Clinical Pain Research

Clara Goksör*, Kaisa Mannerkorpi and Anna Bergenheim

Experiences with an educational program for patients with chronic widespread pain: a qualitative interview study

<https://doi.org/10.1515/sjpain-2021-0080>

Received May 6, 2021; accepted September 9, 2021;

published online September 30, 2021

Abstract

Objectives: Chronic widespread pain (CWP) is a common problem in primary health care, with a prevalence of 10–15%. An educational program called Pain School has been developed for use in primary health care, comprising four educational group sessions and 10 weeks of physical activity. The purpose of this study was to explore patients' experiences with participating in an educational program that aims to increase their understanding of pain, self-efficacy, tools in daily life, and physical activity.

Methods: Twelve women (age 25–72 years) with CWP were included in this qualitative interview study set in primary health care. Semi-structured individual interviews were held 10 weeks after the completion of the four educational group sessions. Data was analyzed through the established method of content analysis, and the results are presented as a theme with categories and subcategories.

Results: An overarching theme that described the participants' experiences with the educational program was *evolvment of skills and perspectives to master pain*. This theme covered four categories: *understanding one's body and mind*, *experiencing the value of participation*, *applying strategies and ways of thinking*, and *evaluating and adding to one's personal framework*. Participation contributed to an increased understanding of one's body and mind and to experiencing the individual and social value of

participation. The participants applied new strategies and ways of thinking related to pain and physical activity. An evaluation of the relevance for the individual and the value of being in the group could reinforce or add to the participants' personal framework.

Conclusions: The educational program Pain School that was used in this study appears to give knowledge and support for women with CWP in primary health care and provide them with applicable skills and perspectives to manage pain.

Keywords: chronic pain; pain management; patient education.

Background

Chronic widespread pain (CWP) has been described as the presence of pain in the right and left half of the body, below and above the waistline, and axial skeletal pain, for at least three months [1]. The prevalence of CWP in the Western world is approximately 10–15%, and CWP is more common among women than men [2, 3]. In general, chronic pain has been shown to be associated with lower quality of life with limitations in activities of daily living [4], and CWP has been shown to be associated with psychological distress, fatigue, and decreased physical activity and physical function [5, 6]. Patients have described the experience of daily life with CWP with feelings of loneliness, struggling with inabilities and stress, and with varying flexibility of adapting and striving forward [7]. The etiology of CWP is complex and involves neurobiological aberrations, such as central sensitization and decreased pain inhibition; the experience of pain is also influenced by psychosocial aspects in the form of emotions, stress, relations, and behaviors [6].

Patients with CWP have been shown to have a low understanding of chronic pain and the physiological processes involved [8]. Educating patients about pain processes has been shown to improve their knowledge about pain biology, reduce pain, and improve function [9]. When given education on physical activity, self-management

*Corresponding author: Clara Goksör, Institute of Neuroscience and Physiology/Physiotherapy, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, E-mail: clara.goksor@vgregion.se

Kaisa Mannerkorpi, Institute of Neuroscience and Physiology/Physiotherapy, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden

Anna Bergenheim, Research, Education, Development & Innovation, Primary Health Care, Region Västra Götaland, Vänersborg, Sweden; and Institute of Neuroscience and Physiology/Physiotherapy, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden

strategies, and lifestyle changes, patients with chronic pain show reduced pain and improvements in self-efficacy, physical function, and the capability to manage health-related problems [10–13]. Enhancing self-efficacy may help patients to be more motivated to accept treatment [14]. In addition, exercise can contribute to improvements in functional status, pain reduction, mood, physical function, and general well-being for patients with CWP [15–18].

Patient education for pain management has been recommended to be multidisciplinary [12], and to be used as a part of a program [19], such as a combination of education and exercise [16]. However, there is a need for studies on programs that combine education with exercise [20].

Educational programs focusing on self-management techniques for patients with chronic pain exist within primary health care in different structures. One systematic review for patients with chronic low back pain showed that educational programs with self-management techniques have a moderate effect on pain intensity and a moderate-to-small effect on disability [21]. However, there is inconsistent evidence of long-term effects and differences in how self-management interventions are conducted [22]. The results of one qualitative study offers support for self-management programs in primary care for patients with chronic pain [23]. In that study, the participants described positive social norms, endorsement of physical activity, and motivation to practice what they had learned [23].

There have been few qualitative studies on the education [24] of patients with chronic pain overall, and especially on educational programs that combine education, self-management techniques, and physical activity. To the authors' knowledge, previous studies on this topic have not specifically included patients with CWP.

In order to develop and improve educational programs for patients with CWP for clinical practice, it is important to gain deeper knowledge about patients' experiences of participating in educational programs that aim to increase their understanding of pain mechanisms and self-management techniques, and to provide tools to balance their daily life and physical activity. The participants' own experiences can provide a deeper understanding of the perceived benefits of participation in relation to the participants' lifestyle and the various parts included in the program.

Aim

The purpose of this study was to explore the patients' experiences with participating in an educational program

aiming to increase their understanding of pain, self-efficacy, tools in daily life, and physical activity.

Methods

Intervention

The educational program used in the present study was Pain School, developed for patients with chronic pain in 2011, by the Swedish Rheumatoid Association in collaboration with primary health care professionals, and researchers. The first phase of the pain school consists of four weekly 2-h sessions with the purpose of increasing participants' knowledge of pain physiology, motivation to be more physically active, awareness of their symptoms, strategies to maintain balance in daily life, and self-management techniques enhancing self-efficacy. The sessions included lectures, interactive group-discussions, a short relaxation exercise, and an introduction to physical activity and exercise, including hand exercises, Nordic walking, and a home exercise program. Table 1 presents an outline of phase one of the pain school.

Phase two focuses on gradually increasing the frequency and/or perceived exertion of physical activity and exercise over 10 weeks. This phase was adapted to the individual priorities of the participants and to local resources. The participants engaged in group- or individual exercise with a physiotherapist, or in home-based exercise.

In the present study, the pain school was led by physiotherapists and occupational therapists with groups of 6–10 participants with chronic pain.

Research design and data collection

This qualitative interview study was performed in a primary health care setting to describe the patients' experiences of participation in the pain school [25]. Data was collected through semi-structured individual interviews in order to explore participants' individual perspectives [26]. The interviews were conducted after the participants had finished the first and second phases of the pain school, including the four group sessions and 10 weeks of individually planned physical activity.

Table 1: Outline of the first phase of the pain school.

Session	Main topic
1	Lecture about pain physiology and mechanisms. Practical instruction of a home exercise program.
2	Lecture to increase motivation to be more physically active. Practical instruction to gym training
3	Lecture about strategies in daily life. Practical instruction of hand exercises.
4	Meeting a patient educator. Practical instruction of Nordic walking.

All sessions include interactive group discussions and a short relaxation exercise.

Recruitment and participants

Participants were recruited continuously during the time period from February to June 2015 from a primary health care rehabilitation center in the west of Sweden. All patients that met the inclusion- and exclusion criteria were invited to participate and were given oral information on the present study after completing of phase one of the pain school. If they agreed, they were contacted by telephone to schedule the interviews. The criteria for inclusion were: women and men, aged 18–70, with CWP according to American College of Rheumatology (ACR) criteria [1], and participation in all four group sessions of the pain school during the spring of 2015. The exclusion criteria were: limited proficiency in the Swedish language and/or severe somatic or psychiatric disorders.

When starting their participation in pain school, 33 patients filled in a pain localization sheet [27] with 18 predefined body regions to determine whether they met the criteria for CWP. Of these patients, 21 participants, all women, met the criteria for CWP. No men met the criteria for CWP and therefore could not be included in this study. Five of the 21 patients were excluded from this study because they did not attend all four sessions during the first phase of the pain school, two patients dropped out from participation for unknown reasons, and two patients declined participation in this study due to time restrictions.

Interviews

The interviews lasted for 30–60 min and were conducted between April and September 2015 at a primary health care rehabilitation center in the west of Sweden by two physiotherapists. Both interviewers had previous experience with education and rehabilitation for patients with CWP. The interviews were digitally recorded, transcribed verbatim, and listened through. The interviewers conducted six interviews each and were not involved in the pain school or in any other rehabilitation for the participants. A semi-structured interview guide with open-ended questions was used, covering the following aspects: how the participants experienced the pain school; their understanding of pain; and their experiences of potential changes in their lifestyle. All participants received the same first question: How did you experience your participation in the pain school?

Data analysis

The data was analyzed through content analysis, according to the work of Graneheim and Lundman [28]. The analysis was mainly conducted by the first author, CG, but was discussed with the co-authors KM and AB throughout the process. Content analysis was used to interpret meaning from the content of text data with the purpose of obtaining a broad description of the phenomenon [28]. The transcribed interviews were read through in whole. Meaning units were identified and condensed, guided by the study aim, and then sorted to form subcategories representing the manifest content. The subcategories were further compared, sorted, and described within abstracted categories and within an overarching theme that represented the latent content – that is, the interpretation of the underlying meaning. The analysis moved back and forth through these steps and the results were discussed until agreement was reached among all the

authors. Quotes from the interviews were used to highlight the categories and subcategories.

Results

This study included 12 participants with CWP, all women. Their ages ranged from 25 to 72 years and the duration of pain was reported as from 2.5 to 20 years. The number of years of education, degree of employment, and living situation varied. Two participants had previously attended a similar educational program about pain. Table 2 presents descriptive data about the participants.

The content analysis identified four categories and one overarching theme, outlined in Table 3. The overall interpretation of the participants' experiences with the pain school resulted in the overarching theme of *evolution of skills and perspectives to master pain*. This theme interprets the process of applying the knowledge, strategies, and ways of thinking that the participants learned from partaking in the pain school and evaluating the personal value of being in the group in order to reinforce or add to their personal framework. The theme covers four categories: understanding one's body and mind, experiencing the value of participation, applying strategies and ways of thinking, and evaluating and adding to one's personal framework.

Table 2: Descriptive data (n = 12).

Descriptive data		n
Pain duration	0–5 years	3
	6–10 years	3
	11–15 years	4
	16–20 years	2
Education	9 years	1
	10–12 years	4
	>12 years	7
Work status	Employed	5
	Unemployed	4
	Student	1
	Parental leave	1
Work hours per week	Non-profit work	1
	0–10 h	6
	11–20 h	1
	>20 h	2
Sick leave	25%	1
	50%	2
	75%	2
	100%	1
Living with adult	Yes	6
One-person household	Yes	6
Born in Sweden	Yes	11

Table 3: Results of analysis with theme and categories.

Theme		Evolverment of skills and perspectives to master pain		
Categories	Understanding of body and mind	Experiencing value of participation	Applying strategies and ways of thinking	Evaluating and adding to personal framework
Subcategories	Knowledge of pain Meaning of pain Increased awareness	Individual value Social value	Change of approach Feelings of acceptance New strategies	Individual conditions Group dynamics Structure of education

Understanding one's body and mind

Participants described gaining increased knowledge about pain, including aspects of how pain works in the body and the understanding that symptoms such as fatigue are connected to pain. This knowledge increased their understanding of other people's expressions of pain and helped them understand that pain is a different experience for everyone and cannot be observed on the outside of a person.

That was really good and new for me; [it]has never been explained that clearly to me before, how the brain's function is really significant and it can be a little difficult to understand how that works. So, it was a good explanation. (Interviewee 11)

Many participants described having a complex relationship with pain after participating in the program. Gaining a deeper understanding of how pain is connected with an essential warning system contributed to how the participants defined pain. They no longer considered pain to be associated with danger and thus felt less afraid of increased pain. The participants described having an increased awareness of signals from their bodies, such as muscle tension and symptoms of stress, which were described as being connected to increased pain. Many negative words and emotions, such as sorrow and discomfort, were found to be connected to pain and made it difficult for the participants to appreciate life. Some participants never felt free of pain and did not think that their pain would ever change.

Something that you should not need to experience ... I believe the pain, it is something unpleasant, terrible, disgusting, but it is something I will have to learn to live with. Unfortunately. (Interviewee 1)

The participants described an increased awareness of their negative strategies and limitations connected to pain. Some avoided activities that provoked pain, which resulted in increasing passivity and isolation. Others ignored and distracted themselves from pain, thinking that pain should not stop them from doing what they want. Either way, the strategies resulted in negative spirals that brought more pain.

Expressed value of participation

The participants experienced individual value from their participation in the form of increased feelings of control and responsibility. They felt that they could influence their situation and realized that it was up to them to make the necessary changes; they also felt less responsibility for other people. Furthermore, the participants experienced an increased sense of well-being and fewer negative emotions such as anxiety, worry, frustration, and fear. They described experiencing personal development through deeper understanding and a shift of focus toward themselves, which improved their self-esteem and relationships with other people. Some felt that their symptoms were validated and that they had been acknowledged as individuals. They also felt less alone and felt uplifted on a spiritual level after participating in the program.

It felt like I grew as a person; that I dared to take up more space afterward, because, yes but [the pain school] was such a kick-starter when I had been feeling bad. (Interviewee 8)

Several participants said that they found talking about their pain with other people in everyday life to be a negative experience, but found participating in the program's group discussions to be a positive experience. Most of the participants described feeling a sense of security and togetherness with the group. They shared their experiences of not being believed or understood before. The group discussions were found to give valuable insights about thoughts and strategies to manage pain.

I don't know anyone that has the [pain] problems that I have and I am not someone that talks about having pain or wants to share it, so that's why it was somewhat good to come to a group where you could talk about [your pain experience]. (Interviewee 10)

Applying strategies and ways of thinking

Several participants described having a change of approach relating to pain management in everyday life; they expressed the importance to responding to body

signals in a different way and said that they experienced an increased ability to be in the moment.

To listen more to my body, to not just keep pushing. When I have days when I feel that today I'm in great pain and today I am so tired that I don't know what to do, then [those days] I need to take it very easy. (Interviewee 12)

The participants said that they now held more positive thoughts towards themselves and the future. Furthermore, they had learned how to explain their pain to other people, to set limits, and ask for help, they said that they were now more honest in their relationships with family and friends. Some participants felt a deeper understanding and acceptance of other peoples' opinions about them. Feelings of acceptance were also described, in terms of accepting the uncertainty of both the near and distant future and accepting that the process of changing one's life and adjusting to pain takes time. Some stated that although they were seeking acceptance, they needed more time and support to achieve it.

I think I have learned to accept [the pain]; greater acceptance of the pain, that it is there and now I have to learn to live with it [...] and [...] maybe get a different understanding of it as well. (Interviewee 1)

The participants described how they applied strategies when managing their everyday life, including setting reasonable goals and demands for themselves. They learned the importance of finishing an activity in order to experience success and accomplishment instead of failure and disappointment. They learned to distribute their energy level by prioritizing and finding a balance between activities for recovery and activities that demand energy.

Another aspect described by the participants was the importance of physical activity, despite the presence of pain. Some participants learned that physical activity was not dangerous and did not worsen their pain. They felt encouraged to be more physically active, which increased their well-being and positive experiences of their bodies and brought feelings of alleviation and relaxation.

That [pain] is not dangerous, but rather [that it is] much worse not to move around at all ... That movement relieves, that it can ease the pain. In many ways [exercise is] as effective as painkillers. (Interviewee 7)

Some participants increased their level of physical activity, while some sustained the level they had before. Others lowered the duration and intensity of exercise, which resulted in feeling less pain during and after exercise. The participants said they were striving to find balance between the importance of and need for physical activity and

the management of their pain. They considered it to be important to find a form of physical activity and exercise that they liked and to vary different forms of physical activity. Some participants expressed a belief that they could sustain the changes made.

Evaluating and adding to one's personal framework

The participants reflected upon several factors that affected their experiences of participating in the program in relation to the group, the structure of the program and individual circumstances. The amount of courage needed to share and talk in the group was described as being different for different participants, which could affect the group dynamics. While some expressed a sense of intimacy due to the small group, which felt rewarding and encouraged them to share their experiences, others described the group as being mixed and uneven.

Yes, it was a somewhat mixed group. But I think it was good. We did not have as much exchange among the participants as I would have liked to have. (Interviewee 9)

According to the participants, it was important, especially in an uneven group, for the leader to direct the conversation away from negativity and towards constructive thoughts and strategies. The participants appreciated that the program combined theoretical and active exercises, along with both lectures and discussions. The participants' individual circumstances were not always optimal, which could limit their receptiveness to the pain school; examples of issues included family circumstances, symptoms of depression, or other interventions included in rehabilitation. The participants that had lived with pain for many years felt that they had already learned how to deal with their pain. Some participants held expectations of clearer guidelines on how to manage their pain.

Maybe I had expected that you should find some more aids or shortcuts to escape the pain. But when you actually think about it, I understand that maybe you will never be [free from pain] ... There was no general solution that applied to all of us. (Interviewee 2)

Previous knowledge, such as information from health professionals and reading articles, was found to affect the participants' need for information. Some participants felt that they had limited knowledge before participating in the pain school, while others said that their previous knowledge about pain was verified by the program. According to the participants, those who had previously participated in

other pain schools found new aspects of information and strategies the second time compared with the first. Participants' former level of physical activity and exercise, as well as their ability to relate the information to themselves, affected their experiences of change.

So, I think it is easier, it is easier for me to relate to the information if I can associate it with real life. In a direct way. (Interviewee 9)

Discussion

The purpose of this study was to explore the participants' experiences with participating in the educational program titled Pain School, which aimed to increase their understanding of pain, self-efficacy, tools in daily life, and physical activity. The participants' experiences were illustrated through the overarching theme *evolution of skills and perspectives to master pain*. This theme interprets the process of applying knowledge and strategies, and further evaluating relevance and value for the individual of the learning of the program, in order to reinforce or add to one's personal framework. Several participants described having a deeper understanding of their body and mind related to their increased knowledge of pain and their awareness of negative emotions and strategies. They experienced individual value from their participation in the form of feelings of control, and social value in the form of support from the group. The participants said that they now used new strategies related to managing pain and physical activity in their daily life and interacting with other people. Finally, the participants reflected on factors that affected their experiences with the program, such as group dynamics, the structure of the program, and individual circumstances.

Some participants described pain as no longer being associated with danger and fear, while others said they experienced validation of what they already knew about pain. This changed perception of pain can be described as a change in the meaning of pain [29], which may allow patients to actively move forward [30]. The participants associated pain with many negative emotions; however, after participation in the pain school, they expressed a deeper understanding of how pain was affected by stress, thoughts, and emotions. Describing pain as multidimensional can benefit patients with chronic pain [31, 32] and can have positive effects on their pain perception [33]. There is limited evidence supporting that reconceptualizing pain results in less pain and better function [9], and the degree of reconceptualization can be affected by that the

information provided in education is relevant to the individual in everyday life [20].

The participants described an increased awareness of their negative strategies. Some strategies were passive and included avoiding activities that induced pain [15]. Other participants continued with activities despite their pain but found that surpassing their personal limitations could lead to symptom flare-ups, lost productivity, and decreased self-esteem [15]. Some participants said that their awareness of their negative strategies made their limitations more evident. However, a willingness to experience undesirable feelings can enhance overall functioning [34].

The participants in the study described experiencing an increased sense of well-being, control, and responsibility for themselves, as well as experiencing a decrease of negative emotions such as loss, worry, and anxiety. This aligns with previous studies that found that pain education had positive effects on self-control, psychological distress, and symptom severity [35, 36]. Low levels of social support can have a negative effect on self-management and can predict low pain self-efficacy and higher pain severity [37, 38]. Interestingly, the participants in the present study described varying levels of need for support, and those who reported having a low level of social support in their everyday life still described feeling a sense of togetherness and shared experiences with the group. This finding indicates that such a group could be a source of social support when family and friends cannot provide it. Focusing on the social network and group approach may positively influence mental health [31], and social support from both peers and health professionals is an important part of self-care for patients with chronic pain [37, 39].

Some participants described feelings of acceptance about the process of change, the future, and other peoples' opinions. Others said that they strove to find a balance between activities that cost energy and those that supplied energy, and needed both support and time in the strive to feel acceptance. Acceptance can be seen as a personal empowerment process of feeling in charge of the changes that are needed; however, it can also be seen as a more ambivalent process that includes feelings of uncertainty [40].

Exercise is recommended for patients with chronic pain [41], but a slow progression and setting attainable goals are important [29]. The participants noted that setting goals with lower standards resulted in feelings of achievement. Some participants in the present study felt encouraged to be more physically active, and described an increase of frequency, but variation of intensity, duration, and forms of their exercise.

The small size and dynamics of the groups affected the amount of sharing that occurred during discussions. A small group can provide a structure for education and promote capability [42]. The participants expressed thoughts about the importance of leadership in providing structure for the group. They also said being able to choose whether to participate was important. The degree of commitment to a treatment may be affected if the patient does not actively choose to participate [43]; furthermore, some patients feel skeptical about pain education [35]. Life experience, former knowledge and the ability to relate the information to themselves affected the participants' experiences with the present educational program. Relevance of the information for the individual may be a key factor in educating patients with chronic pain, but can be challenging in a group situation [24].

The theme of the evolvement of skills and perspectives to master pain interprets the process of applying the participants' experiences of the pain school to reinforce or add to their personal framework. Using new skills, being able to manage symptoms and emotions, and sharing experiences with a group can create a sense of mastery and enhance self-efficacy to manage pain and activities promoting health [10, 12]. The structure of this educational program is supported by recommendations in previous findings suggesting the importance of an applied focus for the structure of pain education [24, 44].

Limitations

A limitation of the present study is that only 12 participants were included, although the planned number was 15. The interview data from the 12 interviews was regarded as being sufficient to describe participants' general experiences of the educational program. The selection of the study population aimed to reach homogeneity in terms of experience with CWP, while variations in age, symptom duration and work hours introduced different experiences and perspectives, and ensured heterogeneity, which is assumed to strengthen the credibility of the results. However, only Swedish-speaking women met the inclusion criteria and were included in the study, which affects the transferability of the results. It is possible that new categories would be identified if the study were replicated with other participants. Another limitation is that one of the participants did not attend one of the sessions, which might have affected her overall experience of participation.

The timing of the interviews – that is, 10 weeks after finishing phase one of the educational program – could have affected the participants' recollection of the group

sessions; however, it also gave them the opportunity to reflect on and use their learned strategies. The interviews were conducted by two interviewers (CG and AB) who had no previous experience with interviewing. However, the process of the interviews was supervised by KM, who had extensive experience with qualitative interview studies. Measures to achieve consistency of data collection included conducting pilot interviews, having a standardized start and end for each interview session, and the use of a semi-structured interview guide. These methodological aspects strengthen dependability, which is an aspect of trustworthiness in data collection.

Implications and further studies

The results of the present study could be used to further improve the educational program Pain School, and might be applicable to other educational programs with similar content and structure, highlighting the importance of group sharing with the participants' own descriptions to make the learning relatable. The participants' experiences included physical, psychological, and social aspects of their relationship to pain. A biopsychosocial understanding of the nature of pain may offer an important approach in educational programs for patients with CWP [31]. Furthermore, a combination of education, group discussions, and practice sessions is recommended. Patients have different needs; for some, a few information sessions may be sufficient, while others may need further interventions [17].

Future research could include interviews both before and after participation [45] to explore expectations and changes in the participants' perspectives and use of strategies. It is also important to examine the experiences of participation among men with CWP and to include participants that did not complete all the sessions, in order to explore possible barriers to participation.

Conclusions

Experiences of participation in the educational program were illustrated with the theme *evolvement of skills and perspectives to master pain*. The participants with CWP in the present study expressed gaining a deeper understanding of their body and mind, and feelings of individual and social value. The participants applied new strategies and ways of thinking to their daily life related to pain and physical activity. Several factors affected the participants' experiences, including group dynamics, the structure of

the education, and individual circumstances. The theme interprets the process of applying knowledge and strategies, and further evaluating the relevance and value for the individual of the learning of the program, to reinforce or add to the participants' personal framework. The educational program Pain School that was used in this study appears to give knowledge and support for women with CWP in primary health care and provide them with applicable skills and perspectives to manage pain.

Acknowledgements: The authors would like to acknowledge the patients who participated and the leaders of the educational program.

Research funding: This study was supported by the Swedish Rheumatoid Association and the Local Research and Development Council Fyrbodal, Region Västra Götaland, Sweden (VGFOUFBD-516301).

Author contributions: CG, AB, and KM designed the study. CG and AB conducted the interviews. CG conducted the analysis and drafted the manuscript. AB and KM checked and reviewed the analysis and revised the manuscript. All authors read and approved the final manuscript.

Competing interests: The authors declare that they have no competing interests.

Ethics approval and consent to participate: The study complied with all relevant national regulations, institutional policies and is in accordance with the tenets of the Helsinki Declaration (as amended in 2013), and has been approved by the Regional Ethical Review Board in Gothenburg (REC#998-14). The participants received both written and verbal information about the study and gave their written consent to participate in the study.

Availability of data and materials: The dataset analyzed in this study is not stored in an open-access repository. We will share data with any interested researcher, pursuant to institutional and legal regulations, in accordance with patient privacy and confidentiality.

References

- Wolfe F, Smythe HA, Yunus MB, Bennett RM, Bombardier C, Goldenberg CL, et al. The American College of Rheumatology 1990 criteria for the classification of fibromyalgia. Report of the Multicenter Criteria Committee. *Arthritis Rheum* 1990;330:160–72.
- Mansfield KE, Sim J, Jordan JL, Jordan KP. A systematic review and meta-analysis of the prevalence of chronic widespread pain in the general population. *Ovid* 2016;157:55–64.
- McFarlane G, McBeth J, Jones GT. Epidemiology of pain. In: McMahon SB, Koltzenburg M, Tracey I, Turk DC, editors. *Wall and Melzack's textbook of pain*, 6th ed. Philadelphia: Elsevier Saunders; 2013:232–47 pp.
- Harker J, Reid KJ, Bekkering GE, Kellen E, Bala MM, Riemsma R, et al. Epidemiology of chronic pain in Denmark and Sweden. *Pain Res Treat* 2012;1–30. <https://doi.org/10.1155/2012/371248>.
- Geneen LJ, Moore RA, Clarke C, Martin D, Colvin LA, Smith BH. Physical activity and exercise for chronic pain in adults: an overview of Cochrane Reviews. *Cochrane Database Syst Rev* 2017;4. Available from: <https://doi.org/10.1002/14651858.CD011279.pub3> [Cited 20 Oct 2020].
- Nijs J, Mannerkorpi K, Descheemaeker F, Van Houdenhove B. Primary care physical therapy in people with fibromyalgia: opportunities and boundaries within a monodisciplinary setting. *Phys Ther* 2010;90:1815–22.
- Westergården M, Aili K, Larsson I. “Moving between living in the shadow of pain and living a life with the pain in the shadows” – women's experiences of daily life with chronic widespread pain: a qualitative study. *Int J Qual Stud Health Well-Being* 2021;16. Available from: <https://doi.org/10.1080/17482631.2021.1926057> [Cited 8 Aug 2021].
- Moseley L. Unraveling the barriers to reconceptualization of chronic pain: the actual and perceived ability of patients and professionals to understand the neurophysiology. *J Pain* 2003;4:184–9.
- Lee H, McAuley JH, Hübscher M, Kamper SJ, Traeger AC, Moseley GL. Does changing pain-related knowledge reduce pain and improve function through changes in catastrophizing? *Pain* 2016;157:922–30.
- Lorig K, Holman H. Self-management education: history, definition, outcomes, and mechanisms. [editorial]. *Ann Behav Med* 2003;26:1–7.
- Joyppal S, Kelly F, McMillan SS, King MA. Multi-disciplinary interventions for chronic pain involving education: a systematic review. *PloS One* 2019;14. Available from: <https://doi.org/10.1371/journal.pone.0223306> [Cited 20 Oct 2020].
- Burckhardt CS. Educating patients: self-management approaches. *Disabil Rehabil* 2005;27:703–9.
- Geraghty AWA, Maund E, Newell D, Santer M, Everitt H, Price C, et al. Self-management for chronic widespread pain including fibromyalgia: a systematic review and meta-analysis. *PloS One* 2021;16. Available from: <https://doi.org/10.1371/journal.pone.0254642> [Cited 8 Aug 2021].
- Gatchel RJ, Peng YB, Peters ML, Fuchs PN, Turk DC. The biopsychosocial approach to chronic pain: scientific advances and future directions. *Psychol Bull* 2007;133:581–624.
- Hassett AL, Williams DA. Non-pharmacological treatment of chronic widespread musculoskeletal pain. *Best Pract Res Clin Rheumatol* 2011;25:299–309.
- Macfarlane GJ, Kronisch C, Dean LE, Atzeni F, Häuser W, Fluß E, et al. EULAR revised recommendations for the management of fibromyalgia. *Ann Rheum Dis* 2017;76:318–28.
- Mannerkorpi K, Henriksson C. Non-pharmacological treatment of chronic widespread musculoskeletal pain. *Best Pract Res Clin Rheumatol* 2007;21:513–34.
- Clauw DJ, Crofford LJ. Chronic widespread pain and fibromyalgia: what we know, and what we need to know. *Best Pract Res Clin Rheumatol* 2003;17:685–701.
- Moseley GM, Butler DS. Fifteen years of explaining pain: the past, present, and future. *J Pain* 2015;16:807–13.
- King R, Robinson V, Elliott-Button HL, Watson JA, Ryan CG, Martin DJ. Pain reconceptualisation after pain neurophysiology education in adults with chronic low back pain: a qualitative

- study. *Pain Res Manag* 2018;1–10. <https://doi.org/10.1155/2018/3745651>.
21. Du S, Hu L, Dong J, Xu G, Chen X, Jin S, et al. Self-management program for chronic low back pain: a systematic review and meta-analysis. *Patient Educ Counsel* 2017;100:37–49.
 22. Elbers S, Wittink H, Pool JJM, Smeets RJE. The effectiveness of generic self-management interventions for patients with chronic musculoskeletal pain on physical function, self-efficacy, pain intensity and physical activity: a systematic review and meta-analysis. *Eur J Pain* 2018;22:1577–96.
 23. Turner BJ, Rodriguez N, Bobadilla R, Hernandez AE, Yin Z. Chronic pain self-management program for low-income patients: themes from a qualitative inquiry. *Pain Med* 2020;21:e1–8.
 24. Robinson V, King R, Ryan CG, Martin DJ. A qualitative exploration of people's experiences of neurophysiological education for chronic pain: the importance of relevance for the individual. *Man Ther* 2016;22:56–61.
 25. Malterud K. Qualitative research: standards, challenges, and guidelines. *Lancet* 2001;358:483–8.
 26. Britten N. Qualitative interviews. In: Pope M, Mays N, editors. *Qualitative research in health care*, 3rd ed. Oxford: Blackwell Publishing Ltd; 2006.
 27. Bergman S. Psychosocial aspects of chronic widespread pain and fibromyalgia. *Disabil Rehabil* 2005;27:675–83.
 28. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today* 2004;24:105–12.
 29. Lotze M, Moseley GL. Theoretical considerations for chronic pain rehabilitation. *Phys Ther* 2015;95:1316–20.
 30. Louw A, Diener I, Butler DS, Puente EJ. The effect of neuroscience education on pain, disability, anxiety, and stress in chronic musculoskeletal pain. *Arch Phys Med Rehabil* 2011;92:2041–56.
 31. Dysvik E, Lindström TL, Eikeland OJ, Natvig GK. Health-related quality of life and pain beliefs among people suffering from chronic pain. *Pain Manag Nurs* 2004;5:66–74.
 32. Moseley GL. Reconceptualizing pain according to modern pain science. *Phys Ther Rev* 2007;12:169–78.
 33. Moseley GL, Nicholas MK, Hodges PW. A randomized controlled trial of intensive neurophysiological education in chronic low back pain. *Clin J Pain* 2004;20:324–30.
 34. Mccracken LM, Zhao-O'Brien J. General psychological acceptance and chronic pain: there is more to accept than pain itself. *Eur J Pain* 2010;14:170–5.
 35. Wijma A, Speksnijder CM, Crom-Ottens AF, Knulst-Verlaan JMC, Keizer D, Nijs J, et al. What is important in transdisciplinary pain neuroscience education? A qualitative study. *Disabil Rehabil* 2018;40:2181–91.
 36. Van Oosterwijck J, Meeus M, Paul L, De Schryver M, Pascal A, Lambrecht L, et al. Pain physiology education improves health status and endogenous pain inhibition in fibromyalgia – a double-blind randomized controlled trial. *Clin J Pain* 2013;29:873–82.
 37. Miller J, MacDermid JC, Richardson J, Walton DM, Gross A. Depicting individual responses to physical therapist led chronic pain self-management support with pain science education and exercise in primary health care: multiple case studies. *Arch Physiother* 2017;7:1–12.
 38. Koenig AL, Kupper AE, Skidmore JR, Murphy KM. Biopsychosocial functioning and pain self-efficacy in chronic low back pain patients. *J Rehabil Res Dev* 2014;51:1277–86.
 39. Hatlen Nøst T, Steinsbekk A, Riseth L, Bratås O, Grønning K. Expectations towards participation in easily accessible pain management interventions: a qualitative study. *BMC Health Serv Res* 2017;17:1–10.
 40. Biguet G, Wikmar Nilsson L, Bullington J, Flink B, Löfgren L. Meanings of acceptance for patients with long-term pain when starting rehabilitation. *Disabil Rehabil* 2016;38:1257–67.
 41. Louw A, Sluka KA, Nijs J, Courtney CA, Zimney K. Revisiting the provision of pain neuroscience education: an adjunct intervention for patients but a primary focus of clinician education. *J Orthop Sports Phys Ther* 2021;51:57–9.
 42. Fraser SW, Greenhalgh T. Coping with complexity: educating for capability. *BMJ* 2001;323:799–803.
 43. Mårtensson L, Dahlin-Ivanoff S. Experiences of a primary health care rehabilitation programme. A focus group study of persons with chronic pain. *Disabil Rehabil* 2006;28:985–95.
 44. Watson JA, Ryan CG, Cooper L, Ellington D, Whittle R, Lavender M, et al. Pain neuroscience education for adults with musculoskeletal pain: a mixed-methods systematic review and meta-analysis. *J Pain* 2019;20:1140.e1–22.
 45. King R, Robinson V, Ryan CG, Martin DJ. An exploration of the extent and nature of reconceptualisation of pain following pain neurophysiology education: a qualitative study of experiences of people with musculoskeletal pain. *Patient Educ Counsel* 2016;99:1389–93.