

What Works and Does Not Work in a Self-Management Intervention for People With Chronic Pain? Qualitative Systematic Review and Meta-Synthesis

Hemakumar Devan, Leigh Hale, Dagmar Hempel, Barbara Saipe, Meredith A. Perry

Background. Self-management interventions fostering self-efficacy improve the well-being of people with chronic pain.

Purpose. The purpose of this study was to synthesize the enablers (what works) and barriers (what does not) of incorporating self-management strategies for people in everyday life after completion of a pain self-management intervention.

Data Sources. Major electronic databases (MEDLINE, AMED, PsycINFO, Cochrane Library, PubMed, CINAHL, Scopus, and Google Scholar) were searched from inception to July 2016.

Study Selection. Study selection included qualitative and mixed-method studies that explored the perceptions of individuals with chronic pain after completion of a self-management intervention.

Data Extraction. A thematic analysis approach was used to synthesize the review findings, and a Confidence in the Evidence from Reviews of Qualitative Research (CERQual) Approach was used to assess the level of confidence.

Data Synthesis. Thirty-three studies with 512 participants were included. Enablers to self-management included self-discovery—the ability to distinguish self (ie, body, thoughts, and feelings) from pain; feeling empowered by incorporating self-management strategies into practice; and supportive ambience via collaborative relationships with clinicians and support from family and friends. Barriers to self-management included difficulty with sustaining motivation for pain self-management; distress experienced from ongoing pain, anxiety, and depression; and unsupportive relationships with clinicians, family, and friends.

Limitations. This review only included interventions that involved at least 4 self-management skills; thus, informative studies may have been missed. The follow-up period varied from immediately after the intervention to 72 months following the intervention; therefore, it is uncertain which of the key enablers and barriers were most influential long term. Only articles published in the English language were included; studies conducted in low- and middle-income countries could not be located.

Conclusions. The sustained effort to self-manage chronic pain could be exhausting, and motivation could wane over time following intervention. Providing intermittent support in the form of booster sessions and peer support groups may be important. Person-centered care via shared decision making and guided problem solving is essential to facilitating ongoing self-management.

H. Devan, PhD, Centre for Health, Activity and Rehabilitation Research (CHARR), School of Physiotherapy, University of Otago, Wellington, New Zealand. Address all correspondence to Dr Devan at: hemakumar.devan@otago.ac.nz.

L. Hale, PhD, Centre for Health, Activity, and Rehabilitation Research (CHARR), School of Physiotherapy, University of Otago.

D. Hempel, PGDipRehab, Pain Management Service, Capital and Coast District Health Board (CCDHB), Wellington, New Zealand.

B. Saipe, B Phty, Pain Management Service, Capital and Coast District Health Board (CCDHB).

M. A. Perry, PhD, Centre for Health, Activity, and Rehabilitation Research (CHARR), School of Physiotherapy, University of Otago.

[Devan H, Hale L, Hempel D, et al. What works and does not work in a self-management intervention for people with chronic pain? Qualitative systematic review and meta-synthesis. *Phys Ther*. 2018;98:381–397.]

© 2018 American Physical Therapy Association

Accepted: February 13, 2018

Submitted: March 14, 2017



Post a comment for this article at:
<https://academic.oup.com/ptj>

Chronic pain is the leading cause of disability worldwide.^{1,2} Interventions focusing exclusively on pharmacological approaches have produced only short-term effects.³ However, behavioral approaches, such as self-management support, improve well-being in individuals with chronic pain conditions (eg, low back pain, postsurgery, and trauma).⁴ The self-efficacy^{4,5} gained from pain self-management support, facilitates behavior change and enables individuals to better manage their symptoms.⁵ Self-efficacy is one's belief of being capable of exerting control over one's behavior to engage in a desired outcome.⁶

Multidisciplinary pain management interventions facilitate and support the development of individual self-management strategies via active and passive approaches.^{7,8} Although passive support approaches (eg, information provision via leaflets) may increase knowledge, this does not necessarily translate in to increased self-efficacy and behavior change.⁹ For passive support approaches to be effective, tailored information provision is important.⁸ Further, when factors such as health literacy are considered passive support may not be appropriate.¹⁰ Therefore, passive support alone is less likely to foster behavior change particularly for addressing fear avoidant behaviors.⁷ Conversely, active support approaches (eg, cognitive and behavioral strategies) develop self-management skills via self-reflection, active goal setting and problem solving, and fostering collaborative patient-clinician partnerships (ie, therapeutic alliance).^{8,11} Strong evidence suggests that multidisciplinary, pain management teams that have an ethos of active support, improve pain-related disability and depression in people with chronic pain.⁷ Further, individuals participating in such active support approaches are more likely to adopt active approaches to self-manage their symptoms long term.⁷

Reviews demonstrating positive health outcomes for active self-management approaches are predominantly quantitative.^{4,5,7,12} Given the biopsychosocial focus of most pain management

interventions, qualitative exploration of patients' perceptions toward active self-management approaches and their lived experiences of using promoted strategies is warranted.¹³ Understanding patient perspectives will inform future implementation strategies by identifying the practical challenges patients experience when contemplating and applying strategies learned from such interventions.

One integrative review¹⁴ found that a variety of personal, psychological and treatment-related factors could be both facilitators and barriers to ongoing self-management in people with chronic pain. However, the review provided a limited description of participants' experiences from 8 qualitative studies. Further, the definition and types of self-management approaches (active vs passive support approaches) were not clear, limiting the interpretation of these results. As active approaches to self-management positively influence clinical outcomes in people with chronic pain,⁷ understanding experiences of individuals' participating in such interventions is essential to optimize the design and delivery of self-management interventions. The primary purpose of this meta-synthesis was to synthesize the perceptions of individuals with chronic pain on the enablers (what works) and barriers (what does not) of incorporating and maintaining self-management strategies after completion of a self-management intervention.

Methods

Data Sources and Searches

The review protocol was registered with PROSPERO database of systematic reviews.¹⁵ The review is reported in compliance with the requirements of PRISMA¹⁶ and ENTREQ statement for reporting reviews of qualitative meta-synthesis.¹⁷

The following major electronic databases were searched since inception until the last week of July 2016: MEDLINE, AMED, PsycINFO, Cochrane Library (via Ovid), PubMed, CINAHL (via EBSCO), Scopus and Google Scholar. A supplementary search from previous-

ly published systematic reviews and from the Google Scholar citations of the included articles was also made. The search strategy is described in eAppendix 1 (available at <https://academic.oup.com/ptj>).

The primary investigator (H.D.) conducted the electronic search in the above-mentioned databases. All references were exported to Endnote (Version X7; Thomson Reuters, New York, New York), and H.D. conducted a title screen. Next, M.A.P. and H.D. independently screened the abstracts and full texts of included articles. If a decision could not be reached, L.H. was available to facilitate a consensus.

Study Selection Process

Participants. Studies involving adults (16 years old and older) with chronic pain were included. Chronic pain was defined as persistent or recurring pain for more than 3 months.¹⁸ Chronic pain disorders were defined as chronic primary pain, posttraumatic and postsurgical pain, neuropathic pain, malignant pain, headache and orofacial pain, visceral pain, and musculoskeletal pain (eg, osteoarthritis, rheumatoid arthritis).¹⁸ Chronic primary pain was defined as pain in 1 or more anatomic regions and includes common pain conditions of unknown etiology (eg, nonspecific back pain, fibromyalgia, and irritable bowel syndrome).

Intervention. Self-management was defined as the "individual's ability to manage the symptoms, treatment, physical and psychosocial consequences and lifestyle changes inherent in living with chronic pain."^{4(p178)} The self-management intervention must have comprised at least 4 of the following 8 essential self-management skills: self-efficacy building, self-monitoring of symptoms, goal setting and action planning, shared decision-making, problem solving, self-tailoring, partnership between the views of patients and health professionals, and proactive follow-up.^{8,11,12} There were no restrictions concerning the implementation of self-management intervention (ie, setting, provider, mode, format, and duration).¹⁵

Design. We included qualitative studies exploring the perceptions of individuals with chronic pain participating in a self-management intervention using qualitative data collection methods (eg, focus groups and individual interviews) and qualitative data analysis methods (eg, phenomenology and grounded theory). Mixed-method studies with a qualitative component and/or qualitative studies conducted alongside or after a randomized control trial assessing the effectiveness of a self-management support intervention were also included.

We excluded studies that were not focused on experiences of participating in a self-management intervention. Studies using a quantitative analysis approach for qualitative data were excluded. Non-English peer-reviewed articles and conference abstracts and proceedings were not included.

Quality Assessment

The Critical Appraisal Skills Program (CASP) guidelines¹⁹ was used to appraise the methodological quality. H.D. and M.A.P. independently assessed the quality of individual studies. If an agreement could not be reached, L.H. was available to reach a consensus decision.

Data Extraction

On the basis of previously published systematic reviews of qualitative studies,^{20,21} a general summary of included studies was extracted by H.D. and verified by M.A.P.

Data Synthesis and Analysis

Thematic synthesis was used for data synthesis.²² On the basis of this approach, a 3-step analysis²³ was undertaken using NVivo (Version 11; QSR International, Doncaster, Victoria, Australia): First, a line-by-line coding of text segments specific to review objectives was made from results and discussion sections of the included articles. Second, the raw codes were labeled to form “descriptive themes.” Next, “analytical themes” were generated from “descriptive themes” that went beyond the synthesis of included articles. The generation of analytical themes were primarily driven

by our review questions (ie, inductive) with clear implications for practitioners and policy makers.²³ Analytical themes were presented as a “main theme” and contributing “subthemes” and a visual framework was created to illustrate their relationships. An example of the thematic synthesis approach is presented in eAppendix 2 (available at <https://academic.oup.com/ptj>).

H.D. coded all the included articles, and M.A.P. and L.H. coded 8 (25%) randomly chosen included articles, respectively. When coding was completed, the whole research team discussed the synthesis of findings (descriptive themes) and examined the analytical themes from the analysis. An iterative approach was undertaken by moving between the raw data from the original articles to extract analytical themes emerging from the synthesis. We used diagrams and mind maps to discuss, debate, and explain the analytical themes. The final analytical themes were derived by consensus among the research team.

On the basis of recommendations of Cochrane Collaboration, a Confidence in the Evidence from Reviews of Qualitative Research (CERQual) Approach²⁴ was used to assess the level of confidence (high, moderate, low, and very low) for the main themes and subthemes from the meta-synthesis (eAppendix 3, supplementary material, available at <https://academic.oup.com/ptj>). The level of confidence was graded on the basis of 4 major criteria: methodological limitations, relevance, adequacy of data, and coherence.²⁴ Themes/subthemes were rated as “high” confidence if the contributing studies were scored with minor concerns related to methodological limitations, but scored high in relevance, coherence, and adequacy. Themes/subthemes were rated as “low” confidence if the contributing studies were scored with major concerns related to methodological limitations and/or scored low in adequacy criterion. Themes/subthemes from studies with mixed scores for all the 4 major criteria were graded as “moderate” confidence. H.D. conducted the critical appraisal process of the review findings in an

Excel spread sheet (Microsoft Corp, Redmond, Washington), which was verified by M.A.P.

Results

Identification of Studies

Our electronic search yielded 3995 articles. Following the removal of duplicates, 2626 articles were retained for further screening. After title, abstract, and full-text screening, 33 articles from 33 studies^{25–57} were included for final synthesis (Fig. 1).

Description of Included Studies

A summary of the included studies is presented in Table 1. In total, 512 participants of both sexes, with a variety of chronic pain conditions (eg, primary pain,^{25–27,29,31–37,40–48,5–57} musculoskeletal pain,^{28,39} orofacial pain,³⁸ provoked vestibulodynia,³⁰ migraine⁴⁹) were interviewed. Studies were predominantly conducted in high-income countries such as the United Kingdom (n = 12),^{35,36,38,39,41–45,49,55} Europe (n = 9),^{25,31,32,37,40,50,52,53,57} United States of America (n = 4),^{27,34,46,47} Australia (n = 4),^{26,32,48,56} and Canada (n = 3).^{29,30,51} Four studies used mixed-method design,^{28,36,39,44} the remaining used a qualitative design only. Two studies used focus groups^{27,53} and 31 used individual interviews for data collection.

Description of Self-Management Interventions

Self-management interventions comprised a wide range of strategies, but predominantly focusing on active approaches (eg, pacing, relaxation, cognitive behavioral strategies, counseling, and ergonomic advice), along with some passive approaches (eg, education). No study bar one²⁹ provided additional support via booster sessions. For 3 studies,^{33,42,43} the interventions were ongoing (eg, patients attending a community choir,⁴² multidisciplinary clinics,⁴³ and use of a self-management website³³), so it was difficult to interpret the long-term effects. In the remaining 30, data were collected between 0 and 72 months after the completion of the intervention.

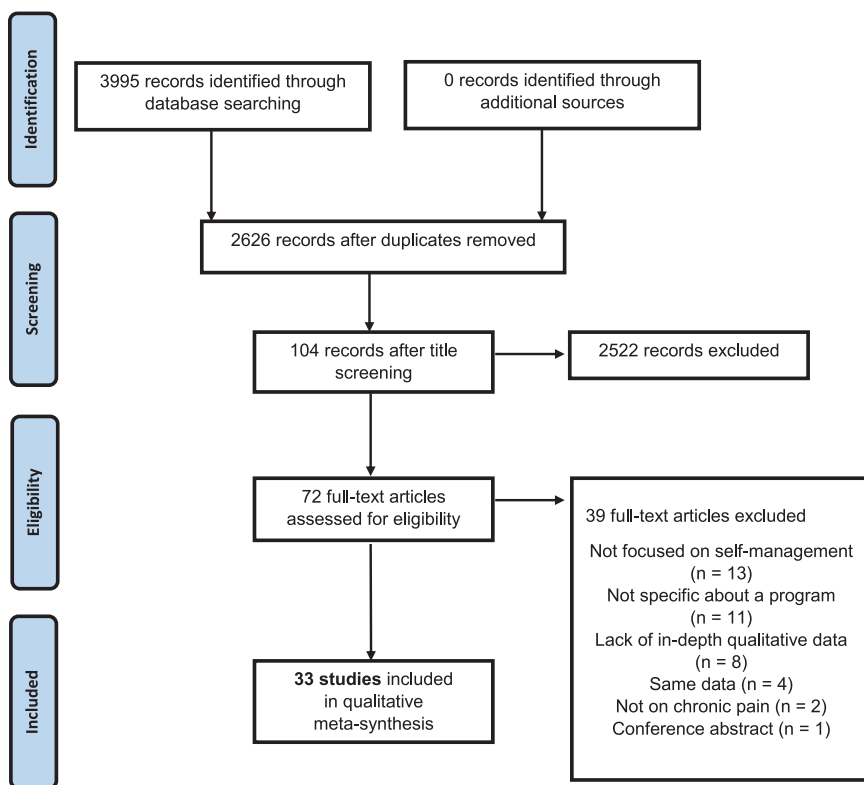


Figure 1.
Study selection process.

Quality Assessment

Results of the quality appraisal of included studies are presented in Table 2. The percentage agreement between H.D. and M.A.P. was substantial; the adjusted kappa statistic (κ) was 0.79 (95% CI = 0.69–0.88). Nine studies^{32,41,42,45,49–51,55,57} met all of the 10 CASP appraisal items. Four studies^{28,39,53,54} failed to meet 4 or more of the CASP items. Except for 5 studies,^{32,46,50,55,57} the majority of studies did not explicitly state the relationship between the researcher's influence on study design and data analysis and scored poorly for the reflexivity question (CASP item 6).

Summary of Thematic Synthesis

Table 3 describes the key themes, sub-themes and supporting quotes along with level of confidence based on CERQual assessment (see supplementary material) from the 33 studies. Figure 2 presents the visual framework of enablers and barriers

to self-management. The framework illustrated that the ability to self-manage chronic pain could be described as a continuum with individuals exhibiting varying levels of ability. Shifts in ability to self-manage were not necessarily gradual along the continuum. These shifts encompassed changes at the personal (cognitive and behavioral strategies) level, and were influenced by external inputs (ie, clinicians, family, friends, and work) and the systems in which individuals worked or lived (Fig. 2).

Enablers to Self-Management

Theme 1: self-discovery. Self-discovery or the ability to distinguish self (ie, body, thoughts, and feelings) from pain, was a key cognitive process perceived by participants to change their relationship from “struggling with pain” to “coping with pain.”^{25,26,28–33,35–37,39–42,44,45,47,48,51–53,55–57} Understanding the biopsychosocial nature and mechanisms underpinning chronic pain via education and peer

learning^{30–32,34,35,37,38,45,47,51,53–55,57} provided an explanation for their pain and was perceived to be critical for changing core beliefs about pain and provided stress relief.^{28,34,39–41,45,54} Their change in relationship to pain was reported as an ongoing “trial and error” process where strategies (eg, knowledge, pacing, cognitive techniques) learned from the intervention were tested and tried during and following the intervention.^{28–30,32,34,35,37,39–43,45–48,51,52,55,57} Positive experiences from trying new strategies acted as a catalyst for individuals to consistently try those new strategies and acted as a positive reinforcement to further self-reflect and change their relationship with pain. The new awareness also enabled them to be “in the present,” which brought them a sense of calmness and integration between their mind and body.

Theme 2: feeling empowered. Feeling empowered was critical for applying the skills learned during the intervention in to practice and regaining a sense of control.^{25,28–37,39–46,48,49,52,53,55,57} For example, the self-management strategies learned acted as “tools”^{43(p209)} to self-manage symptoms. Accepting pain as part of their self and acknowledging the fact that it was possible to live life despite pain was integral to regain control of their lives.^{28–30,32,34,35,37,38,40–42,45–48,53,55–57} Level of acceptance was also a continuum with individuals shifting from “finding a complete fix or becoming pain free” to “accepting pain as part of self” on a momentary basis.⁵⁸ Being physically present with similar others in a group setting was empowering, as it provided a sense of normality and helped individuals to feel less isolated.^{25,27–30,32–46,48,53,55,57} They acknowledged the shared learning, opportunities for being listened to in an empathetic environment, peer validation, and being motivated by others, fostering positive role modeling.

Theme 3: supportive ambience. A supportive ambience from clinicians, family, friends, and work environment positively influenced “self-discovery” and made individuals “feel empowered” to continue to use the strategies following the intervention. A

Table 1.
Summary of Included Studies^a

| Study (Country) | Data Collection Methods | Participants | Intervention | Self-Management Strategies Used |
|--|-----------------------------------|--|---|---|
| Andersen et al,²⁵ 2014 (Denmark) | Individual interviews (immediate) | N = 7 Mean age: 47 y Sex: 3 F, 4 M Chronic primary pain ^b | Exercise Education Activity pacing Use of medications Nutrition | Problem solving Self-efficacy building Self-monitoring of symptoms Goal setting and action planning |
| Andrews et al,²⁶ 2015 (Australia) | Individual interviews (3–6 mo) | N = 8 Mean age: 41 y Sex: 6 F, 2 M Chronic primary pain | Pain neurophysiology education Pacing Graded activity Activity scheduling | Self-tailoring Self-efficacy building Self-monitoring of symptoms Proactive follow-up |
| Bair et al,²⁷ 2009 (USA) | Focus groups (immediate) | N = 18 Mean age: 55 y Sex: 11 F, 6 M Ethnicity: White = 13 African American = 4 Others = 1 Chronic primary pain | Goal setting and problem solving Dealing with emotions Sleep education Activity pacing Relaxation/deep breathing Distraction, managing flare-ups | Problem solving Goal setting and action planning Self-efficacy building Self-tailoring Shared decision making |
| Barlow et al,²⁸ 2009 (UK) | Individual interviews (8 y) | N = 10 Chronic musculoskeletal pain | Overview of self-management principles Education Communication strategies and goal setting Self-efficacy building | Problem solving Goal setting and action planning Self-efficacy building Self-tailoring |
| Bourgault et al,²⁹ 2015 (Canada) | Individual interviews (6–9 mo) | N = 16 Chronic primary pain | Exercise CBT skills Homework Relaxation techniques | Problem solving Goal setting and action planning Self-efficacy building Self-tailoring |
| Brotto et al,³⁰ 2013 (Canada) | Individual interviews (12–18 mo) | N = 14 Mean age: 40 y Sex: 14 F Ethnicity: 9 European 5 East Asian Provoked vestibulodynia | Pain neurophysiology CBT skills Mindfulness exercises Treatment manual Sex education/therapy | Problem solving Goal setting and action planning Self-efficacy building Self-tailoring |
| Buijs et al,³¹ 2009 (the Netherlands) | Individual interviews (immediate) | N = 20 Mean age: 46 y Sex: 11 F, 9 M Chronic primary pain | Workplace intervention Graded activity CBT skills (pain cognitions, coping) | Self-tailoring Goal setting Problem solving Self-monitoring of symptoms |
| Bunzli et al,³² 2016 (Ireland, Australia) | Individual interviews (3–6 mo) | N = 14 Mean age: 42 y Sex: 8 F, 6 M Chronic primary pain | Pain education Posture/movement retraining Functional integration Graded activity and coping strategies | Problem solving Self-efficacy building Shared decision making Collaborative patient and provider views |
| Caiata Zufferey and Schulz,³³ 2009 (Switzerland) | Individual interviews (6 mo) | N = 18 Age range: 28–72 y Sex: 9 F, 9 M Chronic primary pain | Patient-centered website on CLBP Education Videos/pictures of exercises Interactive online discussion forums Patient's stories | Goal setting and action planning Self-efficacy building Self-tailoring Access to resources |
| Day et al,³⁴ 2011 (USA) | Individual interviews (immediate) | N = 28 (CBT group) Chronic primary pain | Education CBT skills Relaxation, positive coping Expressive writing Assertive communication | Self-tailoring Goal setting Problem solving Self-monitoring |
| Doran,³⁵ 2014 (UK) | Individual interviews (6 mo) | N = 16 Age range: 33–66 y Sex: 11 F, 5 M Chronic primary pain | Mindfulness in daily life Mindful movement practice Mindfulness-based meditation techniques | Problem solving Self-tailoring Goal setting Self-monitoring and follow-up |

(Continued)

Chronic Pain and Self-Management Review

Table 1.

Continued

| Study (Country) | Data Collection Methods | Participants | Intervention | Self-Management Strategies Used |
|--|---------------------------------------|---|--|--|
| Duggan et al,³⁶ 2015 (UK) | Individual interviews (1 mo) | N = 10 Mean age: 50 y Sex: 5 F, 5 M Chronic primary pain | Use of SMART2 system/mobile Daily step counts, mood and pain levels ACT Interactive text boxes to record thoughts Auditory and visual alerts to start activities | Self-tailoring Self-monitoring (pain and mood) Goal setting Self-efficacy building |
| Furnes et al,³⁷ 2015 (Norway) | Individual interviews (NS) | N = 12 Mean age: 52 y Chronic primary pain | CBT-based training Social skills training and therapeutic writing Physical activity | Self-tailoring Self-monitoring Problem solving Follow-up |
| Goldthorpe et al,³⁸ 2016 (UK) | Individual interviews (2 wk) | N = 17 Age range: 41 y Sex: 16 F, 1 M Chronic orofacial pain | CBT-based intervention Lifestyle changes Behavioral activation (diary and workbook) Cognitive restructuring | Problem solving Self-tailoring Goal setting Self-monitoring of symptoms |
| Hainsworth and Barlow,³⁹ 2001 (UK) | Individual interviews (0, 6 wk, 6 mo) | N = 21 Median age: 58 y Chronic musculoskeletal pain | Self-help principles Exercise Cognitive symptom management Setting goals | Problem solving Peer mentoring Goal setting Self-efficacy building Proactive follow-up |
| Hallstam et al,⁴⁰ 2015 (Sweden) | Individual interviews (1 y) | N = 14 Mean age: 46 y Sex: 1F, M Wide range of pain conditions | Multimodal rehabilitation program ACT Physical activity training Pharmacological counseling | Self-efficacy building Self-monitoring of negative thoughts Proactive follow-up Self-tailoring |
| Harrison,⁴¹ 2012 (UK) | Individual interviews (NS) | N = 12 Mean age: 50 y Sex: 1F, M Ethnicity: 10 British 1 French 1 Caribbean Wide range of pain conditions | ACT and mindfulness-based meditation Pain/stress management Assertiveness Sleep hygiene Coping strategies Employment issues | Self-efficacy building Goal setting Problem solving Self-monitoring of negative thoughts Self-tailoring |
| Hopper et al,⁴² 2016 (UK) | Individual interviews (immediate) | N = 7 Age range: 44–79 y Sex: 6 F, 1 M Chronic primary pain | Patient-led community choir | Patient-led community choir Problem solving Shared decision making Follow-up |
| Howarth et al,⁴³ 2014 (UK) | Individual interviews (> 1 y) | N = 17 Age range: 22–82 y Chronic primary pain | Person-centered care Emotional support Shared decision making Mutual trust and understanding Collaboration and sensitivity | Shared decision making Self-efficacy building Mutual collaboration of patient and clinician views Problem solving |
| Hurley et al,⁴⁴ 2010 (UK) | Individual interviews (immediate) | N = 23 Mean age: 68 y Sex: 15 F, 8 M Ethnicity: 18 Caucasian 4 Black Caribbean 1 Indian Chronic primary pain | Education: cause, consequence, prognosis, coping strategies, problem-solving skills Exercise: strength, balance, coordination | Problem solving Shared decision making Self-efficacy building Goal setting |
| Mathias et al,⁴⁵ 2014 (UK) | Individual interviews (immediate) | N = 6 Age range: 46–64 y Sex: 6 F Ethnicity: White British Chronic primary pain | CBT-based training Mindfulness and ACT Pain education Pacing Exercise/movement | Self-efficacy building Self-monitoring of negative thoughts Follow-up Self-tailoring |

(Continued)

Table 1.

Continued

| Study (Country) | Data Collection Methods | Participants | Intervention | Self-Management Strategies Used |
|---|--|--|--|--|
| Matthias et al,⁴⁶ 2016 (USA) | Individual interviews (immediate) | N = 17 Mean age: 58 y Sex: 17 M Ethnicity: White = 9 Black = 8 Chronic primary pain | Pain education Activity pacing Relaxation Self-care skills Relapse prevention Informational resources | Self-efficacy building Self-monitoring Goal setting and action planning Shared decision making Problem solving Self-tailoring |
| Matthias et al,⁴⁷ 2012 (USA) | Individual interviews (immediate) | N = 23 Mean age: 58 y Sex: 17 M Ethnicity: White = 9 Black = 8 Chronic primary pain | Steps 1 and 2 (12 wk) Patient education Handling flare-ups Relaxation Pacing Brief CBT and reflection | Self-efficacy building Self-monitoring Goal setting and action planning Shared decision making Problem solving Self-tailoring |
| Moore and Martin,⁴⁸ 2015 (Australia) | Individual interviews (8–50 mo) | N = 17 Mean age: 55 y Sex: 14 F, 3 M Chronic primary pain | Mindfulness-based CBT Encouraging adaptive ways of dealing with negative experiences instead of reacting to those negative experiences | Self-efficacy building Self-monitoring of symptoms Goal setting and action planning Self-tailoring |
| Morgan et al,⁴⁹ 2016 (UK) | Individual interviews (immediate) | N = 20 Mean age: 43 y Sex: 14 F, 6 M Ethnicity: 3 = Black/mixed Rest = NS Chronic migraine | CBT Breathing techniques Progressive muscle relaxation | Self-monitoring of symptoms Problem solving Proactive follow-up (4 mo) Self-tailoring |
| Nordin et al,⁵⁰ 2013 (Sweden) | Individual interviews (4 mo–3 y) | N = 17 Mean age: 46 y Sex: 14 F, 3 M Chronic primary pain | CBT Physical activity training Ergonomics and functional training Pharmacological counseling Patient education and mindfulness | Self-efficacy building Self-monitoring of negative thoughts Proactive follow-up Self-tailoring |
| O'Hagan et al,⁵¹ 2013 (Canada) | Individual interviews (NS) | N = 16 Age range: 28–64 y Sex: 6 F, 10 M Chronic primary pain | Development of coping strategies Exercise Counseling and education Worksite intervention and ergonomic support | Goal setting Problem solving Self-efficacy building Shared decision making Mutual collaboration of patient and therapist views |
| Oosterhof et al,⁵² 2014 (the Netherlands) | Individual interviews (immediate) | N = 16 Mean age: 48 y Sex: 12 F, 4 M Chronic primary pain | CBT-based training Pain education | Problem solving Goal setting Self-monitoring of symptoms Shared decision making |
| Steihaug et al,⁵³ 2002 (Norway) | Focus groups (immediate) | N = 24 Age range: 24–54 y Sex: all F Ethnicity: NS Chronic primary pain | Movement awareness Relaxation and postural awareness Group discussions on pain education Reflections of self-management strategies | Shared decision making Monitoring of symptoms Self-tailoring Problem solving |
| Subramaniam et al,⁵⁴ 1999 (New Zealand) | Individual interviews (immediate and 5 mo) | N = 13 Mean age: 53 y Sex: all F Chronic primary pain | Shared reflections of participants Formal and informal group discussions Monthly newsletter on pain management Organized walks, counseling, and support | Peer mentoring Shared decision making Monitoring of symptoms Problem solving Proactive follow-up |

(Continued)

Table 1.

Continued

| Study (Country) | Data Collection Methods | Participants | Intervention | Self-Management Strategies Used |
|--|--|---|---|---|
| Toye and Barker,⁵⁵ 2012 (UK) | Individual interviews (pre, post, and 1 y) | N = 20 Mean age: 52 y Sex: 13 F, 7 M Ethnicity: NS Chronic primary pain | CBT-based program Group discussions Pacing Relaxation Sleep hygiene Counseling | Goal setting Problem solving Self-monitoring of symptoms Proactive follow-up |
| Van Huet et al,⁵⁶ 2009 (Australia) | Individual interviews (2–3 y) | N = 15 Age range: 30–65 y Sex: 11 F, 4 M Chronic primary pain | CBT-based program Activity pacing Education | Goal setting Problem solving Self-monitoring of symptoms Proactive follow-up |
| Werner et al,⁵⁷ 2003 (Norway) | Individual interviews (immediate) | N = 6 Age range: 31–53 y Sex: 6 F Chronic primary pain | Movement training Movement awareness Relaxation and postural awareness Group discussions on pain education Reflection | Shared decision making Monitoring of symptoms Self-tailoring Problem solving |

^aACT = acceptance and commitment-based therapy, CBT = cognitive-behavioral therapy, CLBP = chronic low back pain, F = female, M = male, NS = not stated, UK = United Kingdom, USA = United States.

^bChronic primary pain included any of the following conditions: chronic back pain, neck pain, knee pain, and fibromyalgia.

collaborative partnership with clinicians (ie, therapeutic alliance) was paramount for developing the ability to maintain ongoing self-management.^{27,32,34,40,43,44,46,49,50,52,55} A strong therapeutic alliance was achieved via open and nonjudgmental communication, being believed and listened to, valuing the person and person centeredness by means of shared decision making and guided problem solving. Being believed and understood by significant others (family and friends) was also crucial for maintaining self-management.^{30,38,40} Active participation of significant others in the intervention fostered understanding and was perceived to be beneficial for continued self-management in home.³⁰ Furthermore, a supportive work environment (eg, symptom legitimization and work place modification) empowered individuals with chronic pain and facilitated ongoing self-management.⁴³

Barriers to Self-Management

Theme 4: sustained motivation. As self-managing chronic pain occurs on a day-to day basis, the practical challenges such as the dedication of time, associated with cognitive behavioral techniques

were perceived as barriers to self-manage. Practicing not thinking about pain often resulted in mental conflict, which reportedly increased their focus on pain instead of helping them to cope; and this was particularly difficult during flare-ups of pain.^{48,49} For some, inability to practice self-management strategies made them feel guilty, which led to self-criticism and self-dislike.^{30,35,36,48,55,57} In addition, accepting pain as part of “self” was perceived as an act of surrender, with pain being in control.^{26,27,30–32,35,36,41,48,55–57} The term and action of “acceptance” seemed counterintuitive, especially for those who held fixed biomedical beliefs toward their pain; thus, these participants continued to battle against pain by focusing on fixing their pain (ie, pain reduction/resolution) and consequently perceived the intervention as “unhelpful.”^{30,44,46,48,49,51,52,56} For some, letting go of biomedical beliefs was a constant battle.³²

Theme 5: distress. The distress experienced from ongoing pain, stress, fatigue, anxiety, and depression negatively influenced the self-management abilities of participants following the intervention.^{27,30,32,33,36,40,41,47–52,55} The above psychological stressors, along

with daily efforts to self-manage chronic pain, cumulatively influenced their pain experience, and ultimately exerted a negative impact on their ability to self-manage (Fig. 2). For some, due to fear of pain and/or reinjury, they continued to be fear avoidant and perceived using the strategies learned from the intervention (eg, pacing) as not useful.^{27,32,51,55} A few studies reported participants saying that symptoms of depression influenced their problem-solving abilities and compounded their sustained efforts to manage their chronic pain after intervention completion.^{27,31,48,50}

Theme 6: unsupportive ambience. An unsupportive ambience could also act as a stressor and make the ongoing self-management efforts overwhelming as well as undermine individuals’ ability to self-manage. In particular, conflict with clinicians was felt as a major barrier to engage in the self-management process.^{27,29,31,32,38,43,48,50,52,56} In addition, poor explanation for their symptoms, conflicting views provided by different clinicians, feeling like they were not being listened to, and that clinicians were skeptical of their symptoms created a poor relationship.

Downloaded from https://academic.oup.com/ptj/article/98/5/381/4925494 by guest on 23 April 2024

Table 2.

Determination of Risk of Bias of Included Studies Using Critical Appraisal Skills Program (CASP) Checklist^a

| Study | Aims | Method | Research Design | Sampling | Data Collection | Reflexivity | Ethical Issues | Data Analysis | Findings | Value of Research |
|--|------|--------|-----------------|----------------|-----------------|----------------|----------------|----------------|----------------|-------------------|
| Andersen et al, ²⁵ 2014 | Y | Y | Y | Y | Y | ? | Y | Y | Y | Y |
| Andrews et al, ²⁶ 2015 | Y | Y | N | Y | Y | ? | Y | Y | Y | Y |
| Bair et al, ²⁷ 2009 | Y | Y | Y | Y | Y | ? | Y | Y | Y | Y |
| Barlow et al, ²⁸ 2009 ^c | Y | Y | N | N | Y | ? | Y | ? | ? | Y |
| Bourgault et al, ²⁹ 2015 ^c | Y | Y | Y | Y | Y | ? | Y | Y | N | N |
| Brotto et al, ³⁰ 2013 | Y | Y | Y | Y | Y | ? | Y | Y | Y | Y |
| Buijs et al, ³¹ 2009 | Y | Y | Y | Y | Y | ? | Y | Y | Y | Y |
| Bunzli et al, ³² 2016 | Y | Y | Y | Y | Y | Y ^b | Y | Y | Y | Y |
| Caiata Zufferey and Schulz, ³³ 2009 | Y | Y | Y | Y | Y | ? | ? ^b | Y | Y | Y |
| Day et al, ³⁴ 2011 | Y | Y | Y | Y | Y | ? | Y | Y | Y | Y |
| Doran, ³⁵ 2014 | Y | Y | Y | Y | Y | ? | Y | N ^b | Y | Y |
| Duggan et al, ³⁶ 2015 | Y | Y | Y | ? | Y | ? | Y | Y | Y | Y |
| Furnes et al, ³⁷ 2015 | Y | Y | Y | ? ^b | Y | ? | Y | Y | Y | Y |
| Goldthorpe et al, ³⁸ 2016 | Y | Y | Y | Y | Y | ? | Y | Y | Y | Y |
| Hainsworth and Barlow, ³⁹ 2001 ^c | Y | Y | Y | Y | Y | ? | Y | N | N ^b | N ^b |
| Hallstam et al, ⁴⁰ 2015 | Y | Y | Y | Y | Y | ? | Y | Y | Y | Y |
| Harrison, ⁴¹ 2012 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Hopper et al, ⁴² 2016 | Y | Y | Y | Y | Y | Y | Y | ? | Y | Y |
| Howarth et al, ⁴³ 2014 | Y | Y | Y | Y | Y | ? ^b | Y | Y | Y | Y |
| Hurley et al, ⁴⁴ 2010 | Y | Y | Y | Y | Y | ? ^b | Y | Y | Y | Y |
| Mathias et al, ⁴⁵ 2014 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Matthias et al, ⁴⁶ 2016 | Y | Y | Y | Y | Y | Y ^b | Y | Y | Y | Y |
| Matthias et al, ⁴⁷ 2012 | Y | Y | Y | Y | Y | ? | Y | Y | Y | Y |
| Moore and Martin, ⁴⁸ 2015 | Y | Y | Y | Y | Y | ? | Y | Y | N ^b | N ^b |
| Morgan et al, ⁴⁹ 2016 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Nordin et al, ⁵⁰ 2013 | Y | Y | Y | Y | Y | Y ^b | Y | Y | Y | Y |
| O'Hagan et al, ⁵¹ 2013 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Oosterhof et al, ⁵² 2014 | Y | Y | Y | N ^b | Y | ? | Y | Y | Y | Y |
| Steihaug et al, ⁵³ 2002 | Y | Y | ? ^b | N ^b | ? | ? | ? | Y | Y | Y |
| Subramaniam et al, ⁵⁴ 1999 ^c | Y | Y | Y ^b | ? ^b | ? | Y | Y | ? ^b | ? ^b | Y |
| Toye and Barker, ⁵⁵ 2012 | Y | Y | Y | Y | Y | Y ^b | Y | Y | Y | Y |
| Van Huet et al, ⁵⁶ 2009 | Y | Y | Y | Y | Y | ? | Y | Y | Y | Y |
| Werner et al, ⁵⁷ 2003 | Y | Y | Y | Y | Y | Y ^b | Y | Y | Y | Y |

^aN = no, Y = yes, ? = unable to determine.^bScored after mutual discussion.^cMixed-methods study.

When self-management interventions were not flexible enough for individual tailoring, this was also perceived as a barrier.^{25,27,30,33,36,37,41,49,50,52,57} Limited understanding of the context of individuals' lives and a lack of collaborative environment impeded participation in the intervention and negatively influenced clinical

outcomes. In addition, individuals felt that it was difficult for significant others (family and friends) to acknowledge the ongoing struggle in self-managing pain, owing to the invisible nature of pain, and this acted as a barrier.^{27,30,57} Sometimes, well-intended advice from friends and family was not considered helpful, and

could even be seen as blaming. This led to resentment and relationship conflict.

Discussion

The primary purpose of this meta-synthesis was to explore the perceptions of individuals with chronic pain toward enablers and barriers of

Chronic Pain and Self-Management Review

Table 3.
Critical Appraisal of Review Findings Using CERQual Evaluation^a

| Themes/Subthemes ^a | Supporting Quotes From Included Studies | Level of Confidence ^b | Explanation of CERQual |
|---|--|----------------------------------|--|
| Enablers to Self-Management | | | |
| Theme 1: self-discovery | <p>"I still get depressed but I realize why now, and I know that if I don't get myself motivated then I'm going into the pain cycle." [Barlow et al^{28(p131)}]</p> <p>"I realised how stiff I moved ... holding your breath, moaning as you did something ... totally unknown to myself." [Bunzli et al^{32(p17)}]</p> <p>"I don't have the negative tapes going on in my head that I'm a bad person as much anymore. So I think that has helped my positive outlook on myself. So yeah. my self-esteem, my self-awareness I think is better." [Brotto et al^{30(p8)}]</p> | High | 26 studies from 11 countries with minor to significant methodological limitations. Minor concerns in relevance due to differences in study settings and time frame of data collection. High coherence. Thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Understanding the biopsychosocial nature of pain (subtheme) | <p>"I'm understanding what it [pain] is and it's not damage, and when you don't understand what something is you worry about it more" [Mathias et al^{45(p286)}]</p> <p>When there is something going on in someone's life you know it can manifest in any area ... there is more to it than just the structure." [Bunzli et al^{32(p14-15)}]</p> | Moderate | 14 studies from 9 countries with minor to significant methodological limitations. Minor concerns in coherence across studies. Fairly thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Process of change: change in relationship with pain (subtheme) | <p>"When I went on the course, I realized I might not be able to change the pain or the external reality of living with the pain. I could change how I related to the pain and the way that I thought about it." [Doran^{35(p5)}]</p> <p>"At the beginning of the intervention, I realized that my pain was like a budget. I understood that I will always have the same amount of money but I will now manage it differently. This is really different. When you manage your pain, it is less present, less intense." [Bourgault et al^{29(p19)}]</p> | High | 20 studies from 8 countries with minor to significant methodological limitations. Thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). High coherence. |
| Sense of integration of mind and body (subtheme) | <p>"You know, the medicine and the exercises help, but there's also that thing called your head. You know, sometimes you think the mind works but the body don't. Well, sometimes you can train your mind ... to train the body." [Matthias et al^{47(p575)}]</p> <p>"It was only later on, coming to the course, that I actually felt this sense of integration between my body and my mind, and I was able to work on myself in a more holistic way." [Doran^{35(p7)}]</p> | Low | 6 studies from 4 countries with moderate to significant methodological limitations. Moderate concerns in relevance as the interventions were poorly described or the focus was on a single intervention. High coherence. Fairly thick data but limited number of studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Self-compassion (subtheme) | <p>"I'm patting myself on the back for coping with it [pain] because I'd rather beat myself up and blame myself for things" [Mathias et al^{45(p229)}]</p> <p>"Before I used to think it was wrong that I couldn't do it and that I should be able to do this. I did used to beat myself up quite a bit ... but now I just take each day as it comes and I don't beat myself up if what I did yesterday I can't do today." [Harrison^{41(p74)}]</p> | Moderate | 7 studies from 4 countries with minimal to significant methodological limitations. High coherence and relevance. Fairly thick data but limited number of studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Theme 2: feeling empowered | <p>"I think that we likened it to that they were giving you tools—as you went along—you were given a tool box and all these things that went into it were tools that I could take away at the end of the course." [Howarth et al^{43(p209)}]</p> <p>"And I didn't think, you know there was going to be much happiness because I was dealing with this pain, and now it's—I can see that there are tools that I can use to cope with it, that I can move on." [Brotto et al^{30(p12)}]</p> | High | 25 studies from 10 countries with minor to significant methodological limitations. Minor concerns in relevance due to differences in study settings and time frame of data collection. High coherence. Thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Accepting pain as part of "self" (subtheme) | <p>"This is part of me but this isn't as I've said, it's not who defines me. It really isn't. I've got this pain and I live alongside it. It's not a separate entity it's within you and you have to accept it. Not as my best friend but it's there and my body, you know I used to think 'god my body's awful' because it's not doing this and it's not doing that but actually my body is trying its best and it heals itself." [Harrison^{41(p73)}]</p> <p>"I realize now that pain's something I'm gonna have to live with, probably the rest of my life, and it's not gonna stop me from being an active member of my family and community. There's things I can do. Before I was just sitting around discouraged, depressed." [Matthias et al^{47(p575)}]</p> | High | 19 studies from 7 countries with minor to significant methodological limitations. Minor concerns in relevance due to differences in study settings and time frame of data collection. High coherence. Fairly thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |

(Continued)

Table 3.

Continued

| Themes/Subthemes ^a | Supporting Quotes From Included Studies | Level of Confidence ^b | Explanation of CERQual |
|---|--|----------------------------------|--|
| Being with similar others (subtheme) | <p>"Motivation of others helped maintain my own motivation." [Bourgault et al^{29(p60)}]</p> <p>"It's just good to have someone to talk to and let you know that you're not alone." [Day et al^{34(p482)}]</p> <p>"... we formed very tightly knit group ... we were all trying to help one another, you know." [Hurley et al^{44(p7)}]</p> | High | 24 studies from 9 countries with minor to significant methodological limitations. High relevance. High coherence. Thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Theme 3: supportive ambience | "I think I got strength from feeling I was no longer mistrusted and not feeling I'd been declared an idiot. Instead, you were very very well received, spoken to by name and they (health care providers) remembered you." [Hallstam et al ^{40(p74)}] | Moderate | 11 studies from 5 countries with minor to significant methodological limitations. Minor concerns in relevance due to differences in study settings and intervention. High coherence. Downgraded due to moderate adequacy with fairly thick data from studies conducted mainly in high-income countries (Europe and North America). |
| Therapeutic alliance (subtheme) | "She was very active by suggesting other things. She really listened to me and came up with solutions; well, actually, she guided me to a solution." [Oosterhof et al ^{52(p1277)}] | Moderate | 4 studies from 3 countries with minor methodological limitations. Downgraded due to thin data and low number of studies conducted mainly in high-income countries (United Kingdom, Europe, and North America). |
| Support of significant others (friends, family, work) (subtheme) | "I gave this to my husband to read for example, he sees that I am not the only one so it is this problem for other people as well, so it is an illness, some sort of illness." [Goldthorpe et al ^{38(p461)}] | Low | 4 studies from 3 countries with minor methodological limitations. Downgraded due to thin data and low number of studies conducted mainly in high-income countries (United Kingdom, Europe, and North America). |
| Barriers to Self-Management | | | |
| Theme 4: sustained motivation | <p>"Thoughts and understanding [about pacing] were awesome. I picked it up and I really grasped it. The only problem I had was [laughs] putting those into practice ... I still do pace ... just sometimes it doesn't work." [Andrews et al^{26(p50)}]</p> <p>"I'd go, 'well, I don't want to think about it, I'm trying not to, but now I'm thinking about not thinking about that thing.'" [Moore et al^{48(p1249)}]</p> <p>"... Unless you're really seriously taking time to sit down and analyse it, I think it's quite hard to consciously separate thoughts and feelings. Consciously I think it's quite hard." [Morgan et al^{49(p4)}]</p> | Moderate | 16 studies from 7 countries with minor to moderate methodological limitations. Moderate concerns in relevance due to differences in intervention and time frame of data collection. High coherence. Fairly thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Struggle with pain acceptance (sub-theme) | <p>"For me the battle was as bad as the suffering, you're constantly not wanting to give into something, you're fighting it, you are not accepting it. When it's something that you don't want, you don't wanna be, it's really hard to accept that's how it's going to be." [Harrison^{41(p77)}]</p> <p>"When you're in pain, it's still very hard to let go of that (the concept of disc herniation) at times, and that will be a constant battle I think." [Bunzli et al^{32(p15)}]</p> | Moderate | 12 studies from 7 countries with minor to moderate methodological limitations. High relevance and coherence. Fairly thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Self-blaming (subtheme) | "I think my biggest hurdle has been the guilt of not sticking with it, like it's probably my own fault I'm not going to get better." [Brotto et al ^{30(p11)}] | Moderate | 6 studies from 4 countries with minor to moderate methodological limitations. High relevance and coherence. Fairly thick data but downgraded due to low number of studies and studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Theme 5: distress | <p>"Yeah, it [stress] will interfere with it [pain self-management]. I mean, when you are stressed out, you concentrate on what is causing the stress." [Bair et al^{27(p593)}]</p> <p>"I felt exhausted and it was really hard to participate in the team-conference meeting ... I just wanted to cry, and was not able to communicate the things I wanted to say." (woman, interview 9) [Nordin^{50(p583)}]</p> | Moderate | 14 studies from 8 countries with minor to moderate methodological limitations. Moderate concerns in coherence due to differences in the type of stressors reported across studies. High relevance. Fairly thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |

(Continued)

Table 3.

Continued

| Themes/Subthemes ^a | Supporting Quotes From Included Studies | Level of Confidence ^b | Explanation of CERQual |
|---|---|----------------------------------|---|
| Fear of pain (subtheme) | “It hurts and I am scared I am going to hurt it more.” [Bunzli et al ^{32(p20)}] “If I don’t push it too much ... lift things that are too heavy, things like that, the pain will be OK.” [O’Hagan ^{51(p1559)}] | Low | 4 studies from 5 countries with minor methodological limitations. High relevance and coherence. Downgraded due to low number of studies but fairly thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Impact of depression (subtheme) | “I just think sometimes depression gets the better of me I’m afraid. And it’s really hard to get over it.” [Moore et al ^{48(p1134)}] “Well, I mean, when you are depressed, you just don’t want to do nothing. You just want to ... I just want to lay there and just wallow in my pity.” [Bair et al ^{27(p593)}] | Low | 4 studies from 4 countries with minor to moderate methodological limitations. Moderate concerns in relevance due to differences in data collection methods and intervention. High coherence. Fairly thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Theme 6: un-supportive ambience (theme) | “My doctor just wants to push prescription after prescription, and I didn’t want to hide the pain, I wanted to fix it. So, you know, the different techniques, like the relaxation exercise, working, and gardening, anything ... I didn’t want to take a whole bunch of medicine.” [Bair et al ^{27(p593)}] | Moderate | 9 studies from 7 countries with minor to moderate methodological limitations. High coherence and relevance. Thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Conflict in therapeutic alliance (subtheme) | “I now keep some distance from the health professional ... I don’t believe in all the health professional tell me ... I have lost my respect and trust in the health professional, since I was not confirmed.” [Nordin et al ^{50(p287)}] | Moderate | |
| Lack of person centeredness (subtheme) | “But as far as the relaxation, like during the day trying to do the deep breathing or, you know, muscle relaxation, or any of that, I don’t know, I just ... I cannot shut it down. I just ... I cannot relax.” [Bair et al ^{27(p593)}] “For my part, I think they were much, much more ill than I was, and that’s fair enough, but they just weren’t the kind of people I wanted to be around, and I didn’t want to hear about their sickness stories.” [Andersen et al ^{25(p163)}] | High | 11 studies from 8 countries with minor to moderate methodological limitations. High coherence and relevance. Thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |
| Lack of support from significant others (subtheme) | “Poor people who’re trying to give me advice! It’ll make a large gap between us. First you’re to blame because you have pain, and second you’re to blame because you have chosen not to get well.” [Werner et al ^{57(p861)}] “All of these supervisors, they want you moving and doing stuff. I’d like to say, ‘Well, my back starts stiffening up or starts aching, I gotta find time to stretch.’ Sometimes they are not real understanding in that.” [Bair et al ^{27(p593)}] | Low | 3 studies from 3 countries with minor methodological limitations. High coherence and moderate relevance. Downgraded due to low adequacy but fairly thick data from studies conducted mainly in high-income countries (Europe, North America, and Oceania). |

^a Studies were downgraded in the Confidence in the Evidence from Reviews of Qualitative Research (CERQual) evaluation mainly due to concerns in relevance (eg, differences in study settings and time of data collection following the program) and adequacy (ie, low number of studies supporting the review findings and results of studies from participants in high-income countries).

^b High confidence means that it is highly likely that the review finding is a reasonable representation of the phenomenon of interest; moderate confidence means that it is likely that the review finding is a reasonable representation of the phenomenon of interest; low confidence means that it is possible that the review finding is a reasonable representation of the phenomenon of interest; very low confidence means that it is not clear whether the review finding is a reasonable representation of the phenomenon of interest.

incorporating self-management strategies into daily life after completing a self-management intervention. The key enablers to self-management included self-discovery and feeling empowered by practicing learned strategies. While the barriers included the sustained motivation required to self-manage in the presence of distress from ongoing pain, stress, and depression. Having

a collaborative partnership with clinicians and support from family, friends, and work environment acted as an enabler as well as a barrier to ongoing self-management.

Self-discovery or distinguishing self (ie, body, thoughts, and feelings) from pain was perceived as a critical cognitive process, which enabled participants to

alter their relationship with pain, facilitate embodied awareness, and develop self-compassion. A recent systematic review specifically investigating the changes in “self,” reported that the ability to decentralize and view “self” as distinct from pain was associated with improved emotional outcomes, including reduced depression in people with chronic pain.⁵⁹ The ability to view

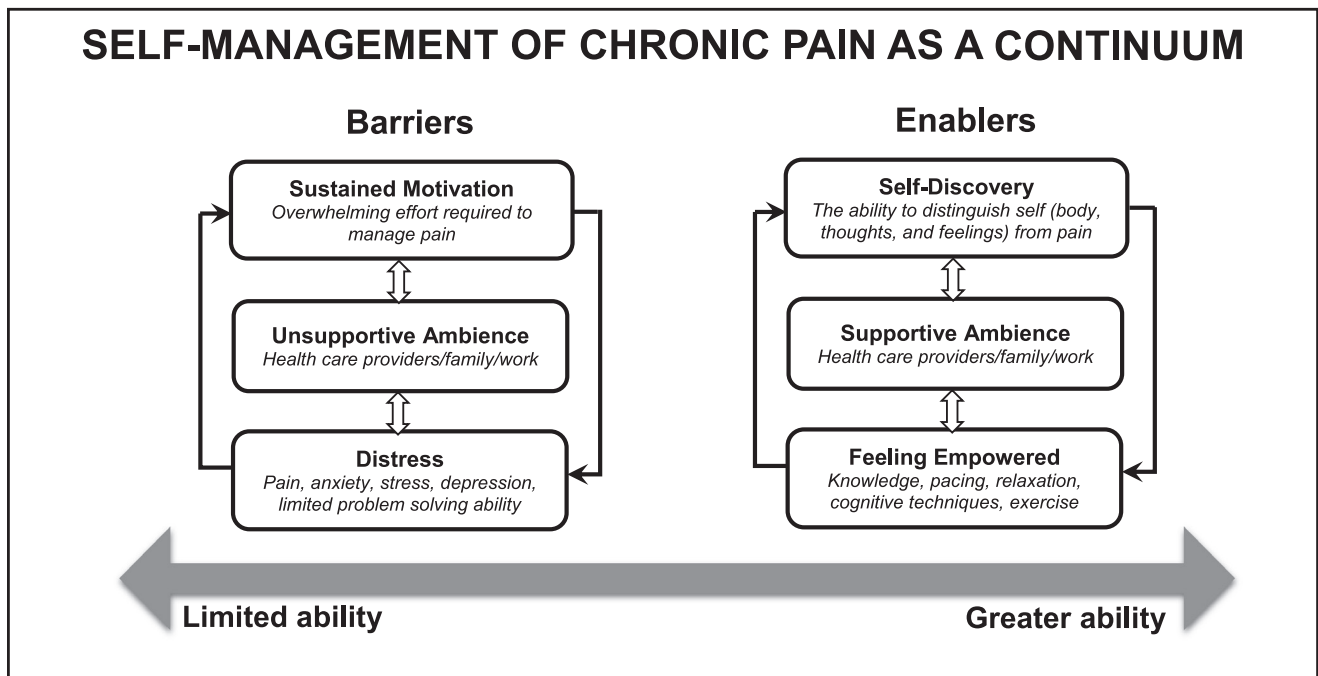


Figure 2.

Framework illustrating the ability to self-manage chronic pain as a continuum with individuals with chronic pain exhibiting various levels of ability. Shifts in the ability to self-manage on a daily basis was influenced by the identified barriers and enablers.

“self” in the context of pain is akin to the “contextual self” model of psychological flexibility.⁶⁰ On the basis of this conceptual model, self-as-context is the perspective with which the individual can differentiate one’s “self” from psychological experiences (eg, thoughts, emotions, and feelings).⁶⁰ Preliminary work to measure self-as-context via the Self Experiences Questionnaire showed evidence for content and construct validity,⁶¹ suggesting the possibility to assess changes in “self” in people with chronic pain.

Feeling empowered by means of practicing core self-management skills (eg, guided problem solving, goal setting, and self-tailoring) in the described interventions engendered confidence to manage pain as well as the ability to control one’s behavior (ie, self-efficacy). Self-efficacy beliefs act as a resilient belief system⁶² and are shown to be an important mediator to minimize pain-related physical and psychosocial disability⁶³ as well as influence long-term behavioral change in people with

chronic pain.⁶⁴ Furthermore, being with similar others in a supportive group environment during the intervention facilitated mutual sharing and learning from each other’s individual experiences and enabled problem solving and self-efficacy to practice strategies learned from the intervention.

Accepting pain as part of “self” and continuing to practice self-management strategies despite pain is an ongoing process and critical for developing the ability to distinguish “self” from pain and develop self-efficacy. Cognitive behavioral interventions, such as Acceptance and Commitment Therapy have shown improved functional outcomes in people with chronic pain.⁶⁵ However, our results from this meta-synthesis suggest that acceptance is not a straightforward process in people with chronic pain, and is akin to the experiences of people with other long-term health conditions.^{66,67} In other words, accepting to live well with chronic pain, is an ongoing process and participants fluctuated along a spectrum on a momen-

tary basis.⁶⁸ Moreover, the degree of acceptance was interdependent on other cognitive processes such as the ability to view “self” in context, self-efficacy, and influences of daily stressors.⁶⁹

Our results suggest a possible relationship between self-discovery, self-efficacy, and acceptance as drivers of optimal self-management. As illustrated in Figure 2, there is potential for a bidirectional relationship between one’s ability to view “self” in context (self-discovery) and the confidence to implement strategies learned from the intervention (self-efficacy) into daily life. Concurrently, these strategies may positively influence the degree of accepting the new “self” with pain and along with support from family, friends, and clinicians could positively influence the ability to self-manage and facilitate meaningful participation in life despite pain. Previous studies on people with chronic pain suggested that self-efficacy was an important predictor for physical disability influencing functional outcomes, while acceptance was an

important predictor for emotional outcomes such as depression.⁷⁰ Further, people with primary musculoskeletal pain who had better pain acceptance also reported higher self-efficacy and continued to engage in valuable activities.^{71,72} The conceptual similarities and interrelationships of these psychological constructs have been debated⁶⁸ and due to the dynamic nature of these constructs, the ability to measure change presents a challenge; nevertheless, the results from our meta-synthesis highlight the complex but overlapping influence of these processes in positively influencing self-management abilities.

Distress experienced from ongoing pain, depression, and stress associated with chronic pain was perceived as a major barrier to ongoing self-management. There is high prevalence of depression in people with chronic pain,⁷³ and people with chronic pain experiencing depression are less likely to engage in active self-management strategies, such as exercises.⁷⁴ Furthermore, 1 of the included studies from our review suggested that managing depression via antidepressants as part of self-management intervention facilitated improved engagement in the self-management intervention by enabling participants' to focus on practicing the strategies learned from the intervention.²⁷ While the current review focused mainly on exploring active nonpharmacological approaches for self-managing chronic pain, it is argued that medications could be a useful adjunct, when used judiciously, to support ongoing pain self-management.⁷

Supportive ambience in the form of a therapeutic alliance with clinicians acted as an enabler as well as a barrier to ongoing self-management. Previous reviews have consistently reported the necessity of a strong therapeutic alliance for gaining patient confidence and enabling self-management.^{14,75} Adopting self-management principles in clinical decision making appears to be a bidirectional process between patients and clinicians. A previous meta-synthesis exploring clinicians' views on adopting self-management principles in clinical practice suggests that acknowledging

patients as knowledgeable and experts of their own health condition enabled shared decision making.⁷⁵ However, integration of self-management principles in clinical practice was perceived as an ongoing process facilitated by regular training and support.⁷⁵

Social support from families, friends, work colleagues, and significant others of people with chronic pain can be an enabler as well as a barrier. A previous quantitative study reported that perceived social support enhanced psychological well-being, reduced pain intensity and elevated mood in people with chronic pain.⁷⁶ Our results suggest that perceived social support may act as a protective buffer to mitigate the emotional consequences of chronic pain, such as feelings of distress and loneliness.⁷⁷ Despite the insulating effects of social support, the invisible nature of chronic pain can make suffering incomprehensible to significant others and can lead to distrust, which was a barrier to ongoing self-management of chronic pain.⁷⁸

Strengths and Limitations

We adapted a holistic definition for chronic pain including those with malignant pain and orofacial pain in an attempt to explore a wide range of experiences of people with chronic pain. We implemented a number of strategies to enhance the credibility and methodological rigor of our meta-synthesis. First, dependability was achieved by involving all the authors with clinical and research experience in physical therapy. The authors synthesized the analytical themes from included articles and an iterative, inductive approach was used throughout the analysis process and the final analytical themes were derived by consensus. To ensure reflexivity, H.D. maintained an audit trail of major decisions made during various stages of the data synthesis. Furthermore, the CERQual approach provided an explicit assessment and explanation to gauge the level of confidence from analytical themes in order to translate the qualitative evidence in a broader context for policy development and evidence-informed practice.²⁴

Our review findings must be interpreted with caution owing to the following limitations. Qualitative meta-synthesis is often criticized, as it might undermine the richness of data from individual studies. Nevertheless, by following an inductive approach, the review findings have provided a new framework that goes beyond the results of individual studies (Fig. 2). We only included interventions that included at least 4 self-management skills; thus, we may have missed informative studies. Developing self-management skills is, however, a complex process requiring many different strategies, therefore, we believe that a minimum of 4 self-management skills in an intervention is appropriate. The follow-up period varied from immediately after the intervention to 72 months following the intervention. Therefore, we were unsure which of the key enablers and barriers were most influential long term. Further, this review was unable to determine which of the components of self-management interventions (eg, cognitive-behavioral therapy, relaxation, exercises) were most influential. Only articles published in the English language were included due to limited availability of translation services. Moreover, we were unable to locate studies conducted in low- and middle-income countries. Owing to differences in health care delivery and cultural health beliefs, future research is required to explore how such factors influence pain self-management from those countries.

Clinical Implications

As person-centered communication forms an integral aspect of person-centered care and shared decision making, our review findings indicate the need for better communication across all stakeholders (ie, patients, clinicians, family, and friends) to positively support self-efficacy of self-management strategies.⁷⁹ For patients, self-management interventions could focus on strategies to enhance communication skills enabling them to engage in productive discussions with clinicians communicating their pain experiences, treatment preferences, and discussing management plans.⁸⁰

For clinicians, upskilling person-centered practice and communication skills should be encouraged. Clinicians need to acknowledge the patient's chronic efforts to manage symptoms, some of which might be erratic, and recognize the extraordinary struggle required for ongoing control. This acknowledgement and empathy will help to foster trust and deepen the therapeutic alliance.⁴⁷ Shared decision making to elicit patient preferences, beliefs, and attitudes^{81,82} as well as discussing the risks and benefits of proposed treatment plans⁸³ using decision aids⁸³ would be worthwhile given the promising evidence to support person-centered communication, patient satisfaction, and improved health outcomes.⁸⁴ Approaches such as the Four Habits approach to shared decision making with emphasis on the entire clinical encounter,⁸⁵ and motivational interviewing techniques by using strategies such as using open-ended questions, and providing motivational statements, listening with empathy, and providing constructive feedback⁸⁶ are suggested to foster shared decision making and ultimately improve patient experience and care.⁸⁶ Further, health service delivery approaches focusing on an interprofessional model of self-management support⁸⁷ is important for building a shared understanding, consistency in communication, and integrating self-management support principles in clinical practice.

Conclusion

For self-management interventions to positively influence the lives of people with chronic pain, fostering self-discovery was crucial to facilitating acceptance and improved self-efficacy. However, the sustained efforts to self-manage pain after the intervention can be exhausting and were perceived as a constant struggle. Providing intermittent support in the form of booster sessions and peer support groups may be important. Clinicians involved in the management of chronic pain need to be cognizant of the importance of person-centeredness by means of shared decision making and guided problem solving to facilitate ongoing self-management.

Author Contributions and Acknowledgments

Concept/idea/research design: H. Devan, L. Hale, D. Hempel, B. Saipe, M.A. Perry
Writing: H. Devan, L. Hale, D. Hempel, M.A. Perry

Data collection: H. Devan, M.A. Perry
Data analysis: H. Devan, L. Hale, M.A. Perry
Project management: H. Devan, M.A. Perry
Providing institutional liaisons: B. Saipe, M.A. Perry
Consultation (including review of manuscript before submitting): H. Devan, D. Hempel, B. Saipe, M.A. Perry

The authors thank Heather Munthe-Kaas of GRADE-CERQual coordinating group for providing access to CERQual worksheets and training resources to conduct CERQual assessment for our meta-synthesis.

Disclosures

The authors completed the ICJME Form for Disclosure of Potential Conflicts of Interest. They reported no conflicts of interest.

DOI: 10.1093/ptj/pzx029

References

- Breivik H, Collett B, Ventafridda V, Cohen R, Gallacher D. Survey of chronic pain in Europe: prevalence, impact on daily life, and treatment. *Eur J Pain*. 2006;10:287-333.
- Blyth FM, March LM, Brnabic AJ, Jorm LR, Williamson M, Cousins MJ. Chronic pain in Australia: a prevalence study. *Pain*. 2001;89:127-134.
- Turk DC, Wilson HD, Cahana A. Treatment of chronic non-cancer pain. *Lancet*. 2011;377:2226-2235.
- Barlow J, Wright C, Sheasby J, Turner A, Hainsworth J. Self-management approaches for people with chronic conditions: a review. *Patient Educ Couns*. 2002;48:177-187.
- Newman S, Steed L, Mulligan K. Self-management interventions for chronic illness. *Lancet*. 2004;364:1523-1537.
- Bandura A. *Self-Efficacy: The Exercise of Control*. New York, NY: Freeman; 1997.
- Nicholas MK, Blyth FM. Are self-management strategies effective in chronic pain treatment? *Pain Manag*. 2015;6:75-88.
- de Silva D. *Evidence: Helping People Help Themselves*. London, United Kingdom: The Health Foundation; 2011.
- Little P, Dorward M, Warner G, et al. Randomised controlled trial of effect of leaflets to empower patients in consultations in primary care. *BMJ*. 2004;328:441.
- Jordan JE, Briggs AM, Brand CA, Osborne RH. Enhancing patient engagement in chronic disease self-management support initiatives in Australia: the need for an integrated approach. *Med J Aust*. 2008;189:S9.
- Lorig KR, Holman HR. Self-management education: history, definition, outcomes, and mechanisms. *Ann Behav Med*. 2003;26:1-7.
- Du S, Yuan C, Xiao X, Chu J, Qiu Y, Qian H. Self-management programs for chronic musculoskeletal pain conditions: a systematic review and meta-analysis. *Patient Educ Couns*. 2011;85:e299-e310.
- Dwarswaard J, Bakker EJ, van Staa A, Boeije HR. Self-management support from the perspective of patients with a chronic condition: a thematic synthesis of qualitative studies. *Health Expect*. 2016;19:194-208.
- Kawi J. Self-management and support in chronic pain subgroups: integrative review. *J Nurse Pract*. 2013;9:110-115.e5.
- Devan H, Hale L, Hempel D, Saipe B, MA Perry. Centre for Health, Activity, and Rehabilitation Research (CHARR), School of Physiotherapy, University of Otago, New Zealand. What works and what doesn't in a self-management support programme for individuals with chronic pain? A systematic review of qualitative studies. PROSPERO 2016:CRD42016042840. http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42016042840. Published July 2016. Accessed February 6, 2017.
- Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med*. 2009;6:e1000097.
- Tong A, Flemming K, McInnes E, Oliver S, Craig J. Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. *BMC Med Res Methodol*. 2012;12:181.
- Treede RD, Rief W, Barke A, et al. A classification of chronic pain for ICD-11. *Pain*. 2015;156:1003-1007.
- Critical Appraisal Skills Programme. 10 questions to help you make sense of qualitative research. http://media.wix.com/ugd/dded87_29c5b002d99342f788c6ac670e49f274.pdf. Accessed February 6, 2017.
- Perry MA, Hudson HS, Meys S, Norrie O, Ralph T, Warner S. Older adults' experiences regarding discharge from hospital following orthopaedic intervention: a metasynthesis. *Disabil Rehabil*. 2012;34:267-278.
- Slade SC, Patel S, Underwood M, Keating JL. What are patient beliefs and perceptions about exercise for nonspecific chronic low back pain? A systematic review of qualitative studies. *Clin J Pain*. 2014;30:995-1005.
- Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Med Res Methodol*. 2008;8:1.
- Barnett-Page E, Thomas J. Methods for the synthesis of qualitative research: a critical review. *BMC Med Res Methodol*. 2009;9:1.

- 24 Lewin S, Glenton C, Munthe-Kaas H, et al. Using qualitative evidence in decision making for health and social interventions: an approach to assess confidence in findings from qualitative evidence syntheses (GRADE-CERQual). *PLoS Med*. 2015;12:e1001895.
- 25 Andersen LN, Kohberg M, Herborg LG, Søgaard K, Roessler KK. "Here we're all in the same boat": a qualitative study of group based rehabilitation for sick-listed citizens with chronic pain. *Scand J Psychol*. 2014;55:333–342.
- 26 Andrews NE, Strong J, Meredith PJ, Gordon K, Bargraith KS. "It's very hard to change yourself": an exploration of overactivity in people with chronic pain using interpretative phenomenological analysis. *Pain*. 2015;156:1215–1231.
- 27 Bair MJ, Matthias MS, Nyland KA, et al. Barriers and facilitators to chronic pain self-management: a qualitative study of primary care patients with comorbid musculoskeletal pain and depression. *Pain Med*. 2009;10:1280–1290.
- 28 Barlow J, Turner A, Swaby L, Gilchrist M, Wright C, Doherty M. An 8-yr follow-up of arthritis self-management programme participants. *Rheumatology (Oxford)*. 2009;48:128–133.
- 29 Bourgault P, Lacasse A, Marchand S, et al. Multicomponent interdisciplinary group intervention for self-management of fibromyalgia: a mixed-methods randomized controlled trial. *PLoS One*. 2015;10:e0126324.
- 30 Brotto LA, Basson R, Carlson M, Zhu C. Impact of an integrated mindfulness and cognitive behavioural treatment for provoked vestibulodynia (IMPROVED): a qualitative study. *Sex Relation Ther*. 2013;28:3–19.
- 31 Buijs PC, Lambek LC, Koppenrade V, Hooftman WE, Anema JR. Can workers with chronic back pain shift from pain elimination to function restore at work? Qualitative evaluation of an innovative work related multidisciplinary programme. *J Back Musculoskelet Rehabil*. 2009;22:65–73.
- 32 Bunzli S, McEvoy S, Dankaerts W, O'Sullivan P, O'Sullivan K. Patient perspectives on participation in cognitive functional therapy for chronic low back pain. *Phys Ther*. 2016;96:1397–1407.
- 33 Caiata Zufferey M, Schulz PJ. Self-management of chronic low back pain: an exploration of the impact of a patient-centered website. *Patient Educ Couns*. 2009;77:27–32.
- 34 Day MA, Thorn BE, Kapoor S. A qualitative analysis of a randomized controlled trial comparing a cognitive-behavioral treatment with education. *J Pain*. 2011;12:941–952.
- 35 Doran NJ. Experiencing wellness within illness: exploring a mindfulness-based approach to chronic back pain. *Qual Health Res*. 2014;24:749–760.
- 36 Duggan GB, Keogh E, Mountain GA, McCullagh P, Leake J, Eccleston C. Qualitative evaluation of the SMART2 self-management system for people in chronic pain. *Disabil Rehabil Assist Technol*. 2015;10:53–60.
- 37 Furnes B, Natvig GK, Dysvik E. Suffering and transition strategies in adult patients attending a chronic pain management programme. *J Clin Nurs*. 2015;24:707–716.
- 38 Goldthorpe J, Peters S, Lovell K, McGowan L, Aggarwal V. 'I just wanted someone to tell me it wasn't all in my mind and do something for me': qualitative exploration of acceptability of a CBT based intervention to manage chronic orofacial pain. *Br Dent J*. 2016;220:459–463.
- 39 Hainsworth J, Barlow J. Volunteers' experiences of becoming arthritis self-management lay leaders: "It's almost as if I've stopped aging and started to get younger!" *Arthritis Rheum*. 2001;45:378–383.
- 40 Hallstam A, Stalnacke BM, Svensen C, Löfgren M. "Change is possible": patients' experience of a multimodal chronic pain rehabilitation programme. *J Rehabil Med*. 2015;47:242–248.
- 41 Harrison MB. *A Qualitative Service Evaluation of the Usefulness of a Group Based Acceptance and Commitment Therapy Programme for Chronic Pain* [PhD thesis]. Hertfordshire, United Kingdom: University of Hertfordshire; 2012.
- 42 Hopper MJ, Curtis S, Hodge S, Simm R. A qualitative study exploring the effects of attending a community pain service choir on wellbeing in people who experience chronic pain. *Br J Pain*. 2016;10:124–134.
- 43 Howarth M, Warne T, Haigh C. Pain from the inside: understanding the theoretical underpinning of person-centered care delivered by pain teams. *Pain Manag Nurs*. 2014;15:340–348.
- 44 Hurley MV, Walsh N, Bhavnani V, Britten N, Stevenson F. Health beliefs before and after participation on an exercised-based rehabilitation programme for chronic knee pain: doing is believing. *BMC Musculoskelet Disord*. 2010;11:31.
- 45 Mathias B, Parry-Jones B, Huws JC. Individual experiences of an acceptance-based pain management programme: an interpretative phenomenological analysis. *Psychol Health*. 2014;29:279–296.
- 46 Matthias MS, Kukla M, McGuire AB, et al. How do patients with chronic pain benefit from a peer-supported pain self-management intervention? A qualitative investigation. *Pain Med*. 2016;17:2247–2255.
- 47 Matthias MS, Miech EJ, Myers LJ, Sargent C, Bair MJ. "There's more to this pain than just pain": how patients' understanding of pain evolved during a randomized controlled trial for chronic pain. *J Pain*. 2012;13:571–578.
- 48 Moore KM, Martin ME. Using MBCT in a chronic pain setting: a qualitative analysis of participants' experiences. *Mindfulness (N Y)*. 2015;6:1129–1136.
- 49 Morgan M, Cousins S, Middleton L, Wariner-Gallyer G, Ridsdale L. Patients' experiences of a behavioural intervention for migraine headache: a qualitative study. *J Headache Pain*. 2015;17:16.
- 50 Nordin C, Gard G, Fjellman-Wiklund A. Being in an exchange process: experiences of patient participation in multimodal pain rehabilitation. *J Rehabil Med*. 2013;45:580–586.
- 51 O'Hagan FT, Coutu MF, Baril R. A case of mistaken identity? The role of injury representations in chronic musculoskeletal pain. *Disabil Rehabil*. 2013;35:1552–1563.
- 52 Oosterhof B, Dekker JH, Sloots M, Bartels EA, Dekker J. Success or failure of chronic pain rehabilitation: the importance of good interaction—a qualitative study under patients and professionals. *Disabil Rehabil*. 2014;36:1903–1910.
- 53 Steihaug S, Ahlsen B, Malterud K. "I am allowed to be myself": women with chronic muscular pain being recognized. *Scand J Public Health*. 2002;30:281–287.
- 54 Subramaniam V, Stewart MW, Smith JF. The development and impact of a chronic pain support group: a qualitative and quantitative study. *J Pain Symptom Manage*. 1999;17:376–383.
- 55 Toye F, Barker K. 'I can't see any reason for stopping doing anything, but I might have to do it differently': restoring hope to patients with persistent non-specific low back pain—a qualitative study. *Disabil Rehabil*. 2012;34:894–903.
- 56 Van Huet H, Innes E, Whiteford G. Living and doing with chronic pain: narratives of pain program participants. *Disabil Rehabil*. 2009;31:2031–2040.
- 57 Werner A, Steihaug S, Malterud K. Encountering the continuing challenges for women with chronic pain: recovery through recognition. *Qual Health Res*. 2003;13:491–509.
- 58 Hayes SC, Luoma JB, Bond FW, Masuda A, Lillis J. Acceptance and commitment therapy: model, processes and outcomes. *Behav Res Ther*. 2006;44:1–25.
- 59 Yu L, Norton S, Harrison A, et al. In search of the person in pain: a systematic review of conceptualization, assessment methods, and evidence for self and identity in chronic pain. *J Contextual Behav Sci*. 2015;4:246–262.
- 60 McCracken LM, Morley S. The psychological flexibility model: a basis for integration and progress in psychological approaches to chronic pain management. *J Pain*. 2014;15:221–234.
- 61 Yu L, Norton S, McCracken LM. Change in "self-as-context" ("perspective-taking") occurs in acceptance and commitment therapy for people with chronic pain and is associated with improved functioning. *J Pain*. 2017;18:664–672.
- 62 Bandura A. Social cognitive theory: an agentic perspective. *Annu Rev Psychol*. 2001;52:1–26.
- 63 Turner JA, Holtzman S, Mancl L. Mediators, moderators, and predictors of therapeutic change in cognitive-behavioral therapy for chronic pain. *Pain*. 2007;127:276–286.
- 64 Asghari A, Nicholas MK. Pain self-efficacy beliefs and pain behaviour: a prospective study. *Pain*. 2001;94:85–100.

- 65 Veehof M, Trompetter H, Bohlmeijer E, Schreurs KM. Acceptance- and mindfulness-based interventions for the treatment of chronic pain: a meta-analytic review. *Cogn Behav Ther*. 2016;45:5–31.
- 66 Kostova Z, Caiata-Zufferey M, Schulz PJ. The process of acceptance among rheumatoid arthritis patients in Switzerland: a qualitative study. *Pain Res Manag*. 2014;19:61–68.
- 67 LaChapelle DL, Lavoie S, Boudreau A. The meaning and process of pain acceptance: perceptions of women living with arthritis and fibromyalgia. *Pain Res Manag*. 2008;13:201–210.
- 68 Keefe FJ, Rumble ME, Scipio CD, Giordano LA, Perri LM. Psychological aspects of persistent pain: current state of the science. *J Pain*. 2004;5:195–211.
- 69 Biguet G, Nilsson Wikmar L, Bullington J, Flink B, Löfgren M. Meanings of “acceptance” for patients with long-term pain when starting rehabilitation. *Disabil Rehabil*. 2016;38:1257–1267.
- 70 Nicholas MK, Asghari A. Investigating acceptance in adjustment to chronic pain: is acceptance broader than we thought? *Pain*. 2006;124:269–279.
- 71 Ahlstrand I, Vaz S, Falkmer T, Thyberg I, Bjork M. Self-efficacy and pain acceptance as mediators of the relationship between pain and performance of valued life activities in women and men with rheumatoid arthritis. *Clin Rehabil*. 2016;31:824–834.
- 72 Gyurcsik NC, Brawley LR, Spink KS, Glazebrook KE, Anderson TJ. Is level of pain acceptance differentially related to social cognitions and behavior? The case of active women with arthritis. *J Health Psychol*. 2011;16:530–539.
- 73 Bair MJ, Robinson RL, Katon W, Kroenke K. Depression and pain comorbidity: a literature review. *Arch Intern Med*. 2003;163:2433–2445.
- 74 Damush TM, Wu J, Bair MJ, Sutherland JM, Kroenke K. Self-management practices among primary care patients with musculoskeletal pain and depression. *J Behav Med*. 2008;31:301–307.
- 75 Mudge S, Kayes N, McPherson K. Who is in control? Clinicians' view on their role in self-management approaches: a qualitative metasynthesis. *BMJ Open*. 2015;5:e007413.
- 76 López-Martínez AE, Esteve-Zarazaga R, Ramírez-Maestre C. Perceived social support and coping responses are independent variables explaining pain adjustment among chronic pain patients. *J Pain*. 2008;9:373–379.
- 77 Jamison RN, Virts KL. The influence of family support on chronic pain. *Behav Res Ther*. 1990;28:283–287.
- 78 Kostova Z, Caiata-Zufferey M, Schulz PJ. The impact of social support on the acceptance process among RA patients: a qualitative study. *Psychol Health*. 2014;29:1283–1302.
- 79 Butow P, Sharpe L. The impact of communication on adherence in pain management. *Pain*. 2013;154:S101–S107.
- 80 Frantsve LME, Kerns RD. Patient-provider interactions in the management of chronic pain: current findings within the context of shared medical decision making. *Pain Med*. 2007;8:25–35.
- 81 Matthias MS, Parpart AL, Nyland KA, et al. The patient-provider relationship in chronic pain care: providers' perspectives. *Pain Med*. 2010;11:1688–1697.
- 82 Pollard S, Bansback N, Bryan S. Physician attitudes toward shared decision making: a systematic review. *Patient Educ Couns*. 2015;98:1046–1057.
- 83 Matthias MS, Salyers MP, Frankel RM. Re-thinking shared decision-making: context matters. *Patient Educ Couns*. 2013;91:176–179.
- 84 Street RL. How clinician-patient communication contributes to health improvement: modeling pathways from talk to outcome. *Patient Educ Couns*. 2013;92:286–291.
- 85 Frankel RM, Stein T. Getting the most out of the clinical encounter: the Four Habits model. *J Med Pract Manage*. 2001;16:184–191.
- 86 Turk DC, Swanson KS, Tunks ER. Psychological approaches in the treatment of chronic pain patients: when pills, scalpels, and needles are not enough. *Can J Psychiatry*. 2008;53:213–223.
- 87 Kulnik ST, Pöstges H, Brimicombe L, Hammond J, Jones F. Implementing an interprofessional model of self-management support across a community workforce: a mixed-methods evaluation study. *J Interprof Care*. 2017;31:75–84.