time.
Demmelmaier et al. (2010)	Sweden	5 physiotherapists + 17 LBP patients	Observational, cross-sectional	Judgement of the researchers	Psychosocial factors were judged, either to not be adequately assessed for at all, or in just 6%–12% of the recordings.
Oostendorp et al. (2015)	Netherlands	21 physiotherapists + 108 LBP/neck pain patients	Observational, cross-sectional	Judgement of the researchers	Psychosocial factors were "inadequately covered" by the therapists overall.
Singla et al. (2015)	Australia	9 physiotherapists	Qualitative descriptive	Physiotherapist feedback	Participants did not feel able to identify relevant psychosocial factors.
Zangoni and Thomson (2017)	Italy	8 physiotherapists	Qualitative, grounded theory	Physiotherapist feedback	Participants felt training was required to help them better identify and assess for, psychosocial factors.
Driver et al. (2021)	Australia	208 physiotherapists	Qualitative, survey	Physiotherapist feedback	Participants felt they needed to improve their assessment of psychosocial factors.
Emilson et al. (2016)	Sweden	12 physiotherapists	Qualitative, video observation	Judgement of the researchers	Two thirds of physiotherapists were judged to have identified psychosocial factors, but only 8% assessed them in suitable depth.
Teo et al. (2020)	Australia	22 physiotherapists	Qualitative, descriptive	Physiotherapist feedback	Physiotherapists paid little consideration to psychosocial factors that may be relevant.

- 9 studies scored 100% (Bishop & Foster, 2005; Brunner et al., 2018; Calley et al., 2010; Emilson et al., 2016; Hill et al., 2010; Singla et al., 2015; Teo et al., 2020; Wassinger & Sole, 2021; Zangoni & Thomson, 2017)

Although the MMAT is useful as a generic tool to assess the quality of different studies and provide a score, it is not a substitute for individual and study-specific critical appraisal.

3.6 | Measures used to determine ability in detecting psychosocial factors

A summary of the methods used to determine physiotherapist ability in psychosocial factor identification is shown below:

- Comparison with validated outcome measure/s or screening tool: 9 studies (Beales et al., 2016; Bishop & Foster, 2005; Brunner

TABLE 2 Quality assessment using MMAT (Full headings for each section in Appendix A)

Study	Qualitative			Quantitative RCT					Quantitative non-randomised					Quantitative descriptive					Overall score ^a	Comments		
	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	2.5	3.1	3.2	3.3	3.4	3.5	4.1	4.2	4.3			4.4	4.5
Singla et al. (2015)	✓	✓	✓	✓	✓																100%	Clear description of data collection, with piloting of interview conducted. Appropriate and well described data analysis Provided quotes support the themes described in the results
Zangoni and Thomson (2017)	✓	✓	✓	✓	✓																100%	Clear description of data collection Appropriate and well described data analysis 6 of the 8 participants had less than 5 years' experience, four of them worked together and two were known to the researcher. The external validity is therefore potentially impacted
Driver et al. (2021)	X	✓	✓	✓	✓																80%	High sample size (208), but the aims were to gain a deeper understanding of therapist psychosocial strategies and the survey design with only four questions meant data gained was relatively superficial Appropriate and well described data analysis
Emilson et al. (2016)	✓	✓	✓	✓	✓																100%	Clear description of data collection. Video analysis plus interviews appropriate for the aims of the research Appropriate and well described data analysis Provided quotes support the themes described in the results
Teo et al. (2020)	✓	✓	✓	✓	✓																100%	Clear description of data collection and participant characteristics Appropriate and well described data analysis Provided quotes support the themes described in the results
Overmeer et al. (2009)						X	X	X	X	✓											20%	No detail on randomisation process Appears to be big differences in groups at baseline (i.e., 35% in one group worked in private clinic and 60% in other group worked in private clinic) 82% response rate for questionnaires
Demmelmaier et al. (2012)						X	X	X	X	✓	X	X	X	✓	X						20%	Sample of only 4 physiotherapists (3 female and 3 over 10 years' experience) Intervention delivered by first and last author. Only two of the participants attended all training sessions. Data not gathered for all participants equally or at the same time points

(Continues)

TABLE 2 (Continued)

Study	Qualitative		Quantitative RCT					Quantitative non-randomised					Quantitative descriptive					Overall score ^a	Comments			
	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	2.5	3.1	3.2	3.3	3.4	3.5	4.1	4.2			4.3	4.4	4.5
Miki et al. (2020)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	80%	No explanation about target population and therefore sample of inpatient LBP patients is not necessarily appropriate Appropriate outcome measures and data analysis
Brunner et al. (2018)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%	Appropriate sample, outcome measures and analysis
Beales et al. (2016)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	80%	Appropriate sample and data analysis Orebro screening tool used, which authors acknowledge has been validated for spinal conditions, not necessarily for all MSK conditions as in this study
Hill et al. (2010)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%	Appropriate sample and sampling strategy Suitable outcome measures and analysis
Haggman et al. (2004)	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	80%	Physiotherapists were asked to invite their own patients to participate in the study Appropriate outcome measure and data analysis
Parker (2007)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	40%	65% non-response to the survey All participants were female students Minimal data analysis other than totals and median values
Cooney et al. (2011)	X	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	60%	Very small sample (23) and 74% female patients. Justified outcome measures (of yellow flags)
Calley et al. (2010)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%	Appropriate sample and sampling strategy Suitable outcome measures and analysis
Man et al. (2019)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	X	✓	60%	20% response rate to survey 60% of respondents had over 20 years of experience and post-graduate training
Bishop and Foster (2005)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%	57.5% response rate to survey Appropriate sample of therapists

TABLE 2 (Continued)

Study	Qualitative		Quantitative RCT					Quantitative non-randomised					Quantitative descriptive					Overall score ^a	Comments			
	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	2.5	3.1	3.2	3.3	3.4	3.5	4.1	4.2			4.3	4.4	4.5
Demmelmaier et al. (2010)																✓	X	X	✓	✓	60%	No detail on target population Measurements do not necessarily align with the aims of understanding the nature, content, and extent of psychosocial factor identification.
Oostendorp et al. (2015)																X	✓	✓	✓	✓	80%	No detail or justification provided on sampling strategy
Wassinger and Sole (2021)																✓	✓	✓	✓	✓	100%	Appropriate sample, outcome measures and analysis

^a% of quality criteria met.

- et al., 2018; Calley et al., 2010; Haggman et al., 2004; Hill et al., 2010; Miki et al., 2020; Parker, 2007; Wassinger & Sole, 2021)
- Physiotherapist feedback: 5 studies (Driver et al., 2021; Man et al., 2019; Singla et al., 2015; Teo et al., 2020; Zangoni & Thomson, 2017)
 - Judgement of the researchers: 4 studies (Cooney et al., 2011; Demmelmaier et al., 2010; Emilson et al., 2016; Oostendorp et al., 2015)
 - Number of psychosocial factors identified: 2 studies (Demmelmaier et al., 2012; Overmeer et al., 2009)

3.7 | Key findings

3.7.1 | Physiotherapist ability to identify psychosocial factors

The findings are summarised for each included study in Table 1. Overall, all of the studies, where ability was the focus of their study, found that physiotherapists are poor at identifying psychosocial factors. Whether the researchers compared physiotherapist estimates of psychosocial factors with a single patient-reported questionnaire, a battery of questionnaires or a multi-dimensional questionnaire, the correlation or agreement levels were almost exclusively poor. The only factor in any of the studies which had a moderate level of correlation ($r = 0.602$) between patient-reported score and physiotherapist estimate was 'distress' (Brunner et al., 2018).

Where ability was judged by a researcher, the consensus was again that physiotherapists inadequately identify psychosocial factors. These particular studies (Cooney et al., 2011; Demmelmaier et al., 2010; Emilson et al., 2016; Oostendorp et al., 2015) have a common strength in that they were direct observations of real clinical practice. Similarly, where counting the number of psychosocial factors identified was the outcome measure (Demmelmaier et al., 2012; Overmeer et al., 2009), the findings again demonstrate a lack of physiotherapist ability.

Though methodologies differ between these studies, the consensus is that physiotherapists are poor at identifying psychosocial factors in MSK patients. This finding was consistent, regardless of where in the world the study was conducted or if it was in private or public healthcare. All except one RCT (Overmeer et al., 2009) failed to blind participating physiotherapists, which potentially introduces performance bias and reduces the validity of the findings.

3.7.2 | Physiotherapist confidence in identifying psychosocial factors

Surveys and interviews were utilised to better understand how confident physiotherapists feel in identifying psychosocial factors, and the majority found this, as with ability, was poor. Whilst the studies which conducted interviews may lack generalisability to other

countries' health systems, as they were conducted in Italy (Zangoni & Thomson, 2017) and Australia (Singla et al., 2015; Teo et al., 2020), the findings accord in demonstrating physiotherapists' lack of confidence in knowledge of psychosocial factors or how to identify them in practice. These findings were echoed by an Australian survey-based study (Driver et al., 2021).

One anomaly, in terms of studies focussing on physiotherapist confidence or ability in psychosocial assessment, was a survey-based study by Man et al. (2019). Their survey found that the majority of respondents routinely assess psychosocial factors (74%) and were confident in judging the relevance of psychosocial factors in clinical practice (75%). This is the only study included in this scoping review which had such a finding. This may be influenced by the fact that the respondents all worked in private practice and 59% of the sample had over 20 years' experience and 58% had a masters or PhD qualification. Thus, their sample may not be particularly representative of the wider MSK physiotherapy workforce.

4 | DISCUSSION

4.1 | Summary

The aims of this scoping review were to map and examine the current evidence relating to physiotherapist ability in psychosocial assessments in MSK patients, explore the different study characteristics and identify areas for future research. To date, this scoping review represents the only review of such studies. In terms of ability, there was complete agreement between the studies, in finding that physiotherapists inadequately identify psychosocial factors. This was finding did not differ depending on study location or participant experience level.

In terms of confidence in psychosocial assessment, all but one of the studies included also found physiotherapists to be lacking. There was a lack of longitudinal research, so it is not possible to say whether physiotherapist estimates improve after multiple patient contacts. However, both qualitative and quantitative research was generally of high quality.

4.2 | Implications for future research

For a concept which is as nuanced as the one in this scoping review; namely, the ability of physiotherapists to identify psychosocial factors, it is likely that both quantitative and qualitative methods are valid and both potentially have their advantages and disadvantages. By comparing physiotherapist practice to either a questionnaire, screening tool or the judgement of a researcher, the risk is that the concept is reduced to quantitative values and misses the depth provided by qualitative research, which potentially provides a richer understanding of the problem. Qualitative studies, such as those included in this scoping review, potentially fail to capture real-life practice and behaviours, and are particularly at risk of social

desirability and selection bias. A mixed-methods approach, combining a quantitative comparison between physiotherapist estimates and valid screening questionnaires, along with qualitative analysis of challenges and barriers to psychosocial assessment, is warranted.

Although there are studies which have already compared physiotherapist intuition with a validated questionnaire, future studies with blinding of participating physiotherapists would improve the validity and reliability of any findings. Additionally, more longitudinal research would help to establish whether physiotherapist estimates improve after multiple contacts with patients.

4.3 | Strengths and limitations

Generally, a scoping review is broad in scope and does not include critical appraisal, in contrast to a systematic review (Tricco et al., 2018). Thus, the fact this scoping review only included 20 studies is potentially a weakness. This may be a reflection of the fact that the context of the research question was relatively narrow, compared to the more typical, broad scoping review question. However, as one of the objectives of this review was to examine the quality of available evidence, a narrower scope allowed for an appraisal of the evidence to be made using the MMAT (Hong et al., 2018). The initial knowledge gap in the literature specifically concerned the ability of physiotherapists to identify or assess for, psychosocial factors in patients with MSK pain, hence the narrower scope of this review.

Another limitation of this scoping review was the use of a single reviewer (the author) throughout the scoping review process. This limitation potentially impacts on the validity and reliability of the scoping review. However, this scoping review was reported in accordance with the PRISMA-ScR guidance which is recommended to increase the transparency and rigour of the scoping review (Peters et al., 2020).

5 | CONCLUSION

As MSK conditions account for such a significant proportion of all health spending (NHS England, 2020), physiotherapists will play an increasing prominent role in combating such issues, which affect disability, quality of life and time in work. This scoping review aimed to examine the evidence concerned with how well physiotherapists assess for and identify psychosocial factors in patients with MSK pain. Overall, there was a paucity of high-quality evidence. Whilst overall sample sizes were low and the total evidence base was modest, there was almost a total consensus that physiotherapists lacked confidence and ability in the identification of psychosocial factors. The difficulty in defining 'ability' for the purposes of the context of this review have been discussed. The final objective of this scoping review was to identify areas for future research. More rigorous research with participating physiotherapists blinded to the aims of the research, ideally mixed-methods to capture the

complexity and nuances of the research question, is warranted. If future high-quality research concurs with the current evidence and the conclusion that physiotherapist estimates are inadequate, then further research needs to establish the best strategies for improving physiotherapists' psychosocial assessment skills and/or adherence to screening tools and questionnaires.

AUTHOR CONTRIBUTIONS

All the authors contributed to conceptualising, designing, conducting, and reviewing the manuscript.

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CONFLICT OF INTEREST

The authors have no conflicts of interest to declare, they received no funding, and they all agreed to submit this manuscript to Musculoskeletal Care Journal. The corresponding author has full access to the data included in the manuscript and guarantees for their integrity and accuracy.

DATA AVAILABILITY STATEMENT

The authors confirm that the data supporting the findings of this study are available within the article.

ETHICS STATEMENT

Secondary research so ethical approval not required.

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REFERENCES

- Artus, M., Campbell, P., Mallen, C. D., Dunn, K. M., & van der Windt, D. A. W. (2017). Generic prognostic factors for musculoskeletal pain in primary care: A systematic review. *BMJ Open*, *7*(1), e012901. <https://doi.org/10.1136/bmjopen-2016-012901>
- Arvinen-Barrow, M., Hemmings, B., Weigand, D., Becker, C., & Booth, L. (2007). Views of chartered physiotherapists on the psychological content of their practice: A follow-up survey in the UK. *Journal of Sport Rehabilitation*, *16*(2), 111–121. <https://doi.org/10.1123/jsr.16.2.111>
- Beales, D., Kendell, M., Chang, R. P., Håmsø, M., Gregory, L., Richardson, K., & O'Sullivan, P. (2016). Association between the 10 item Örebro Musculoskeletal Pain Screening Questionnaire and physiotherapists' perception of the contribution of biopsychosocial factors in patients with musculoskeletal pain. *Manual Therapy*, *23*, 48–55. <https://doi.org/10.1016/j.math.2016.03.010>
- Bishop, A., & Foster, N. E. (2005). Do physical therapists in the United Kingdom recognize psychosocial factors in patients with acute low back pain? *Spine*, *30*(11), 1316–1322. <https://doi.org/10.1097/O1.brs.0000163883.65321.33>
- Brunner, E., Dankaerts, W., Meichtry, A., O'Sullivan, K., & Probst, M. (2018). Physical therapists' ability to identify psychological factors and their self-reported competence to manage chronic low back pain. *Physical Therapy*, *98*(6), 471–479. <https://doi.org/10.1093/ptj/pzy012>
- Calley, D. Q., Jackson, S., Collins, H., & George, S. Z. (2010). Identifying patient fear-avoidance beliefs by physical therapists managing patients with low back pain. *Journal of Orthopaedic & Sports Physical Therapy*, *40*(12), 774–783. <https://doi.org/10.2519/jospt.2010.3381>
- Cook, C. E., Moore, T. J., Learman, K., Showalter, C., & Snodgrass, S. J. (2015). Can experienced physiotherapists identify which patients are likely to succeed with physical therapy treatment? *Archives of Physiotherapy*, *5*(1), 1–9. <https://doi.org/10.1186/s40945-015-0003-z>
- Cooney, C., Harrington, S., & Quinn, J. (2011). Paediatric yellow flags and early identification of psychosocial factors in paediatric patients with unexplained musculoskeletal disorders. *Physiotherapy Practice and Research*, *32*(1), 19–23. <https://doi.org/10.3233/ppr-2011-32104>
- Dagfinrud, H., Storheim, K., Magnussen, L. H., Ødegaard, T., Hoftaniska, I., Larsen, L. G., Ringstad, P. O., Hatlebrekke, F., & Grotle, M. (2013). The predictive validity of the Örebro Musculoskeletal Pain Questionnaire and the clinicians' prognostic assessment following manual therapy treatment of patients with LBP and neck pain. *Manual Therapy*, *18*(2), 124–129. <https://doi.org/10.1016/j.math.2012.08.002>
- Demmelmaier, I., Denison, E., Lindberg, P., & Åsenlöf, P. (2010). Physiotherapists' telephone consultations regarding back pain: A method to analyze screening of risk factors. *Physiotherapy Theory and Practice*, *26*(7), 468–475. <https://doi.org/10.3109/09593980903433938>
- Demmelmaier, I., Denison, E., Lindberg, P., & Åsenlöf, P. (2012). Tailored skills training for practitioners to enhance assessment of prognostic factors for persistent and disabling back pain: Four quasi-experimental single-subject studies. *Physiotherapy Theory and Practice*, *28*(5), 359–372. <https://doi.org/10.3109/09593985.2011.629022>
- Driver, C., Lovell, G. P., & Opreescu, F. (2021). Psychosocial strategies for physiotherapy: A qualitative examination of physiotherapists' reported training preferences. *Nursing and Health Sciences*, *23*(1), 136–147. <https://doi.org/10.1111/nhs.12771>
- Driver, C., Opreescu, F., & Lovell, G. P. (2019). Exploring physiotherapists' considerations regarding the use of psychosocial strategies in practice. *Physiotherapy Research International*, *24*(4), e1783. <https://doi.org/10.1002/pri.1783>
- Emilson, C., Åsenlöf, P., Pettersson, S., Bergman, S., Sandborgh, M., Martin, C., & Demmelmaier, I. (2016). Physical therapists' assessments, analyses and use of behavior change techniques in initial consultations on musculoskeletal pain: Direct observations in primary health care. *BMC Musculoskeletal Disorders*, *17*(1), 1–14. <https://doi.org/10.1186/s12891-016-1173-x>
- Foster, N. E., & Delitto, A. (2011). Embedding psychosocial perspectives within clinical management of low back pain: Integration of psychosocially informed management principles into physical therapist practice—Challenges and opportunities. *Physical Therapy*, *91*(5), 790–803. <https://doi.org/10.2522/ptj.20100326>
- Gray, H., & Howe, T. (2013). Physiotherapists' assessment and management of psychosocial factors (Yellow and Blue Flags) in individuals with back pain. *Physical Therapy Reviews*, *18*(5), 379–394. <https://doi.org/10.1179/1743288x13y.0000000096>
- Haggman, S., Maher, C. G., & Refshauge, K. M. (2004). Screening for symptoms of depression by physical therapists managing low back pain. *Physical Therapy*, *84*(12), 1157–1166. <https://doi.org/10.1093/ptj/84.12.1157>
- Hemmings, B., & Povey, L. (2002). Views of chartered physiotherapists on the psychological content of their practice: A preliminary study in the United Kingdom. *British Journal of Sports Medicine*, *36*(1), 61–64. <https://doi.org/10.1136/bjism.36.1.61>
- Hill, J., Bedford, J., Houston, D., D Reid, A., Baxter, G. D., & Ellis, R. (2020). Exploring physiotherapists' use of clinical practice guidelines, screening, and stratification tools for people with low back pain in

- New Zealand. *New Zealand Journal of Physiotherapy*, 48(2), 59–69. <https://doi.org/10.15619/nzjp/48.2.02>
- Hill, J. C., Dunn, K. M., Lewis, M., Mullis, R., Main, C. J., Foster, N. E., & Hay, E. M. (2008). A primary care back pain screening tool: Identifying patient subgroups for initial treatment. *Arthritis Care & Research: Official Journal of the American College of Rheumatology*, 59(5), 632–641. <https://doi.org/10.1002/art.23563>
- Hill, J. C., Vohora, K., Dunn, K. M., Main, C. J., & Hay, E. M. (2010). Comparing the STarT back screening tool's subgroup allocation of individual patients with that of independent clinical experts. *The Clinical Journal of Pain*, 26(9), 783–787. <https://doi.org/10.1097/ajp.0b013e3181f18aac>
- Hong, Q. N., Pluye, P., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M.-P., Griffiths, F., Nicolau, B., O' Cathain, A., Rousseau, M.-C., & Vedel, I. (2018). Mixed methods appraisal tool (MMAT). Retrieved August 21, 2022, from http://mixedmethodsappraisaltoolpublic.pbworks.com/w/file/attach/127916259/MMAT_2018_criteria-manual_2018-08-01_ENG.pdf
- Kelly, J., Ritchie, C., & Sterling, M. (2019). Agreement is very low between a clinical prediction rule and physiotherapist assessment for classifying the risk of poor recovery of individuals with acute whiplash injury. *Musculoskeletal Science and Practice*, 39, 73–79. <https://doi.org/10.1016/j.msksp.2018.11.003>
- Kent, P. M., Keating, J. L., & Taylor, N. F. (2009). Primary care clinicians use variable methods to assess acute nonspecific low back pain and usually focus on impairments. *Manual Therapy*, 14(1), 88–100. <https://doi.org/10.1016/j.math.2007.12.006>
- Lentz, T. A., Beneciuk, J. M., Bialosky, J. E., Zeppieri, G., Jr., Dai, Y., Wu, S. S., & George, S. Z. (2016). Development of a yellow flag assessment tool for orthopaedic physical therapists: Results from the optimal screening for prediction of referral and outcome (OSPRO) cohort. *Journal of Orthopaedic & Sports Physical Therapy*, 46(5), 327–343. <https://doi.org/10.2519/jospt.2016.6487>
- Linton, S. J., Nicholas, M., & MacDonald, S. (2011). Development of a short form of the Örebro musculoskeletal pain screening questionnaire. *Spine*, 36(22), 1891–1895. <https://doi.org/10.1097/brs.0b013e3181f8f775>
- Lundberg, M., Jorma, S., & Carlsson, S. (2009). A psychometric evaluation of the Swedish version of the Tampa Scale for Kinesiophobia (TSK) from a physiotherapeutic perspective. *Physiotherapy Theory and Practice*, 20(2), 121–133. <https://doi.org/10.1080/09593980490453002>
- Man, I., Kumar, S., Jones, M., & Edwards, I. (2019). An exploration of psychosocial practice within private practice musculoskeletal physiotherapy: A cross-sectional survey. *Musculoskeletal Science and Practice*, 43, 58–63. <https://doi.org/10.1016/j.msksp.2019.06.004>
- Miki, T., Kondo, Y., Takebayashi, T., & Takasaki, H. (2020). Difference between physical therapist estimation and psychological patient-reported outcome measures in patients with low back pain. *PLoS One*, 15(1), e0227999. <https://doi.org/10.1371/journal.pone.0227999>
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & Group, P. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLoS Medicine*, 6(7), e1000097. <https://doi.org/10.1371/journal.pmed.1000097>
- NHS England. (2020). NHS England » musculoskeletal conditions. <https://www.england.nhs.uk/ourwork/clinical-policy/ltc/our-work-on-long-term-conditions/musculoskeletal/>
- Oostendorp, R. A., Elvers, H., Mikołajewska, E., Laekeman, M., van Trijffel, E., Samwel, H., & Duquet, W. (2015). Manual physical therapists' use of biopsychosocial history taking in the management of patients with back or neck pain in clinical practice. *The Scientific World Journal*, 2015, 1–8. <https://doi.org/10.1155/2015/170463>
- Overmeer, T., Boersma, K., Main, C. J., & Linton, S. J. (2009). Do physical therapists change their beliefs, attitudes, knowledge, skills and behaviour after a biopsychosocially orientated University course? *Journal of Evaluation in Clinical Practice*, 15(4), 724–732. <https://doi.org/10.1111/j.1365-2753.2008.01089.x>
- Overmeer, T., Linton, S. J., & Boersma, K. (2004). Do physical therapists recognise established risk factors? Swedish physical therapists' evaluation in comparison to guidelines. *Physiotherapy*, 90(1), 35–41. [https://doi.org/10.1016/s0031-9406\(03\)00002-6](https://doi.org/10.1016/s0031-9406(03)00002-6)
- Parker, R. (2007). Physiotherapy students' assessment of psychological yellow flags in low back pain. *South African Journal of Physiotherapy*, 63(1), 3. <https://doi.org/10.4102/sajp.v63i1.114>
- Peters, M., Godfrey, C., Mclnerney, P., Munn, Z., Tricco, A., & Khalil, H. (2020). Chapter 11: Scoping reviews—JBI manual for evidence synthesis. <https://jbi-global-wiki.refined.site/space/MANUAL/3283910770/Chapter+11%3A+Scoping+reviews>
- Pluye, P., & Hong, Q. N. (2014). Combining the power of stories and the power of numbers: Mixed methods research and mixed studies reviews. *Annual Review of Public Health*, 35(1), 29–45. <https://www.annualreviews.org/doi/10.1146/annurev-publhealth-032013-182440>
- Rastrick, S. (2017). NHS England » Allied health professions into action: Using allied health professions to transform health, care and well-being. <https://www.england.nhs.uk/wp-content/uploads/2017/01/ahp-action-transform-hlth.pdf>
- Sanders, T., Foster, N. E., Bishop, A., & Ong, B. N. (2013). Biopsychosocial care and the physiotherapy encounter: Physiotherapists' accounts of back pain consultations. *BMC Musculoskeletal Disorders*, 14(1), 1–10. <https://doi.org/10.1186/1471-2474-14-65>
- Singla, M., Jones, M., Edwards, I., & Kumar, S. (2015). Physiotherapists' assessment of patients' psychosocial status: Are we standing on thin ice? A qualitative descriptive study. *Manual Therapy*, 20(2), 328–334. <https://doi.org/10.1016/j.math.2014.10.004>
- Teo, P. L., Bennell, K. L., Lawford, B. J., Egerton, T., Dziedzic, K. S., & Hinman, R. S. (2020). Physiotherapists may improve management of knee osteoarthritis through greater psychosocial focus, being proactive with advice, and offering longer-term reviews: A qualitative study. *Journal of Physiotherapy*, 66(4), 256–265. <https://doi.org/10.1016/j.jphys.2020.09.005>
- Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D., Horsley, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M. G., Garritty, C., ... Straus, S. E. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine*, 169(7), 467–473. <https://doi.org/10.7326/m18-0850>
- Wassinger, C. A., & Sole, G. (2021). Agreement and screening accuracy between physical therapists ratings and the Örebro Musculoskeletal Pain Questionnaire in screening for risk of chronic pain during musculoskeletal evaluation. *Physiotherapy Theory and Practice*, 38(13), 1–7. <https://doi.org/10.1080/09593985.2021.1949766>
- Zangoni, G., & Thomson, O. P. (2017). 'I need to do another course'-Italian physiotherapists' knowledge and beliefs when assessing psychosocial factors in patients presenting with chronic low back pain. *Musculoskeletal Science and Practice*, 27, 71–77. <https://doi.org/10.1016/j.msksp.2016.12.015>

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APPENDIX A

Mixed Methods Appraisal Tool (MMAT) 2018 version
(Hong et al., 2018)

Category of study designs	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?				
	S2. Do the collected data allow to address the research questions?				
<i>Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.</i>					
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?				
	1.2. Are the qualitative data collection methods adequate to address the research question?				
	1.3. Are the findings adequately derived from the data?				
	1.4. Is the interpretation of results sufficiently substantiated by data?				
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				

(Continued)

Category of study designs	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5. Did the participants adhere to the assigned intervention?				
3. Quantitative non-randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				

(Continued)

Category of study designs	Methodological quality criteria	Responses			Comments
		Yes	No	Can't tell	
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

APPENDIX B

Results from search conducted on CINAHL database

S1	Physiotherap*	25,078
S2	Physical therap*	72,411

(Continued)

S3	First contact practitioner	99
S4	S1 OR S2 OR S3	83,078
S5	Assess*	295,336
S6	Identif*	690,289
S7	Screen*	218,474
S8	Detect*	248,127
S9	S5 OR S6 OR S7 OR S8	1,211,660
S10	Psychosocial	550,442
S11	Yellow flag	94
S12	Fear avoidan*	1424
S13	Kinesiophobi*	681
S14	Catastrophisi*	174
S15	S10 OR S11 OR S12 OR S13 OR S14	551, 470
S16	S4 AND S9 AND S15	1507

APPENDIX C

Full text excluded studies

Qualitative studies

Three survey-based surveys were excluded, as they did not discuss anything related to ability, competence or confidence in assessing for psychosocial factors (Arvinen-Barrow et al., 2007; Driver et al., 2019; Hemmings & Povey, 2002). They only discussed whether the physiotherapists found psychosocial assessment to be important and what affected their treatment decision making. Whilst one qualitative study did discuss psychosocial assessments of low back pain patients, it did not discuss physiotherapist confidence or competence in doing so, and this study was therefore excluded (Sanders et al., 2013).

Quantitative studies

A quantitative survey-design study was excluded, as it only discussed *how* physiotherapists assess low back pain patients, but did not discuss how well or how confidently, they identify psychosocial factors (Kent et al., 2009). Another survey was excluded, as it looked at which psychosocial factors physiotherapists have knowledge of, and which ones they feel are important, but again there was no discussion about ability or confidence (Overmeer et al., 2004). Three studies were excluded, as they were related to physiotherapist prognostic ability, rather than specifically the assessment of psychosocial factors (Cook et al., 2015; Dagfinrud et al., 2013; Kelly et al., 2019). A study which was found in the initial stage one scoping search, was excluded, as it was a systematic review (Gray & Howe, 2013).