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Original article

Patient acceptance of care of a novel care pathway for those at risk of poor outcomes from musculoskeletal pain: A mixed methods study

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A B S T R A C T

Objective: Investigate people's acceptance of specialist musculoskeletal care within a new care pathway for common musculoskeletal conditions (low back pain, neck pain/whiplash, knee osteoarthritis).

Design: Convergent parallel mixed methods design referencing the Theoretical Framework of Acceptability. The study included a subset of participants (n = 29) at-risk of poor outcomes from the intervention arm of the PAtHway of CarE for common musculoskeletal conditions (PACE-MSK) trial. In the PACE-MSK arm, participants received specialist physiotherapist care as an adjunct to the care provided by their primary healthcare professional(s). One-to-one semi-structured interviews were conducted around 3-months after commencing in the trial. Quantitative data were collected at baseline and 3-month follow-up (health-related quality of life, pain self-efficacy, global perceived change, satisfaction).

Results: Five themes were identified (Expectations and beliefs shaped patient experience; Clinical expertise and competence influence acceptance; Person-centred care; Mechanisms facilitating beneficial responses to care; Gaps in care pathway implementation). There were positive individual changes in physical quality of life for 17/29 (59%) participants, mental health quality of life for 12/29 (41%), pain self-efficacy for 8/29 (28%) and global perceived change for 19/29 (66%). Management met expectations with the majority reporting high levels of satisfaction. Integrating the qualitative and quantitative data with the Theoretical Framework of Acceptability, there were complementary meta-inferences in the constructs of 'ethicality', 'intervention coherence', 'self-efficacy' and 'affective attitude'. Divergence was identified in 'perceived effectiveness'.

Discussion: In general, there was positive acceptance of the care pathway by participants. Specialist physiotherapists' care was perceived as a positive addition to usual care.

1. Introduction

Globally, musculoskeletal conditions contribute significantly to the burden of disease (GBD 2019 Diseases and Injuries Collaborators, 2020). Musculoskeletal conditions (such as low back pain, neck pain and (knee) osteoarthritis) account for the highest level of healthcare expenditure in Australia, compared to any other group of conditions (Australian Institute of Health and Welfare, 2022). In 2019–20 this burden represented

\$14.6 billion (10.4% of healthcare expenditure). One issue contributing to the burden is poor adherence by healthcare professionals to guideline-based care resulting in failure to provide simple advice, failure to use exercise as frontline management, excessive reliance on low-value passive treatments/medication and overuse of radiology (Bandong et al., 2018; Beales et al., 2022; Bennell et al., 2021; Buchbinder et al., 2022; Kamper et al., 2022; Zadro et al., 2019). Inappropriate referral for medical specialists remains common as is continued use of surgeries

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with limited efficacy. Over-reliance on low-value high-cost components of care can congest healthcare systems, delaying access to care such as surgical review for whom it is appropriate. Changes in the current delivery of care for musculoskeletal conditions are needed (Beales et al., 2021; Slater and Briggs, 2017).

Implementation of care pathways is a way to streamline a person's journey through healthcare systems and facilitate delivery of guideline-based care. Risk-based stratified care pathways typically categorise people for risk of persistent pain/disability and then provide care aligned to their stratification (Linton et al., 2018). Evidence for this type of approach is emerging but contradictory in terms of the effect (Boyle et al., 2021). It has been suggested that (lack of) intervention fidelity could be a reason for stratified care not resulting in better outcomes (Foster et al., 2023; Rebbeck et al., 2023). From the patient perspective though, poor acceptance of a care pathway might be a barrier to implementation and hinder effectiveness.

While patients can see potential benefits in different care pathways (Boyle et al., 2022b), few studies have examined patient acceptance of musculoskeletal care pathways during implementation efforts. A scoping review conducted in 2020 identified 12 articles that explored health outcomes and perceptions of care pathways for people with LBP (Boyle et al., 2021). Insight into the impact of patient experience and acceptability on implementation efforts were predominantly reported through self-rated satisfaction questions (Boyle et al., 2021). However, questionnaires with closed and/or open-ended questions may be limited in describing the underlying factors that influence patient responses to interventions (Semyonov-Tal and Lewin-Epstein, 2021). For example, patients can report high satisfaction with care while at the same time be critical of the care provided (Semyonov-Tal and Lewin-Epstein, 2021). A more effective way to gain a deeper understanding of patient acceptance of care is via qualitative/mixed methods approaches. For instance, a qualitative approach showed that earlier access to MRI scans within a stratified care pathway for people with sciatica had both a positive (understanding pain) and negative patient response (earlier scans could create unnecessary worry about bigger problems) (Saunders et al., 2020). This finding indicated the need for HCPs to ensure that patients understand why they are being referred for additional specialist review (Saunders et al., 2020). In another study (Wideman et al., 2016), patients reported positive personal experiences such as enhanced motivation and hope post-participation in a pain rehabilitation program that were not captured through the quantitative health outcome measures. Applying models of patients' acceptance of care within mixed methods studies could identify underlying factors that affect pathway implementation.

In Australia, we have developed a novel stratified PATHway of CarE for common musculoskeletal conditions (PACE-MSK trial) (Rebbeck et al., 2021). This pathway was designed to facilitate guideline-based management in primary care. Participants were categorised as low risk or high risk according to scores on the 10-item Örebro Musculoskeletal Pain Screening Questionnaire (ÖMPSQ), and randomised to the intervention group or usual care. Those in the intervention low risk pathway were provided access to evidence-based messages via a custom-designed website. More pertinent to the present study, those in the intervention high risk arm were provided early access to specialist physiotherapy services (Beales et al., 2021; Jull and Moore, 2008; Rebbeck et al., 2021). Specialist physiotherapists demonstrate expert-level competency (Australian Physiotherapy Association, 2017) in knowledge, skills, clinical reasoning and behaviours in physiotherapy management, coupled with expert-level service delivery skills (Beales et al., 2021). This profile makes specialist physiotherapists well suited to managing more complex musculoskeletal presentations. Early access to a specialist physiotherapist provided an alternative for treating primary care professionals to obtain assistance with more complex patient presentations when immediate medical specialist review was not indicated. Patient acceptance of this new pathway is critical for widespread implementation. The aim of this study was to evaluate participant

acceptance of receiving specialist musculoskeletal care within a new stratified care pathway for common musculoskeletal conditions (low back pain, neck pain/whiplash associated disorder, knee osteoarthritis).

2. Materials and methods

2.1. Study design

We embedded a convergent parallel mixed methods design (Creswell and Creswell, 2018) within the PACE-MSK trial (Rebbeck et al., 2021) (Fig. 1). Qualitative data were the primary data, and quantitative data from individual participants were compared with their qualitative findings. To avoid contamination with the main PACE-MSK trial outcomes, it was agreed that no more than 10% of participants would participate in this study. To preserve blinding, statisticians analysing the main trial outcomes were not involved in this study. Outcomes are reported in accordance with the Good Reporting of A Mixed Methods Study (GRAMMS) checklist (O' Cathain et al., 2013). The study was approved by the Curtin University Human Research Ethics Committee (HRE2019-0738). All participants provided informed consent.

2.2. Inclusion and exclusion

Participants (i) were over 18 years old, (ii) had presented in the prior 4 weeks/planned to present for a new episode of care for low back pain, neck pain/whiplash or knee osteoarthritis in a primary care setting, (iii) were randomised to the at-risk intervention arm of the PACE-MSK trial, (iv) had consented to contact regarding further studies, and (v) were proficient in English (Rebbeck et al., 2021). Stratification to the at-risk intervention arm was based on scoring over 50 on the 10-item ÖMPSQ-10 (Linton et al., 2011).

Exclusion criteria included having (i) a known or suspected serious medical or inflammatory condition as a cause of their complaint for which they entered the trial, (ii) neurological conditions, (iii) a confirmed fracture or dislocation (e.g., whiplash associated disorder grade IV), and/or (iv) severe depression defined as at risk of self-harm (answered 'yes' to Item 9 of the Patient Health Questionnaire-9). Additionally, people with knee osteoarthritis were excluded if they had undergone or were scheduled for joint replacement surgery.

2.3. Summary of PACE-MSK trial intervention

During the intervention, participants were seen by a specialist physiotherapist for up to 6 sessions. Eligible specialist physiotherapists were defined a priori as having a higher degree or fellowship qualification in musculoskeletal healthcare (Beales et al., 2021). These specialist physiotherapists underwent 2 days of training prior to the commencement of the trial (Kang et al., 2022). Participants underwent an initial assessment consisting of an in-depth person-centred evaluation with consideration of individual preference. Care was delivered in collaboration with the patient and the primary healthcare professional via (i) shared care (continued care with primary healthcare professional where the healthcare professional had the expertise to manage care with guidance from the specialist), (ii) specialist care (for more complex cases) and/or (iii) referred care (referral for additional appropriate support (e.g., psychologist, medical specialist)). Participants (and their healthcare professionals) were also provided custom access to an online repository of guideline-based care recommendations (<https://myapa.inhub.com>).

2.4. Procedure

Eligible participants were contacted around the time of the 3-month follow-up in the PACE-MSK trial, at which time active intervention had been completed, to optimise participant recollection of their experience (Rasmussen et al., 2018). Recruitment continued until interview data

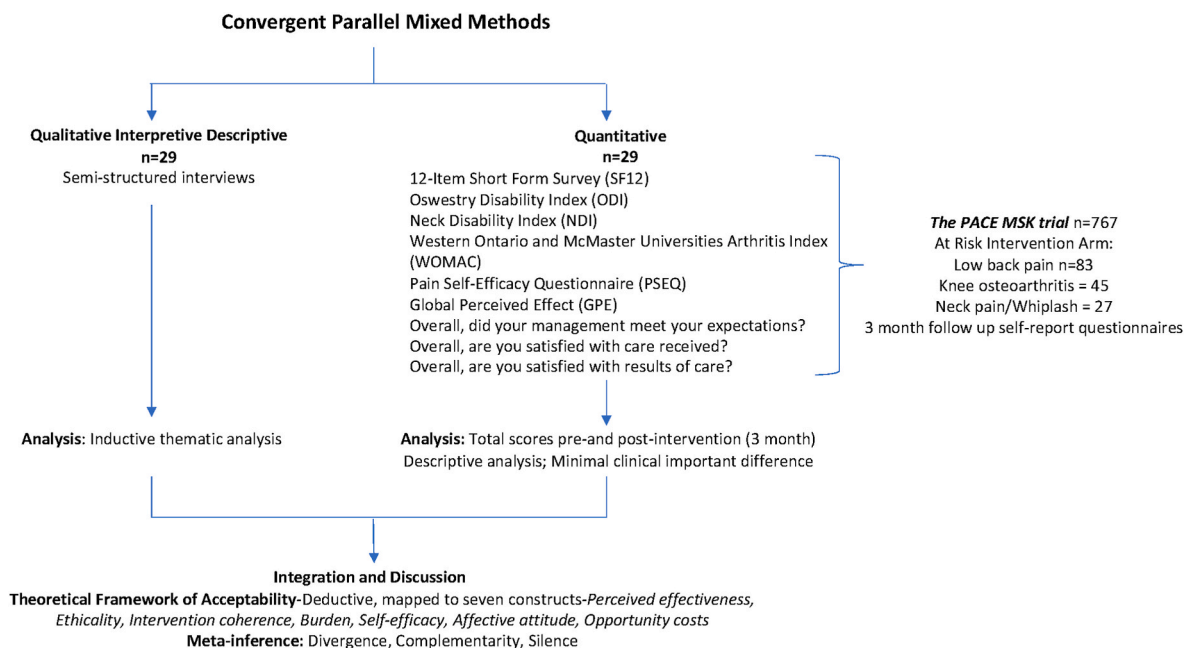


Fig. 1. Mixed methods design.

were not adding new information to the identified themes (Saunders et al., 2018).

2.5. Participant characteristics

Baseline socio-demographic characteristics from the PACE-MSK trial included: age, gender, Australian state of residence, employment, highest education level, profession of the self-identified usual primary healthcare professional, length of time with their condition and average pain level in the past week. Baseline general health information was collected via the Self-Administered Comorbidity Questionnaire (SCQ) (Sangha et al., 2003).

2.6. Qualitative phase

Data were collected from single, one-to-one semi-structured interviews (online meeting/telephone). The authors developed the interview schedule based on the study aims and their prior work related to this subject (Boyle et al., 2021, 2022a, 2022b). Two pilot interviews with eligible participants were conducted to test and iterate the interview schedule. Following testing, only minor adjustments were made to enhance the flow of the interview. Appendix 1 provides the interview schedule. Interviews were conducted by the following team members; EB (15 low back pain, 3 knee osteoarthritis), KE (1 neck pain/whiplash, 1 knee osteoarthritis), SC (1 knee osteoarthritis), MS (2 knee osteoarthritis) and TR (6 neck pain/whiplash). (Note: Appendix 2 provides information on the experience of people involved in data collection and analysis).

2.7. Quantitative phase

Data were collected using questionnaires from the PACE-MSK trial at baseline and 3-month follow-up (Fig. 1). Participants completed the 12-Item Short Form Health Survey (SF-12) (Ware et al., 1996), Pain Self-Efficacy Questionnaire (PSEQ) (Nicholas, 2007) and a rating of global perceived effect (GPE) (-5 = vastly worse to 5 = completely recovered) (Dworkin et al., 2005). Region-specific disability was collected with the Oswestry Disability Index (ODI) (Fairbank and Pynsent, 2000), Neck Disability Index (NDI) (Vernon and Mior, 1991) and Western Ontario and McMaster Universities Arthritis Index (WOMAC)

(Bellamy, 2005). Three additional questions were asked at the 3-month follow-up to evaluate participants' expectations of, and satisfaction with, care: "Did your management meet expectation?", "Overall are you satisfied with the care received?", and "Overall are you satisfied with the results of care?" (responses: "not at all", "slightly", "moderately", "very much" or "completely").

2.8. Qualitative analysis

A reflexive inductive thematic analysis process was used from familiarisation with the data to final theme development (Braun and Clarke, 2019). This process facilitates understanding of the patient experience and what this means for clinical practice (Braun and Clarke, 2019), which was suitable for the research aims. This systematic, flexible, qualitative approach recognises the researchers' subjective knowledge when analysing the data and interpreting patterns/themes across all datasets. Our team took a constructivist/interpretivist axiological approach (Brown and Duenas, 2020). Microsoft Word was used to organise and manage the analysis. The details of the iterative process and researcher involvement during this follow. Initial analyses were performed using participants with low back pain. EB and AM independently analysed data from four interviews. EB and AM then discussed and reflected on findings and agreed on how the data would be coded. Coding strove for a latent approach (Braun and Clarke, 2019) allowing for flexibility to remain true to the data. A further four interviews were conducted, and EB and AM independently analysed these using the coding process. EB and AM then discussed codes and potential themes/sub-themes. Following analysis of 11 interviews, DB independently analysed six random transcripts. EB, AM and DB met to discuss the findings specific to codes and developing themes/sub-themes. Theme development primarily aligned to a story booking approach (Braun and Clarke, 2019). Four additional interviews were conducted, and transcripts were analysed to confirm findings. After a total of 15 interviews had been analysed EB, AM, DB, RF, KE and TR determined that no new meaning was being generated through the interviews and consensus agreement determined the themes/sub-themes. These themes/sub-themes were then reviewed by BS. Next, interviews related to neck pain/whiplash and knee osteoarthritis were integrated into the initial codes and themes established from the participants with LBP, while watching for new themes/sub-themes related to these other body

areas. The same process was used with EB and AM performing the primary analyses, and DB conducting checks prior to broader team input for consensus.

2.9. Quantitative analysis

Descriptive statistics were used to summarise self-reported outcomes. Participants were classified as having improved/not improved based on established clinically meaningful differences between baseline and 3-month follow-up. For the SF-12, improvement was indicated by difference of >3.29 in the physical component summary (PCS) and >3.77 in the mental component summary (MCS) (Díaz-Arribas et al., 2017), and for the PSEQ >11.52 out of 60 points (Dubé et al., 2021). A GPE score of 1–5 was considered improved. For the region-specific measures, we used 20% improvement for the ODI (Smeets et al., 2011), 19% improvement for NDI (Cleland et al., 2008), and 18% improvement for WOMAC global score (Weigl et al., 2006). Expectation and satisfaction responses were reported for each participant.

2.10. Data integration

Qualitative and quantitative findings were deductively mapped to the Theoretical Framework of Acceptability (TFA) (Sekhon et al., 2017). The seven constructs of the TFA ('Affective attitude', 'Burden', 'Perceived effectiveness', 'Intervention coherence', 'Opportunity cost', 'Self-efficacy', 'Ethicality') provide a comprehensive approach to better understand patients' perspectives of acceptability that may influence the successful implementation of care approaches (Sanchez et al., 2019). Overall conclusions from the integrated findings (meta-inferences) (Bergman, 2008) were formulated through discussion between EB and DB over a series of seven meetings, with iterative input from RF. During the integration process, qualitative and quantitative findings were defined as complementary (the strengths of one methodology enhanced the other), divergent (contradictory), or silent (observation only available from one of the methodologies) (Greene et al., 1989; O'Cathain et al., 2010). Then input from the broader team was provided for consensus.

3. Results

Of the 65 individuals invited to participate, 23 did not respond to the invitation and 13 declined citing lack of time. Thus, 29 people participated in semi-structured interviews and had completed the quantitative outcome measures. The individual profiles of each participant are provided in Table 1. The median age was 56.8 years (range 28–76), with 59% identifying as female and 41% as male. All participants reported chronic pain complaints (>3 months).

3.1. Qualitative themes and sub-themes

Interviews were conducted between March 2021 and May 2022. Interview duration ranged from 25 to 60 minutes. Five themes and 15 sub-themes were generated (Fig. 2). No new themes/sub-themes emerged when adding the analyses of the neck pain/whiplash and knee osteoarthritis interviews to the framework developed from participants with low back pain. Additional details including supporting quotes for each sub-theme and summary of findings in relation to TFA constructs are provided in Table 2.

3.2. Theme 1: Expectations and beliefs shape patient experience

Expectations of care were based on prior experiences and beliefs about treatment outcomes. Participants expected care to be either their usual "traditional" (P02) physiotherapy approach focused on "treating symptoms" (P02) or anticipated further "options to manage pain" (P27). When treatment was not what they expected, it could create a level of

tension and some were unsure about continuing with the care; "If I go on for another six months [with the specialist physiotherapist] and the pain will not go, then definitely it is useless, and I really have to think if surgery is an option." (P01). In relation to the TFA, participants' personal expectations and beliefs were relevant to the constructs *perceived effectiveness* and *ethicality*. For instance, when care provided was not perceived as beneficial as per prior experience and/or understanding they questioned the value of continuing with the intervention.

3.3. Theme 2: Clinical expertise and competence influence acceptance

Overall, participants reported a high level of acceptance of care provided. The specialist physiotherapist was perceived as having the "competence" (P10) to manage their condition when the condition was "more serious" (P07). The care provided was perceived as "one of the best things that's ever happened to me." (P28). This theme related to the TFA construct *perceived effectiveness*. The theme also related to the construct *affective attitude* as participants were satisfied with the care provided by what they perceived as being highly skilled professionals; "I felt like a weight had been lifted off my shoulders." (P28).

3.4. Theme 3: Person-centred care

Within this theme, six sub-themes detailed components of care that participants reported as important in facilitating acceptance of the care provided by the specialist physiotherapist.

In general, participants described experiencing a positive therapeutic alliance as "being treated like an intelligent human being" (P14) where the specialist physiotherapist was fully engaged in the participant's conversation. Practitioners taking time to listen to participants to better understand their history was important. "[Specialist physiotherapist] spent enough time listening to me. I have seen plenty of physios and plenty of GPs and I was not happy. Don't just tell me you do this, go home, and you'll be fine" (P18). Participants perceived they had experienced as "thorough" (P20) whereby the specialist physiotherapist was "trying to figure out, doing extra tests that the original [usual care] physio was not doing." (P12). In general, participants described care delivered "holistically" (P21). The holistic approach was described as "looking at the bigger picture" (P03) as opposed to their usual physiotherapy care that was focused on "manipulation" (P03). In terms of care, participants described a focus on active treatment including exercises to increase "strength [and] tolerance" (P04) as opposed to "hands on treatment" (P09). Participants described these as "specific exercises" (P25) that were effective; "about two months later I could see the relief of the headache." (P25). Participants appreciated the specialist physiotherapist's ability to explain the mechanism of pain in a way that "makes sense" (P03). Managing pain can be difficult for people and the increased knowledge was "a light at the end of the tunnel" (P06). In this theme, findings related to TFA constructs of *intervention coherence* as participants understood the multidimensional care with a focus on active exercise, and *burden* which was considered low in relation to their ability to engage in the care directed by the specialist physiotherapist.

3.5. Theme 4: Improved understanding and self-efficacy from earlier access to care

Participants reported increased "confidence" (P02) to self-manage their condition. Undertaking specialist-directed excises improved their pain and encouraged self-management for every-day activities; "I do find that it's much more relaxing, driving to and from work" (P27). They described a better understanding and awareness of activities that were potentially contributing to their condition; "I didn't know all these things that I was doing subconsciously were actually contributing to my pain." (P28). In this sense, participants described a preference for earlier access to a specialist physiotherapist which was more beneficial after "two sessions" than the previous care (P12). Earlier access would have

Table 1
Participant characteristics.

ID	Age	Gender	Condition	State	Employment	Level of education	Usual healthcare professional	Length of time with pain	Average pain in the week before baseline (x/10)	Comorbidities
01	59	Male	Low back pain	WA	Self-employed	University	GP	3–5 years	6	Osteoarthritis
02	72	Male	Low back pain	WA	Retired	University	GP	>10 years	8	Lung disease Heart disease Depression Osteoarthritis
03	48	Female	Low back pain	WA	Employed	University	GP	1–3 years	8	Nil
04	43	Female	Low back pain	WA	Employed	Certificate/ Diploma	GP	>10 years	9	Anxiety
05	31	Female	Low back pain	WA	Student	Certificate/ Diploma	GP	5–10 years	7	Depression Anxiety
06	74	Female	Low back pain	WA	Retired	High-school	Physio	6–9 months	6	High BP Depression Osteoarthritis
07	64	Female	Low back pain	NSW	Retired	High-school	GP	3–5 years	9	High BP Osteoarthritis Glaucoma
08	28	Male	Low back pain	NSW	Home duties	Certificate/ Diploma	GP	>10 years	9	Depression Epilepsy
09	57	Female	Low back pain	Vic	Home duties	Certificate/ Diploma	Physio	>10 years	8	Diabetes Depression Tinnitus
10	63	Female	Low back pain	Vic	Home duties	High-school	GP	>10 years	7	Depression Osteoarthritis
11	48	Female	Low back pain	NSW	Self-employed	University	Physio	9–12 months	9	High BP Heart disease Lung disease
12	35	Male	Low back pain	NSW	Employed	University	Physio	3–5 years	7	Osteoarthritis Gout
13	43	Male	Low back pain	Victoria	Employed	University	Physio	>10 years	7	Nil
14	72	Female	Low back pain	WA	Retired	University	Chiropractor	3–5 years	5	High BP
15	56	Male	Low back pain	WA	Home duties	University	Chiropractor	>10 years	3	Depression Osteoarthritis
16	71	Female	Knee osteoarthritis	WA	Retired	Certificate/ Diploma	GP	5–10 years	8	High BP Lung disease Ulcer Depression Back pain
17	68	Male	Knee osteoarthritis	WA	Employed	University	GP	6–9 months	7	Sleep apnoea Depression Back pain Rheumatoid Arthritis
18	56	Female	Knee osteoarthritis	Vic	Employed	University	GP	5–10 years	8	Ulcer Osteoarthritis Back pain Rheumatoid Arthritis
19	59	Male	Knee osteoarthritis	Qld	Employed	High-school	GP	3–5 years	5	High BP
20	68	Female	Knee osteoarthritis	Vic	Employed	Certificate/ Diploma	Physio	1–3 years	8	Lung disease Back pain Hypothyroid
21	51	Female	Knee osteoarthritis	NSW	Employed	Certificate/ Diploma	Physio	3–5 years	7	High BP Depression Back pain
22	76	Male	Knee osteoarthritis	WA	Employed	University	GP	3–6 months	7	High BP Depression Back pain Rheumatoid arthritis
23	71	Male	Neck pain	Qld	Retired	University	GP	1–3 years	8	High BP Back pain
24	52	Female	Neck pain	NSW	Employed	University	Chiropractor	1–3 years	8	Anaemia Osteoarthritis Back pain Rheumatoid arthritis Thyroid
25	38	Female	Neck pain	Vic	Self-employed	Certificate/ Diploma	GP	9–11 weeks	9	Nil
26	62	Male	Neck pain	Vic	Unemployed	University	Osteopath	1–3 years	6	High BP

(continued on next page)

Table 1 (continued)

ID	Age	Gender	Condition	State	Employment	Level of education	Usual healthcare professional	Length of time with pain	Average pain in the week before baseline (x/10)	Comorbidities
27	64	Male	Whiplash	WA	Retired	University	Physio	>10 years	5	Back pain High BP
28	60	Female	Whiplash	WA	Employed	Certificate/ Diploma	Physio	>10 years	6	Back pain High BP Depression Osteoarthritis
29	58	Female	Whiplash	NSW	Retired	University	GP	>10 years	6	Back pain Ulcer Depression Osteoarthritis Back pain

WA=Western Australia, NSW=New South Wales, Vic = Victoria Qld = Queensland, GP=General Practitioner, Physio = Physiotherapist, BP=Blood Pressure.

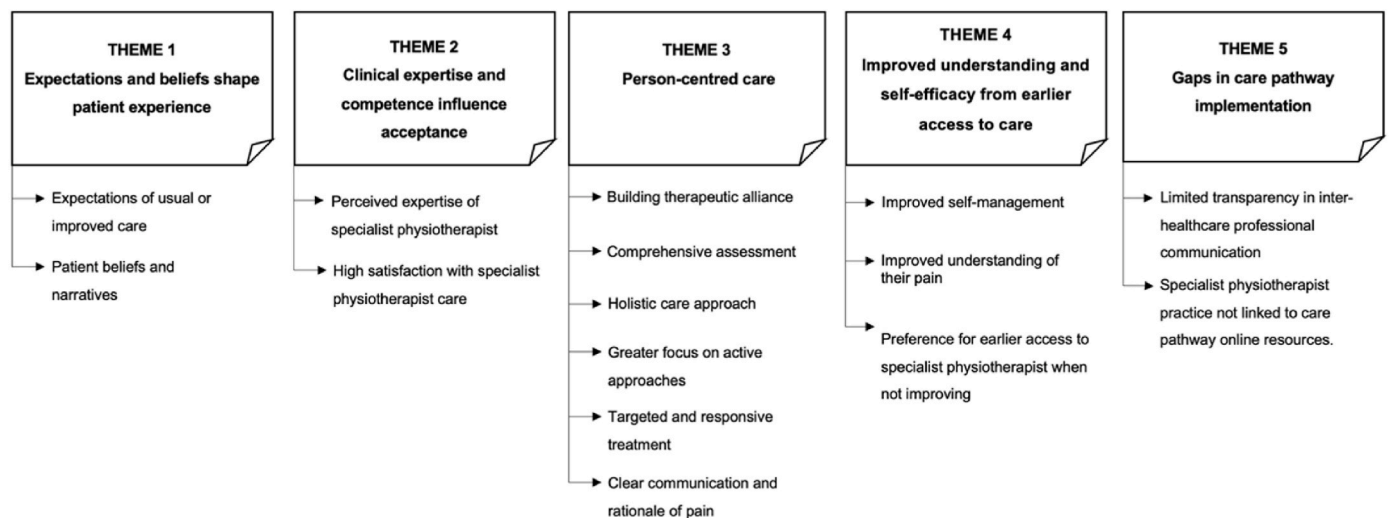


Fig. 2. Qualitative themes and sub-themes.

significantly improved participants’ “quality of life” (P13). In this theme, findings related to TFA constructs of *perceived effectiveness* where participants described better understanding of the pain and *self-efficacy* related to participants’ description of improved confidence in performing daily activities. *Ethicality* was represented in participants’ stated preference that earlier access to specialist physiotherapists would have improved their quality of life.

3.6. Theme 5: Gaps in care pathway implementation

Participants were unsure of the level of communication between their specialist physiotherapist and their usual healthcare professional (s). “I just thought there were two separate things [chiropractor and specialist physiotherapist].” (P24). Some participants noted that they had not looked at the online resource that formed part of the intervention because they were unaware of this resource. There were both positive and negative responses from those who did access the site. Participants that did access the resources described them as a “good source of information” (P23) although it was a little “overwhelming” (P26). However, discrepancy between the online exercises which were “completely different” (P02) to the exercises provided by their specialist physiotherapist was noted. Other participants did not see any additional “benefit” (P11) from the resources beyond that obtained from their engagement with the specialist physiotherapist. This theme related to the TFA construct *intervention coherence* where participants described lack of apparent inter-healthcare professional communication and lack of awareness and/or access to the intervention online resource, and potential dissonance between the website and specialist physiotherapist

advice. This theme also relates to the construct *opportunity costs* which concerns the online resource where some participants described the resource as a valuable support, but others did not feel that the online resource was worthwhile.

3.7. Quantitative outcomes

Baseline and 3-month follow-up data are provided for each participant in Table 3. Based on established clinically meaningful differences, there were positive individual changes on the SF-12 PCS in 17/29 (59%) of participants, SF-12 MCS 12/29 (41%), PSEQ 8/29 (28%), GPE 19/29 (66%), ODI 3/15 (20%), WOMAC 3/6 (50%) and NDI 2/7 (29%) (8/28 (29%) across the three regional specific disability scales combined). Eighteen/29 (62%) participants reported that management met expectations, 21/29 (72%) were satisfied with the care they received and 19/29 (66%) with the results of care at the levels of either ‘very much so’ or ‘completely’ (Table 4).

3.8. Data integration

Integration of qualitative and quantitative findings are provided in Table 5. In the TFA construct of *perceived effectiveness* there was divergence. Fewer participants reported clinically meaningful changes in their patient-reported outcome measures compared with the higher levels of perceived effectiveness reported in the qualitative findings. Positive *ethicality* of the care pathway was illustrated by high levels of satisfaction and complementary information in Themes 1 and 2. The added value of aspects of the specialist musculoskeletal physiotherapist

Table 2
Themes, sub-themes, codes, data extracts and summary of findings related to the Theoretical Framework of Acceptability constructs.

Theme	Sub-theme	Codes	Data extract	Summary of thematic findings in relation to the Theoretical Framework of Acceptability constructs
1. Expectations and beliefs shape patient experience	1.1 Expectations of usual or improved care	Different perspective Something new Senior physio Manipulation More help	P27: “[I was] expecting some improvement in the pain level given, being given options to manage the pain.”	Participants’ expectation of intervention effect was influenced by their prior care experience. Ethical challenges occurred where personal beliefs of pain and management conflicted with their health care practitioners.
	1.2 Patient beliefs and narratives	Need-scans/imagery Need pain medication Need a diagnosis Need to keep moving It’s not just pain	P01: “My friend he also was trying to do exercises. He told me it was not successful and then he did surgery. He said now he is like a newborn: ‘my pain is gone’. If I go on for another six months [with the specialist physiotherapist] and the pain will not go, then definitely it is useless, and I really have to think if surgery is an option.”	
2. Clinical expertise and competence influence acceptance	2.1 Perceived expertise of specialist physiotherapist	Knowledgeable Higher level of confidence with advice Professional Skilled clinician	P07: “For something more serious and my usual physiotherapist is not helping me, I would go and see the specialist physiotherapist. He would be like the specialist, whereas my usual physiotherapist is more like the GP of the physio world.”	Participants perceived that the positive intervention impact was related to healthcare practitioners’ skills and competence and reported a high level of satisfaction with the intervention care and management.
	2.2 High satisfaction with specialist physiotherapist care	Best care Impressed Life changing	P28: “I think it’s probably one of the best things that’s ever happened to me, it was like a breath of fresh air ... I felt like a weight had been lifted off my shoulders. I just thought oh my God, finally someone that kind of understands what’s going on with my body.”	
3 Person-centred care	3.1 Building therapeutic alliance	Approachable Inclusive Good listening Legitimised pain Non-judgmental	P14: “I like to be treated like an intelligent human being. I like to have informed conversation. I like my opinion, or my comments to be considered and not dismissed ... He [specialist physiotherapist] certainly engaged with me, he certainly included me, and it was clear to him that I was not coming to him completely ignorant of what the problem was.”	Participants reported that active listening, open communication, improved understanding of their pain and a holistic approach to care and management are important aspects of the healthcare practitioner consultation. They perceived the intervention as multifactorial with management focused on active individualised exercises that were perceived as easy to apply.
	3.2 Comprehensive assessment	Asked lots of questions Longer appointment-insightful Thorough history	P20: “She [specialist physiotherapist] asked me a lot of questions, looked at my knees and made me move certain ways to see what she possibly thought might have been the issue ... so very thorough. She asked me a lot of questions before we started [about] my general health and also then my physical health.”	
	3.3 Holistic care approach	Different focus Looking at everything Usual care-treats symptoms	P21: “So many people advertise that a physiotherapist can holistically help you but when they say that they’re only saying like physically, but they never can. [The specialist physiotherapist] was the only one that’s touched on the mental health.”	
	3.4 Greater focus on active approaches	No manipulation Focus-exercise	P09: “The difference is [the specialist physiotherapist] gave me exercises to do whereas the other physio [usual care] just gave me ... the hands-on treatment.”	
	3.5 Targeted and responsive treatment	Improved quickly Prescribed exercise-faster result	P26: “He [specialist physiotherapist] was very, very specific. To tell you the truth, ever since I saw [him] about this neck pain, the pain in the neck is low. Most of the headache is not there. It’s gone”.	
	3.6 Clear communication and rationale of pain	Exercise made sense Took time to explain Pictures/drawings	P06: “I saw a light at the end of the tunnel. It was just that he [specialist physiotherapist] explained things so quickly, it just wasn’t ‘get on the table and I’m going to push your back here and push your back there and this might hurt a bit’ ... He [specialist physiotherapist] explained everything it was just a totally different type of physiotherapy.”	

(continued on next page)

Table 2 (continued)

Theme	Sub-theme	Codes	Data extract	Summary of thematic findings in relation to the Theoretical Framework of Acceptability constructs
4. Improved understanding and self-efficacy from earlier access to care	4.1 Improved self-management	Adaption More confidence Prevent flare up	P27: "I find I'm using some of the exercises that he's [specialist physiotherapist] given me when I'm in the car. I am still using the breathing exercises that he's given me and I do find that it's much more relaxing, driving to and from work."	Participants perceived that their individualised exercise enhanced their confidence in performing daily activities. They reported that a better understanding of their pain helped them develop better coping strategies. Participants noted that earlier access to the specialist physiotherapy care and management approaches would have improved their quality of life earlier.
	4.2 Improved understanding of their pain	Self-aware Recognised limitations Understanding trigger	P28: "It really made me realise that some of the pain that I was having in my neck was actually me, but I didn't know it was me. I didn't know all these things that I was doing subconsciously were actually contributing to my pain."	
	4.3 Preference for earlier access to specialist physiotherapist when not improving	Earlier access- better position General practitioners limited knowledge Refer prior to further medical review	P13: "Had I known this in the past, four years ago my life would have been very different. Even though my wife says, nothing is lost because you do feel bad, I wish I had had this. The quality of life it's so important. You can live a life, but it is the quality of life that adds the true colours to your life otherwise you are just living a life."	
5 Gaps in care pathway implementation	5.1 Limited transparency in inter-healthcare professional communication	Not sure if usual care received communication Letter sent to usual care and patient Usual care not aware	P24: "I just thought there were two separate things [Usual care: chiropractor and specialist MSK physiotherapist]. No one has really told me how the two can marry with each other and how I can manage. I just see them separately and I see it as two separate treatments."	Participants did not perceive a consistent communication process between healthcare practitioners. They reported that the online intervention resources did not appear to be linked to the intervention process. Some participants who had viewed the online intervention information reported limited benefit from the resources.
	5.2 Specialist physiotherapist practice not linked to care pathway online resources	More directed at medical professional Exercises received not matched with online resource Not aware of online resource Good source of information	P02 "I have a look at it [trial website MYPAINHUB] quite often because it's something that I can use but it is not an easy website to use ... My personal profile is based on the questions that I answered, and the exercises are set out for me so in that sense it's good ... But the exercises [on MYPAINHUB] are completely different to the ones I got from the specialist physiotherapist."	

care was described through the *intervention coherence* and supported by an overall positive response to management meeting expectations and satisfaction with care. Complementary findings underpinned positivity in the *affective attitude* construct with participants expressing positive feelings about the pathway and associated intervention. This was also found with *self-efficacy* with Theme 4 and positive satisfaction with care considered markers of positive self-efficacy. *Opportunity costs* and *burden* were silent with no quantitative data considered to align with these constructs.

4. Discussion

This study explored the concept of acceptance amongst people engaged in a novel stratified care pathway for common musculoskeletal conditions (PACE-MSK trial). These were people with chronic complaints who had been assessed as at-risk of poor outcomes. Their acceptance of the pathway, primarily defined by their engagement with specialist physiotherapists, was ascertained via in-depth interviews, descriptive quantitative measures of expectation and satisfaction, and a range of individual health outcome measures. Broadly, there was positive acceptance of the pathway which is deemed a critical component for widespread implementation (Stensland et al., 2022). Acceptance of the pathway provides a critical step in the research translation frameworks underpinning the implementation of PACE-MSK, with establishing efficacy the next requirement (Skivington et al., 2021).

4.1. Strengths, limitations and methodological considerations

The mixed method design offered detailed insight into acceptance of the care pathway where evaluation of acceptance is often limited to simple questions related to satisfaction (Boyle et al., 2021; Button et al., 2019). Another strength was the use of the TFA as a robust framework for the consideration of acceptance (Sekhon et al., 2017). However, we did not a priori select quantitative data matched specifically to the constructs within the TFA, which likely had an effect on the data integration process. The inclusion of the recently developed TFA questionnaire (Sekhon et al., 2022) may be useful for future intervention studies to efficiently assess all constructs within acceptability. The ÖMPSQ-10 was developed in samples of people with spinal pain (Linton et al., 2011) and may perform reasonably in predicting risk of poor disability outcomes (Karran et al., 2017). While there appears to be a relationship between the ÖMPSQ-10 and the presentation of people with knee osteoarthritis (Vårbakken et al., 2019), and factors within the Örebro seem to align with potential predictors of knee osteoarthritis prognosis (de Rooij et al., 2016), the predicative ability of this tool for knee osteoarthritis probably needs specific validation. Participants generally had high levels of education, with the majority having university or post-high school certificate or diploma (e.g., traded certification, other technical college training). Higher education has been associated with higher health literacy and may influence experiences with healthcare systems (Jansen et al., 2018). Thus, the views and opinions of this cohort might not reflect those with lower levels of education. Further work might consider use of other socioeconomic markers including social deprivation, social inclusion and also ethnicity. Participants had

Table 3
Baseline and 3-month follow-up (and change in scores) of the PACE-MSK trial self-reported outcome measures.

ID	ÖMPQ-10	SF-12						Region Specific Disability Measure			PSEQ			GPE
		Baseline		Follow up		Change		Baseline	Follow up	Change	Baseline	Follow up	Change	Follow up
		PCS	MCS	PCS	MCS	PCS	MCS							
ODI														
01	55	35.25	30.62	40.32	37.10	5.06 ^a	6.47 ^a	32%	32%	0%	25	29	4.00	1 ^d
02	88	26.51	32.74	28.84	43.96	2.33	11.22 ^a	47%	48%	1%	10	13	3.00	0
03	52	37.52	45.68	37.87	46.88	0.35	1.20	42%	6%	-36% ^b	33	50	17.00 ^c	4 ^d
04	54	30.29	40.63	35.75	43.44	5.46 ^a	2.81	36%	24%	-12%	32	43	11.00	-1
05	65	27.02	37.37	33.00	31.42	5.98 ^a	-5.95	32%	26%	-6%	28	45	17.00 ^c	2 ^d
06	51	29.03	47.31	36.59	43.91	7.56 ^a	-3.40	28%	18%	-10%	23	44	21.00 ^c	2 ^d
07	59	42.05	33.11	45.81	47.98	3.76 ^a	14.86 ^a	30%	28%	-2%	11	22	11.00	2 ^d
08	68	28.69	45.22	51.32	32.19	22.62 ^a	-13.03	54%	38%	-16%	36	20	-16.00	0
09	63	23.94	46.33	31.64	52.37	7.70 ^a	6.04 ^a	50%	18%	-32% ^b	15	34	19.00 ^c	0
10	54	42.73	32.53	43.27	40.04	0.53	7.51 ^a	26%	18%	-8%	33	45	12.00 ^c	-2
11	64	28.39	39.85	30.58	34.65	2.19	-5.20	32%	34%	2%	43	47	4.00	0
12	61	38.66	33.95	37.11	31.28	-1.56	-2.67	42%	38%	-4%	35	31	-4.00	1 ^d
13	52	36.72	46.26	33.74	56.98	-2.98	10.72 ^a	36%	16%	-20% ^b	47	60	13.00 ^c	4 ^d
14	52	39.08	45.29	34.94	40.77	-4.14	-4.53	22%	30%	8%	48	41	-7.00	0
15	55	49.06	30.92	56.97	22.27	7.92 ^a	-8.65	34%	26%	-8%	38	30	-8.00	1 ^d
WOMAC														
16	72	21.73	30.41	36.53	27.85	14.80 ^a	-2.55	71.88	44.79	-27.08 ^b	17	28	11	3 ^d
17	63	32.59	39.35	35.09	51.05	2.50	11.70 ^a	44.79	17.71	-27.08 ^b	33	32	-1	2 ^d
18	68	38.88	35.81	37.91	39.02	-0.98	3.21	missing	33.33	missing	26	24	-2	3 ^d
19	51	23.48	53.95	30.69	52.68	7.21 ^a	-1.27	41.67	26.04	-15.63	36	41	5	1 ^d
20	60	28.38	44.71	35.61	52.42	7.23 ^a	7.71 ^a	51.04	29.17	-21.88 ^b	28	49	21 ^c	1 ^d
21	57	26.29	54.61	36.30	35.64	10.01 ^a	-18.97	37.50	38.54	1.04	29	17	-12	-2
22	67	30.70	17.90	36.42	28.39	5.72 ^a	10.49 ^a	65.63	65.63	0.00	15	4	-11	-5
NDI														
23	58	38.61	44.55	42.26	50.52	3.65 ^a	5.97 ^a	36%	28%	-8%	43	47	4	2 ^d
24	51	36.65	40.89	40.07	43.19	3.43 ^a	2.30	36%	34%	-2%	45	48	3	1 ^d
25	51	57.91	49.69	41.84	38.69	-16.07	-11.00	30%	2%	-28% ^b	51	59	8	4 ^d
26	60	35.91	45.67	37.61	49.76	1.70	4.09 ^a	36%	26%	-10%	35	42	7	2 ^d
27	65	34.18	57.00	43.74	46.49	9.55 ^a	-10.50	40%	18%	-22% ^b	33	45	12 ^c	3 ^d
28	53	51.04	45.61	39.02	52.28	-12.02	6.67 ^a	36%	24%	-12%	50	50	0	1 ^d
29	70	21.73	29.86	31.89	33.24	10.16 ^a	3.38	68%	68%	0%	2	3	1	0
n (% improved)						17/29 (59)	12/29 (41)				8/28 (29)	8/29 (28)		19/29 (66)

PACE MSK trial = Pathway of Care for people with common musculoskeletal conditions, ÖMPQ-10 = 10-item Örebro Musculoskeletal Pain Screening Questionnaire, SF-12 = 12 Item Short form Survey, PCS=Physical Component Summary, MCS = Mental Component Summary, PSEQ=Pain Self-efficacy Scale, ODI=Oswestry Disability Index, WOMAC=Western Ontario and McMaster Universities Arthritis Index, NDI=Neck Disability Index, GPE = Global Perceived Effect.

^a Clinical meaningful improvement SF-12 based >3.29 in PCS and >3.77 in MCS (Díaz-Arribas et al., 2017).

^b Clinical meaningful reduction for ODI based of 20% improvement (Smeets et al., 2011), WOMAC ≥18% (Weigl et al., 2006), and NDI 19% (Cleland et al., 2008).

^c Clinical meaningful reduction for PSEQ based on a minimal detectable change of 11.52 out of 60 points (19% of the total score) (Dubé et al., 2021).

^d GPE scale -5 to 5 (-5 considered improved).

longstanding symptoms, which might also be an important consideration when interpreting the results. We have tried to use conservative estimates to establish improvement in health outcome measures at the individual level. Changing the cutoff for dichotomisation of the GPE by 1 point would reduce the proportion of those improved to 12/29 (41%), which may more closely align with most of the other outcome measures. We acknowledge the overall estimates of individual improvement may not reflect the outcome of the trial as a whole. Additionally, the people who elected to engage in the qualitative interviews may have been those more likely to have been more satisfied with their experience. To address any participant reluctance to report negative responses, we encouraged people to expand on areas where they appeared hesitant. Analysis of the qualitative data and the integration process were conducted by a multidisciplinary team at multiple timepoints to discuss, iterate and find consensus to facilitate trustworthiness, credibility and dependability (Korstjens and Moser, 2018) of the results. While acceptance of the pathway and care of people with chronic musculoskeletal conditions was positive, the question of acceptance by healthcare professionals, administrators and funders would also be important (Sekhon et al., 2017).

4.2. Comparisons to the literature

Complementary meta-inferences in the constructs of ethicality, intervention coherence and affective attitude supported positive acceptability (Table 5). Participants acknowledged the expertise specialist physiotherapists provided beyond that of their usual care providers. This aligns to the training and competencies of specialist physiotherapists and their proposed role within primary healthcare in Australia (Beales et al., 2021; Kang et al., 2022; Rebbbeck et al., 2021). It is accepted that (chronic) musculoskeletal conditions need to be managed from a person-centred, biopsychosocial perspective. There are many barriers to this in practice (Ng et al., 2021). Our results suggests that at the client-practitioner level, PACE-MSK provided the opportunity for the alignment of specialist physiotherapists' expertise in managing complex musculoskeletal conditions, patient preferences and evidence-informed care. A central theme of this type of care is to have people with musculoskeletal conditions engage more in self-management (Kongsted et al., 2021). The meta-inference found complementary support for intervention self-efficacy (Table 5); that is the confidence of the person to engage in the intervention. This is different to pain self-efficacy, and indeed there were divergent findings in the construct of perceived effectiveness (Table 5).

Table 4
Participant expectation and satisfaction following specialist physiotherapist intervention.

ID	Management met expectations	Satisfied with the care received	Satisfied with the results of care
01	Moderately	Very Much So	Moderately
02	Very Much So	Very Much So	Very Much So
03	Very Much So	Very Much So	Very Much So
04	Moderately	Moderately	Moderately
05	Completely	Completely	Completely
06	Very Much So	Completely	Completely
07	Completely	Completely	Completely
08	Moderately	Moderately	Moderately
09	Very Much So	Very Much So	Very Much So
10	Moderately	Moderately	Moderately
11	Completely	Completely	Very Much So
12	Slightly	Moderately	Moderately
13	Completely	Completely	Completely
14	Completely	Completely	Moderately
15	Completely	Very Much So	Very Much So
16	Very much So	Completely	Completely
17	Slightly	Moderately	Slightly
18	Moderately	Moderately	Moderately
19	Very Much So	Very Much So	Very Much So
20	Very Much So	Completely	Completely
21	Moderately	Very Much So	Very Much So
22	Slightly	Moderately	Moderately
23	Very Much So	Very Much So	Very Much So
24	Moderately	Very Much So	Very Much So
25	Very Much So	Very Much So	Very Much So
26	Very Much So	Very Much So	Very Much So
27	Very Much So	Very Much So	Completely
28	Completely	Completely	Completely
29	Moderately	Moderately	Moderately
n (%) ^a	18/29 (62%)	21/29 (72%)	19/29 (66%)

^a n (%) reporting levels of either 'very much so' or 'completely'.

Participants perceived positive benefit of care were under-represented in the quantitative data. In our findings, participants reported benefits in improved self-management and improved understanding of their condition (Fig. 2) as valued attributes of the consultation with the specialist physiotherapist. However, these valued attributes do not necessarily align to improved patient-reported health outcomes (Jones et al., 2021; Rochfort et al., 2018). The identified divergence in perceived effectiveness (Table 5) reflects the increasing finding that current trial-measured patient health outcomes may not be aligned to patient perception of improvement (Borghuis et al., 2020; Griffin et al., 2020; Pires et al., 2022; Trujols et al., 2013). Important consideration in this divergence include standardised questionnaires not capturing important aspect of life experience (Borghuis et al., 2020), and may not reflect cultural and individual beliefs and values (Griffin et al., 2020; Pires et al., 2022). This requires consideration in evaluating the effectiveness of implementation programs for (chronic) musculoskeletal conditions.

From the participants' perspective, they had limited knowledge of inter-professional communication (Table 5). This does not mean inter-professional communication did not occur, but that the participants were largely unaware of it. Further information on the level and quality of inter-professional communication within PACE-MSK is needed. Suggested areas for consideration of improving inter-professional communication include education and training initiatives, healthcare profession role clarity and a shared vision for patient management that also involves the patient (Nguyen et al., 2019). Additionally, there was some report of dissonance between information provided by the specialist physiotherapists and what was provided on the website (Table 5). Conflicting information can create uncertainty for healthcare consumers, and further consideration of ways to limit this may be beneficial. Engaging patients in participatory design of educational material might be one avenue to assist this (Beales et al., 2023).

4.3. Recommendations

Patient perspectives may assist further developments to management of people with musculoskeletal conditions at risk of poor outcome/with more complex presentations within a care pathway framework. Our results, supported by the literature related to the development of care pathways for musculoskeletal pain, indicate people with musculoskeletal pain conditions want (i) to have their concerns validated, (ii) appreciate a holistic approach, (iii) want to be involved in decision making, (iv) value coherence in care (care makes sense to them and their providers), (v) want their healthcare providers to work collaboratively, (vi) want to know that their providers have the shared expertise to assist their management, and (vii) appreciate transparency as they move within a care pathway (Boyle et al., 2022a, 2022b; Saunders et al., 2020, 2022). These recommendations are consistent with broader expectations of people in pain in general (Lim et al., 2019). Designing care pathways and associated interventions with these concepts in mind may improve acceptance, engagement and downstream outcomes. Consideration of barriers and enablers reported by patients and healthcare providers (Dickson et al., 2024; Ng et al., 2021) and models of behaviour change (Dickson et al., 2024; Gervais-Hupé et al., 2023; Ng et al., 2023) is also warranted. We would strongly support current recommendations for consumer engagement in pathway, intervention and trial design to facilitate this process. As a direct strategy for this process, the themes and sub-themes identified in the qualitative component of this study (Fig. 2) might serve as an initial checklist during design phases.

5. Conclusion

The results of this study provide a comprehensive insight into the acceptance of a novel care pathway by people at-risk of poor outcomes from common musculoskeletal conditions. The participants described the added value of a comprehensive assessment within a holistic care approach delivered by specialist physiotherapists with expert-level

Table 5
Integration of data and meta-inferences through the Theoretical Framework of Acceptability.

Theoretical Framework of Acceptability component constructs	Qualitative findings summary statement	Quantitative findings summaries		Meta-inference
Perceived Effectiveness The extent to which the intervention is likely to achieve its purpose.	Perceived effect was based on prior experience and/or need for improved care (Theme 1). Perceived beneficial effect was related to the healthcare professional skills and competence (Theme 2). Perceived beneficial effect was related to a better understanding of their condition/pain (Theme 4).	Satisfied with the results of care: 0/29- Not at all 1/29- Slightly 9/29- Moderately 11/29- Very Much So 8/29- Completely	Number improved: SF-12 PCS: 17/29 SF-12 MCS: 12/29 PSEQ: 8/29 ODI: 3/15 WOMAC: 3/6 NDI: 2/7 GPE: 19/29	Divergent: High level of acceptability and reported satisfaction were not reflective of reported health outcome data.
Ethicality The extent to which the intervention has a good fit with the participants individual value system.	Prior beliefs and narratives influence perceived effect (Theme 1). High level of satisfaction with care approach perceived as improved compared to prior experience (Theme 2). Preference for earlier access to care as per intervention pathway when not improving (Theme 4).	Satisfied with the care received: 0/29- Not at all 0/29- Slightly 8/29- Moderately 12/29- Very Much So 9/29- Completely		Complementarity: Prior care influenced expectations of intervention effect. Challenges occurred where personal beliefs conflicted with healthcare practitioner beliefs.
Intervention Coherence The extent to which the individual understands the intervention and how it works.	Intervention care described as a comprehensive assessment, with an individualised holistic approach and clear rationale (Theme 3). Limited awareness of inter-healthcare practitioner communication (Theme 5).	Management met expectations: 0/29- Not at all 3/29- Slightly 8/29- Moderately 11/29- Very Much So 7/29- Completely	Satisfied with the care received: 0/29- Not at all 0/29- Slightly 8/29- Moderately 12/29- Very Much So 9/29- Completely	Complementarity: Aspects of care described as added value compared to prior experience. There was limited awareness of inter-healthcare professional communication and follow up care.
Self-efficacy The participants confidence that they can perform the behaviour required to participate in the intervention.	Improved self-management (Theme 4).	Satisfied with the care received: 0/29- Not at all 0/29- Slightly 8/29- Moderately 12/29- Very Much So 9/29- Completely		Complementarity: Improved confidence in performing daily activities and or managing episodes of increased pain.
Burden The perceived amount of effort that is required to participate in the intervention.	Targeted exercises perceived as easy (Theme 3).			Silent: Participating in the care pathway did not require additional effort observed in qualitative data only.
Affective Attitude How an individual feels about the interventions.	A high level of acceptance of the role of the specialist physiotherapist (Theme 2).	Management met expectations: 0/29- Not at all 3/29- Slightly 8/29- Moderately 11/29- Very Much So 7/29 - Completely	Satisfied with the care received: 0/29- Not at all 0/29- Slightly 8/29- Moderately 12/29- Very Much So 9/29- Completely	Complementarity: The perceived expertise of the specialist physiotherapists in managing their condition/pain enhanced patient engagement and acceptance of care.
Opportunity Costs The extent to which the benefits, profits or values must be given up to engage in the intervention.	Pathway online recourse inadequately linked to the specialist physiotherapist care (Theme 5).			Silent: Online trial resources described to be of limited benefit.

SF-12 = 12 Item Short form Survey, PCS=Physical Component Summary, MCS = Mental Component Summary, PSEQ = Pain Self-efficacy Scale, ODI=Oswestry Disability Index, WOMAC=Western Ontario and McMaster Universities Arthritis Index, NDI=Neck Disability Index, GPE = Global Perceived Effect.

competencies. While further analysis of the efficacy of the pathway will be forthcoming (Rebbeck et al., 2021), at the client-practitioner level, access to specialist services is acceptable as a care option between usual care and specialist medical input.

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Declaration of interest statement

During the course of the PACE-MSK trial, DB was president of the Australian College of Physiotherapists, the body responsible for training and awarding of clinical fellowships for physiotherapists. There were no other declaration of interests.

Data availability statement

For data requests contact the corresponding author.

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Appendix A. Supplementary data

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