

## REHABILITATION & REGENERATIVE MEDICINE SECTION

# Promoting Participation in Physical Activity and Exercise Among People Living with Chronic Pain: A Qualitative Study of Strategies Used by People with Pain and Their Recommendations for Health Care Providers

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### Abstract

**Objective.** To explore strategies used by people living with chronic pain when participating in physical activity and exercise and their recommendations for health care providers when promoting participation in physical activity and exercise. **Design.** Interpretive description qualitative study. **Setting.** Participants were recruited from primary care sites and a hospital-based chronic pain clinic in Kingston, Ontario, Canada. **Subjects.** Adults (>18 years of age) who self-identified as experiencing chronic pain (three months' duration) were interviewed. **Methods.** In-depth semistructured interviews were conducted with participants. Interviews were audio-recorded, transcribed verbatim, and reviewed for accuracy by the interviewer. Transcripts were analyzed using thematic analysis. Peer debriefing, reflexivity, and multiple in-person meetings were used to establish trustworthiness. **Results.** Sixteen adults (five men, 11 women) with a median age of 53 years were interviewed. Strategies used by people living with chronic pain to participate in physical activity and exercise included 1) finding the motivation, 2) setting up for success, 3) leveraging social support, and 4) managing pain and discomfort during activity. Recommendations for health care providers when promoting participation in physical activity and exercise for people living with chronic pain included 1) the importance of listening, 2) providing tailored advice, 3) being supportive, and 4) making physical activity and exercise programming accessible. **Conclusions.** People living with chronic pain reported using multiple strategies to participate in physical activity and exercise. Recommendations for health care providers centered on the importance of listening and taking a supportive approach when promoting engagement in physical activity and exercise for this population.

**Key Words:** Physical Activity; Exercise; Strategies; Recommendations; Chronic Pain; Qualitative Research

### Introduction

Chronic pain is common [1–4] and costly [5–8]. Chronic pain conditions are among the leading contributors to disability, with low back pain contributing the greatest impact on years lived with disability worldwide [9–11].

Clinical practice guidelines consistently recommend physical activity and exercise for multiple chronic pain

conditions [12–16] based on evidence that these interventions improve pain intensity, physical functioning, mental health outcomes, and quality of life [17–20]. Despite evidence that physical activity and exercise are beneficial, participation is low among people living with chronic pain [21–23]. Multiple factors may influence engagement in physical activity and exercise among people living

with chronic pain, including physical, psychological, social, and environmental factors [24].

Evidence suggests that the benefits of physical activity and exercise are dependent on long-term adherence and behavior change [25–27]. In the context of health care, adherence to physical activity and exercise recommendations is most accurately viewed as a collaborative process between people living with chronic pain and their health care providers [28,29]. Interventions to facilitate adherence to physical activity and exercise are beginning to emerge for people living with chronic pain [30,31]. For example, self-management techniques and supervised or individualized exercise therapy may help to improve adherence to physical activity and exercise for people living with chronic pain [30]. However, there is a foundational evidence gap related to the perspectives of people living with chronic pain needed to guide the development of these interventions. More specifically, there is a dearth of research on the strategies used by people living with chronic pain to participate in physical activity and exercise as well as their recommendations for health care providers when promoting participation in physical activity and exercise. Given the subjective nature of pain, recently proposed frameworks have emphasized the value of personal narrative in pain research and care [32]. For example, the multimodal assessment model of pain, proposed by Wideman and colleagues, describes the importance of understanding pain from multiple perspectives, including subjective and narrative accounts from people living with pain [32].

Although health care providers are increasingly being encouraged to prescribe physical activity and exercise [33], there is limited research exploring recommendations for how health care providers ought to approach physical activity and exercise prescription, particularly from the perspective of people living with chronic pain. Furthermore, social cognitive theory states that behavior change is the result of a reciprocal interaction between a person (e.g., person living with chronic pain with a set of learned experiences), environment (e.g., external social context, such as with a health care provider), and behavior (e.g., response to stimuli to achieve a goal, such as increasing their level of physical activity) [34,35]. As such, an improved understanding of strategies used and recommendations for health care providers when promoting participation in physical activity and exercise, from the perspective of people living with chronic pain, will complement existing literature on the benefits of physical activity and exercise and guide the development of future person-oriented behavioral interventions.

The purpose of this qualitative study was to explore strategies used by people living with chronic pain to participate in physical activity and exercise and their recommendations for health care providers when promoting physical activity and exercise.

## Methods

### Study Design

An interpretive description qualitative study [36–38] was conducted to explore strategies used by adults living with chronic pain to participate in physical activity and exercise and their recommendations for health care providers when promoting participation in physical activity and exercise. Interpretive description was chosen as the qualitative method for this research, as it aims to produce pragmatic findings that can lead to applied implications in clinical contexts [38]. This research was approved by the Health Sciences and Affiliated Teaching Hospitals Research Ethics Board at Queen's University in Kingston, Ontario, Canada.

### Research Team

This research was conducted by two physiotherapists from a hospital-based chronic pain clinic (KV and TD), a family physician with a large patient roster of people living with chronic pain (RP), and a physiotherapist researcher with a program of research focused on reducing pain-related disability (JM). All semistructured interviews were conducted by the first author (KV, male), a registered physiotherapist and PhD student with past experience conducting qualitative interviews. Before the interview, participants were made aware that the interviewer was a physiotherapist who worked in a hospital-based chronic pain clinic.

### Participants

Participants were eligible to participate in this study if they self-identified as 1) an adult (18 years of age and older), 2) experiencing chronic pain (pain that had lasted longer than three months), and 3) able to communicate in English.

### Recruitment

A purposive sampling technique was implemented to achieve maximum variation in demographic characteristics (e.g., age, gender, and chronic pain condition) [39]. Participants were recruited from primary care sites and a hospital-based chronic pain clinic in Kingston, Ontario, Canada. Potential participants were recruited in person by clinicians at the primary care sites and chronic pain clinic. After it was determined that study inclusion criteria were met, participants were given the choice of completing the semistructured interview in person at their primary care site, at the hospital-based chronic pain clinic, or over the telephone. No participants withdrew from this research.

### Data Collection

A semistructured interview guide was created to explore strategies used and recommendations for health care providers when promoting participation in physical activity and exercise for people living with chronic pain. See [Figure 1](#) for sample questions from the semistructured interview guide. A standardized demographics

1. What strategies do you use when you want to participate in physical activity or exercise?
2. What advice would you give to healthcare providers when trying to get people with chronic pain to participate in physical activity and exercise?
3. What recommendations would you suggest healthcare providers use to help people with chronic pain continue to participate in physical activity or exercise over a long period of time?

**Figure 1.** Interview guide sample questions.

questionnaire was also administered. A combination of in-person and telephone semistructured interviews was used [40]. Interviews were conducted between October 2017 and January 2018. Telephone interviews were provided as an option to participants, with the purpose of decreasing barriers to participation for participants with challenges leaving their home. No repeat interviews were conducted. With the exception of one interview for which the participant wished to have their spouse present, the interviews were conducted one to one (e.g., interviewer and research participant). Field notes were taken during each interview. Interviews were audio-recorded, transcribed verbatim, and checked for accuracy by the interviewer.

### Data Analysis

Interview transcripts were analyzed using thematic analysis, which included 1) familiarization with the data, 2) generating initial codes, 3) searching for themes, 4) defining and naming themes, and 5) producing a report [41].

As the first step of data analysis, all members of the research team (KV, RP, TD, JM) reviewed transcripts 1, 2, and 3 before meeting in person to create a preliminary coding tree. For the remaining transcripts, two researchers independently coded them and then met to review each coded transcript to reach consensus. The coding scheme was continuously refined as new codes emerged with each interview transcript [42]. A constant comparative approach was used, whereby positive and negative evidence was sought out for each key theme during data analysis [43]. Once the research team determined that thematic saturation was reached for key themes (e.g., no new key themes were emerging from the transcripts), participant recruitment was stopped, as data analysis was considered complete [44].

### Rigor

Peer debriefing, reflexivity, and multiple in-person team meetings were used to establish analytic rigor [45,46]. In addition, field note interpretations were used during data analysis to corroborate key themes. MAXQDA (version 2015) software was used to assist with data management and storage [47]. The COnsolidated criteria for REporting Qualitative research (COREQ) Checklist was used to report our qualitative findings [48].

### Results

A total of 16 participants participated in a semistructured interview ~45–60 minutes in length. Participants

reported a median of 53 years of age and living with chronic pain for a median of 11 years. Maximum variation was achieved in age (e.g., participant ages range from 28 to 87 years), gender (e.g., participants represented a gender split comparable to the general chronic pain population, with five men and 11 women participants), and chronic pain condition (e.g., chronic pain conditions self-reported by participants were diverse, such as arthritis, peripheral neuropathy, endometriosis, or no formal chronic pain diagnosis). See Table 1 for detailed participant demographic information.

This section will describe key themes and subthemes related to strategies used, as well as recommendations for health care providers when promoting participation in physical activity and exercise, from the perspective of people living with chronic pain. See Table 2 for a summary of key themes and subsequent subthemes that make up each key theme.

### Strategies Used by People Living with Chronic Pain to Participate in Physical Activity and Exercise

Strategies used by people living with chronic pain to participate in physical activity and exercise included finding the motivation, setting up for success, leveraging social support, and managing pain and discomfort during activity. See Supplementary File 1 for additional quotations for each key theme, beyond those included in this manuscript.

### Finding the Motivation

Participants described the challenge of finding the motivation to participate in physical activity and exercise when living with chronic pain. As such, it was important to use strategies to find the motivation to be physically active, such as self-talk, focusing on what you can vs cannot do, and having a goal.

Many participants emphasized the role of self-talk as a strategy to participate in physical activity and exercise. For example, one participant described how positive self-talk helped to motivate her to engage in physical activity:

That self-talk piece is really important, even though I know my self-talk is wrong, like because it's really positive and I know that's not really accurate. Like I know somewhere that I'm probably not going to get back to where I was, but I can't tell myself that so I keep telling myself, 'This is where you are right now, and just go get

**Table 1.** Participant characteristics (N = 16)

Characteristic	Description
Median age (range), y	53 (28–87)
Gender	
Man	5
Woman	11
Median duration with chronic pain (range), y	11 (1–70)
Self-reported chronic pain conditions	
Arthritis	4
Degenerative disc disease	4
Fibromyalgia	2
Peripheral neuropathy	2
Sciatica	2
Cervicogenic headaches	1
Chronic headaches	2
Cervical radiculopathy	1
Occipital neuralgia	1
Spinal stenosis	1
Mechanical back pain	1
Rotator cuff tear	1
Osgood Schlatter's	1
Endometriosis	1
Myofascial pain	1
Chronic back pain	1
Carpal tunnel syndrome	1
Migraine	1
Temporal mandibular joint dysfunction	1
No formal chronic pain diagnosis	1
No. of participants self-reporting living with >1 chronic pain condition	6/16
Highest level of education achieved	
Secondary school	2
College	6
University	8
Occupational status	
Unemployed	3
Student	1
Part-time employment	3
Full-time employment	2
Sick leave	1
Retired	6

off your [butt] and do something.' (INT-1; woman who self-reported having cervicogenic headaches)

Focusing on what one can do vs what one cannot do was another strategy that helped participants to engage in physical activity and exercise:

Sometimes there will be something and you can say... 'I can't do this' or 'I can't do that' but you don't dwell on it. ... Even if you can't do this, but hey you can still do this. It goes with the story, one door closes another one opens. You try and make things work for you. (INT-6; man who self-reported having degenerative disc disease and cervical radiculopathy)

Having a goal was another strategy described by participants to engage in physical activity or exercise:

Having a goal encourages you to go to the gym a little bit more. (INT-12; man who self-reported having chronic headaches)

## Setting Up for Success

Participants also described the importance of setting up for success when participating in physical activity and exercise when living with chronic pain. Various strategies, such as prioritizing, pacing and modifying activity, and engaging in enjoyable and low-impact activity, were described.

Participants shared the importance of prioritizing physical activity and exercise within their daily schedule when living with chronic pain. For example, one participant described that he had to prioritize participating in yoga on a daily basis in order to maintain his productivity and best manage his chronic pain:

I can prioritize... going to yoga every day. I had to make it a priority because at one point in time I tried to back off and say, 'You know what, I'm going to do it every second day'... And then my pain was worse. My productivity would go down. (INT-11; man who self-reported having degenerative disc disease and sciatica)

Pacing and regularly modifying activity, based on pain, fatigue, and level of discomfort, was also described as another strategy participants used to engage in physical activity and exercise. For example, starting with a low level of activity and gradually increasing the duration or intensity of exercise over time was common:

If I have a really bad [pain] day, I might [walk] 2 km and go home, and really slowly but at least I move that day, and sometimes then I'll go back have a rest, go on heat, and go back out again for a little bit more. Learning to pace myself. (INT-8; woman who self-reported having degenerative disc disease, occipital neuralgia, and arthritis)

Finding enjoyable and low-impact physical activity and exercise was another important strategy used by many participants. For example, one participant emphasized that she engages in physical activity and exercise in a pool as it is low impact and most enjoyable to her:

I'm a water person. I can do a lot in water, and if you fall in the water somebody will pull me up. ... That was my exercise, and I liked that exercise. (INT-5; woman who self-reported having peripheral neuropathy, arthritis, and fibromyalgia)

## Leveraging Social Support

Participants described social support as a critical strategy to participate in physical activity and exercise when living with chronic pain. In particular, peer support was described as important when engaging in physical activity. In particular, many participants stated that having an exercise 'buddy' or peer helped to keep them on track, particularly when having a challenging day managing their chronic pain. One participant shared that having a small group of peer support would make engaging in physical activity and exercise easier:

To try and find one or two people to go [to exercise with] because obviously doing things in small groups...or

**Table 2.** Key themes and subthemes related to strategies used and recommendations for health care providers when promoting participation in physical activity and exercise among adults with chronic pain

	Key Themes	Subthemes
Strategies used by people living with chronic pain to participate in physical activity and exercise	Finding the motivation	<ul style="list-style-type: none"> <li>• Self-talk</li> <li>• Focusing on what you can vs cannot do</li> <li>• Having a goal</li> </ul>
	Setting up for success	<ul style="list-style-type: none"> <li>• Prioritizing</li> <li>• Pacing and modifying activity</li> <li>• Enjoyable and low-impact activity</li> </ul>
	Leveraging social support	<ul style="list-style-type: none"> <li>• Peer support</li> </ul>
	Managing pain and discomfort during physical activity	<ul style="list-style-type: none"> <li>• Medication</li> <li>• Pain-relieving modalities</li> <li>• Positive mindset</li> </ul>
Recommendations for health care providers when promoting participation in physical activity and exercise for people living with chronic pain	The importance of listening	<ul style="list-style-type: none"> <li>• Listening to “where they’re at” regarding current physical abilities</li> <li>• Seek to understand the experience of living with chronic pain</li> </ul>
	Providing tailored advice	<ul style="list-style-type: none"> <li>• Start small</li> <li>• Provide options</li> <li>• Accountability</li> <li>• Follow-up</li> </ul>
	Being supportive	<ul style="list-style-type: none"> <li>• Encouragement</li> </ul>
	Making physical activity and exercise programming accessible	<ul style="list-style-type: none"> <li>• Financially accessible</li> <li>• Facilitate partnerships with community-based programs</li> </ul>

training partners and those kind of things make [physical activity and exercise] easier. (INT-12; man who self-reported having chronic headaches)

### Managing Pain and Discomfort During Activity

Participants also emphasized the importance of managing pain and discomfort during activity. Various strategies, such as medication, pain-relieving modalities, and a positive mindset were described as strategies to manage pain and discomfort when participating in physical activity or exercise.

The use of pharmacological pain management during physical activity and exercise was described as a strategy used by participants. For example, one participant stated that she takes pain medication before physical activity:

I have on occasion when I’ve gone out [to be physically active] taken pain medication 20 minutes or so before I leave the house, and that has helped, unfortunately. I wish it didn’t because I don’t like taking pain medication, but if I’m up for a long walk that’s what I do. (INT-10; woman who self-reported having arthritis)

Pain-relieving modalities such as heat, ice, and self-massage were also described by many participants as strategies to manage pain during activity. For example, one participant emphasized that heat packs helped to keep him physically active:

Right now I have to start off with heat packs to my lower spine when I have my morning coffees in order to be able

to get mobile. ... It’s a long process for me to get started in the day. (INT-6; man who self-reported having degenerative disc disease and cervical radiculopathy)

A positive mindset was also described by participants as an important strategy to manage pain during physical activity. In particular, participants highlighted strategies such as not dwelling on that fact that they have pain, focusing on the moment, and managing unhelpful negative thoughts. For example, one participant described how she doesn’t dwell on the fact that she has chronic pain, which helps her to stay physically active:

If I got pain, I just let it go. It’s gonna be there later. It’s gonna be there tomorrow, so I just deal with it. I try to ignore it I think. (INT-2; woman who self-reported having chronic headaches and arthritis)

In addition, another participant described how she tries to focus on the moment vs thinking too far ahead when engaging in physical activity:

I do it second by second by second. Nothing is planned. That would be too much pressure, and the pressure of thinking about it would make me not want to do [physical activity] because it hurts. (INT-5; woman who self-reported having peripheral neuropathy, arthritis, and fibromyalgia)

Overall, various strategies were used by adults with chronic pain when participating in physical activity or exercise. Strategies used by participants varied from day to day based on how participants were feeling and the type of physical activity or exercise.

## Recommendations for Health Care Providers When Promoting Participation in Physical Activity and Exercise for People Living with Chronic Pain

Recommendations for health care providers when promoting participation in physical activity and exercise, from the perspective of people living with chronic pain, included the importance of listening, providing tailored advice, being supportive, and making physical activity and exercise programming accessible. See [Supplementary File 2](#) for additional quotations for each key theme, beyond those included in this manuscript.

### The Importance of Listening

The importance of health care providers listening to an individual's experience of pain was a theme described by almost all participants. In particular, participants stated that it was important for health care providers to listen to "where they are at" regarding their current physical abilities, as well as seeking to understand their unique experience of living with chronic pain.

Participants shared that it was important for health care providers to first listen to a person's own thoughts on their current physical abilities. Many participants stressed that health care providers did not take the time to listen to their thoughts and concerns related to participating in physical activity and exercise. One participant highlighted the importance of health care providers listening and encouraging people living with chronic pain to actively engage in the process of exercise prescription:

I think the number one thing is listening to where they're at and asking them where they think is the next step for them. (INT-1; woman who self-reported having cervicogenic headaches)

In addition to health care providers listening to a person's current physical abilities, many participants stated it was important for health care providers to listen to their overall experience of living with chronic pain. For example, participants described that if a health care provider didn't understand the "bigger picture" of living with chronic pain, their physical activity and recommendations were not realistic given their unique circumstances:

You know a lot of [health care providers] don't understand the pain or how the pain works or how it reflects on the person or their personality or their mental state. . . . It's not only physically debilitating, but it's also mentally debilitating as well. (INT-13; man who self-reported having rotator cuff tear, Osgood Schlatter's, mechanical back pain, and sciatica)

### Providing Tailored Advice

Participants also shared the importance of providing tailored advice that considered their unique circumstances related to living with chronic pain, which included

starting small and providing options for physical activity and exercise.

Participants emphasized that health care providers should start with small and realistic recommendations for physical activity and exercise. For example, one participant highlighted the value of starting with low-level physical activity to avoid feeling overwhelmed:

Find [physical activity and exercise] that's a little bit easier for [someone]. Start small. (INT-12; man who self-reported having chronic headaches)

Providing options such as recommendations for physical activity to complete on "good" and "bad" pain days was also brought up by participants. For example, one participant suggested the importance of health care providers giving options when promoting participation in physical activity and exercise for adults with chronic pain:

If you give a list of options and then the person can decide for themselves, then they don't feel like it's being prescribed to them. They feel like they're taking responsibility for their own treatment program. (INT-11; man who self-reported having degenerative disc disease and sciatica)

### Being Supportive

Participants highlighted the importance of health care providers being supportive when promoting participation in physical activity and exercise to people living with chronic pain. Specifically, participants described the importance of accountability, follow-up, and encouragement.

Being held accountable when beginning to participate in physical activity and exercise was described as an important role of health care providers:

So if I had some kind of accountability with that with [logging] of that information and that kind of thing, I think that would be a little bit easier. (INT-12; man who self-reported having chronic headaches)

In addition to accountability, follow-up was a common recommendation for health care providers when promoting participation in physical activity and exercise:

I say do re-checks. . . . They should do re-checks and re-visits with the patients. To see if they are exercising. Um, maybe have them do like a journal. . . . Or you know some. . . you can give them a call halfway through, you know, halfway through the six months, year, or whatever. To see are you participating or e-mail or something like that. You know, 'How's it going? Are you still doing. . . ? Keep in touch.' That's the main thing. (INT-2; woman who self-reported having chronic headaches and arthritis)

Participants also suggested that health care providers take a positive and encouraging approach when

promoting participation in physical activity and exercise:

Be encouraging and positive, and show them the good results that can be had. More information is always helpful. (INT-3; woman who self-reported having fibromyalgia)

### Making Physical Activity and Exercise Programming Accessible

Participants also stated that physical activity and exercise programming needs to be financially accessible. Further, participants described that health care providers facilitating partnerships with community-based programs may help to support their engagement in physical activity and exercise.

Making physical activity and exercise programming financially accessible was important to participants, particularly given the financial challenges of maintaining paid employment when living with chronic pain. For example, affordable and subsidized fitness memberships were discussed:

If you, like, provide free classes or get like even deeper discount, like I know that you can get a discount on a gym pass if you're low income, but maybe that even still that's too much like free gym membership or free aquatic fitness. (INT-14; woman who self-reported having endometriosis)

Participants also mentioned the value of health care providers facilitating partnerships with community-based programs, such as recreation facilitates and accessible fitness centers. For example, one participant shared how making linkages with community organizations may help to make participation in physical activity more attainable for adults with chronic pain:

One of the best things they could probably do is pair up with places that they know will do...good delivering a positive experience to people who have pain and injuries and so on... If they were willing to give one free week...that would break down the barriers as far as the finances and getting people there for a week to try it anyways. (INT-11; man who self-reported having degenerative disc disease and sciatica)

Moreover, participants described several recommendations for health care providers when promoting participation in physical activity and exercise among people living with chronic pain. Recommendations consistently included the importance of listening and being supportive. In addition, the importance of providing tailored advice and making connections with community-based physical activity and exercise programs and facilities was highlighted.

### Discussion

The purpose of this qualitative study was twofold: 1) to explore strategies used by people living with chronic pain

to participate in physical activity and exercise and 2) to understand their recommendations for health care providers when promoting engagement in physical activity and exercise. Participants described using multiple strategies to participate in physical activity and exercise, including finding the motivation, setting up for success, leveraging social support, and managing pain and discomfort during activity. Recommendations for health care providers when promoting physical activity and exercise included the importance of listening, providing tailored advice, being supportive, and making physical activity and exercise programming accessible.

Given the increasing recognition on the value of narrative in pain research and care [32], this research provides important first-person perspectives on physical activity and exercise from the perspective of people living with diverse chronic pain conditions from early to older adulthood. This qualitative research complements existing quantitative research on the role of physical activity and exercise for people living with chronic pain [20] and builds on existing qualitative research on the experience of participating in physical activity and exercise in the context of chronic pain [24,49–52]. In particular, this research makes a novel contribution to the literature by providing recommendations for health care providers when promoting participation in physical activity and exercise among people living with chronic pain. Further, the key themes and subthemes related to recommendations for health care providers when promoting participation in physical activity and exercise align with aspects of social cognitive theory, whereby behavior change is viewed as the result of a reciprocal interaction between a person, an environment, and a behavior [34,35]. In this research, participants shared how their environment ought to be situated (e.g., by the behaviors and approach taken by health care providers) to promote improved participation in a behavior (e.g., engaging in physical activity and exercise) [34,35]. The results have implications for people living with chronic pain, health care providers who recommend physical activity and exercise, and researchers who implement and evaluate physical activity and exercise interventions for this population.

Participants described using multiple strategies to participate in physical activity and exercise when living with chronic pain. The importance of finding the motivation to be physically active through self-talk, focusing on what you can vs cannot do, and having a goal were strategies used by participants. Strategies to improve motivation, such as goal setting, have been shown to improve physical activity levels in adults with chronic pain, which suggests that participants were intuitively aware of the importance of motivation when engaging in physical activity [53,54]. Setting up for success was another strategy described by participants, whereby engaging in enjoyable physical activity was an important aspect of staying physically active. Given the lack of evidence demonstrating that one particular exercise intervention is more effective

than another for the management of chronic pain [25], our results suggest that adults with chronic pain ought to engage in physical activity that is enjoyable and most likely to be adhered to for the long term. Leveraging social support from peers was also described as a strategy used by participants. This aligns with previous work demonstrating the perceived value of social support among adults living with chronic pain [25,55–57]. Finally, managing pain and discomfort during physical activity was an important strategy used by many participants through a combination of medication, pain-relieving modalities, or positive mindset. Despite evidence that physical activity and activity can reduce pain severity in people living with chronic pain [20], there is a dearth of research describing strategies used to manage pain during physical activity itself for people living with chronic pain. As such, this research highlights the importance of a multimodal approach to managing pain and discomfort itself for people living with chronic pain when engaging in physical activity.

Participants provided several recommendations for health care providers when promoting physical activity and exercise among people living with chronic pain. Given the increasing emphasis on the role of health care providers in promoting participation in physical activity and exercise [33,58–60], these results provide perspectives on this process from the lived experience of people living with chronic pain. Interventions that have been previously shown to improve adherence in physical activity and exercise for people living with chronic pain include graded physical activity, supervised or individualized exercise therapy, and self-management support [30,61]. In this research, participants described the value of health care providers listening, providing tailored advice, being supportive, and making physical activity and exercise accessible. The importance of listening was described as a recommendation for health care providers when promoting physical activity and exercise. This recommendation supports previous research that demonstrated the positive impact of therapeutic alliance and active listening on pain intensity and muscle pain sensitivity in people with chronic low back pain [62].

Furthermore, given that many people living with chronic pain report feeling stigmatized and not listened to, this implies the critical importance of health care providers taking the time to appropriately listen to people who are living with chronic pain [52,63]. Tailoring exercise recommendations for adults living with chronic musculoskeletal pain has been previously described in the literature and is reinforced by this research [64,65]. Participants shared that health care providers ought to recommend low doses of physical activity as a starting point for people living with chronic pain. Broad and sweeping recommendations, such as engaging in 150 minutes of moderate to vigorous physical activity per week, are not always realistic when living with chronic pain [66,67].

Participants also emphasized that health care providers should be supportive when promoting physical

activity by providing accountability, follow-up, and encouragement. This is consistent with research demonstrating that people living with chronic pain need continued support from their health care providers in order to stay physically active [49,68]. Finally, participants advised health care providers to make physical activity and exercise programming accessible, particularly for those with financial challenges. Given that community-based exercise can result in positive health outcomes for people living with chronic pain [69–71], health care providers may consider facilitating access to supports for physical activity and exercise outside of their clinic space, such as at community fitness and recreation facilities.

### Implications for Clinical Practice

These results have important implications for clinical practice. For example, the strategies described by people living with chronic pain to participate in physical activity and exercise may serve as useful tools for other people living with chronic pain. Furthermore, these results may inform health care providers' approach to physical activity and exercise recommendations for people living with chronic pain. For example, given that people with chronic pain who participate in low-intensity exercise interventions are less likely to drop out [72], health care providers may benefit from advising people living with chronic pain to start with low-intensity activity when beginning a physical activity program. Furthermore, as cost can be a barrier to the self-management of chronic pain [73], people living with chronic pain may benefit from health care provider advocacy for improved access to financially accessible physical activity and exercise programming.

### Future Research

Future research should continue to explore the impact of behavior change interventions to facilitate participation in physical activity and exercise among people living with chronic pain. Given the importance of person-centered care [74,75], the themes described in this research provide a useful foundation for future physical activity and exercise interventions that take into account the perspective of people living with chronic pain.

### Study Limitations

Despite the many strengths of this research, it is not without limitations. First, although key themes related to strategies used and recommendations for health care providers when promoting participation in physical activity and exercise among people living with chronic pain are described in this paper, it is not clear whether the aforementioned strategies and recommendations for health care providers would in fact lead to improved participation and adherence in physical activity and exercise for people living with chronic pain. Second, although this research was conducted by a group of clinicians and



researchers with experience and expertise in chronic pain management, people with lived experience of chronic pain were not directly involved in data analysis. As such, it is possible that those living with chronic pain may have viewed the data through a different lens than the researchers in this study. Finally, this research was conducted through in-depth interviews with 16 people living with chronic pain, and thus the generalizability of these results should be considered with caution. However, the likelihood that these results may be transferable to other people living with chronic pain is enhanced, as participants were a heterogeneous group with diverse chronic pain diagnoses and thematic saturation was reached.

## Conclusions

Various strategies were described by people living with chronic pain to participate in physical activity and exercise, such as finding the motivation, setting up for success, leveraging social support, and managing pain and discomfort during activity. Recommendations for health care providers when promoting physical activity and exercise among people living with chronic pain focused on the importance of listening, providing tailored advice, being supportive, and making physical activity and exercise programming accessible. Results have important implications for people living with pain as well as health care providers who promote participation in physical activity and exercise among this population. Future research should evaluate interventions that aim to improve participation and adherence to physical activity and exercise recommendations that take into account the strategies and recommendations provided by people living with chronic pain.

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## Supplementary Data

Supplementary data are available at *Pain Medicine* online.

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