Does exercise relieve my pain? A qualitative study about perceptions of patients with low back pain

O exercício alivia minha dor? Estudo qualitativo sobre as percepções de pacientes com dor lombar

Micheline Henrique Araújo da Luz Koerich[1], Letícia de Souza Peixoto[1], Natalia da Silva Macedo[1], Debora Soccal Schwertner[1], Thais Cristina Siqueira[1]

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ABSTRACT

BACKGROUND AND OBJECTIVES: Physical exercise is recommended by the guidelines for the treatment of chronic low back pain, but the patients' perspective on this therapeutic modality is little explored. The aim of this study was to investigate the perception of patients with chronic low back pain about physical exercise for symptom control.

METHODS: This is a descriptive qualitative study, which investigated people with chronic low back pain on the waiting list for Physiotherapy outpatient clinic. Data was collected through individual, semi-structured interviews. The interviews were conducted online, investigating the perception of memory from previous experiences of exercise. Thematic content analysis was used to analyze the data.

RESULTS: Fourteen adults (10 women and 4 men) were interviewed. The data was categorized into three moments: (1) perceptions during exercise, (2) perceptions after exercise, and (3) long-term perceptions. The perceptions of pain and discomfort that occur at the beginning of any type of exercise or physical activity usually disappear in the first few weeks, however, when they are not well tolerated, they can lead to withdrawal or discontinuing of the practice. Although the majority reported pain relief, a feeling of relaxation and ease in performing functional activities, in the period immediately after exercise some participants noticed exacerbation of the pain and fear of worsening the condition. In the long term, the majority saw benefits (reduction in pain intensity, return to activities and reduced need for painkillers), but for some participants exercise alone does not seem to be enough to reduce pain.

CONCLUSION: People with chronic low back pain can have varying perceptions and results in relation to exercise.

Keywords: Chronic low back pain, Chronic pain, Patient perception, Physical exercise, Qualitative research.

RESUMO

JUSTIFICATIVA E OBJETIVOS: O exercício físico é recomendado pelas diretrizes para o tratamento da dor lombar crônica, mas a perspectiva dos pacientes sobre essa modalidade terapêutica é pouco explorada. Este estudo teve como objetivo investigar a percepção de pacientes com dor lombar crônica sobre o exercício físico para o controle dos sintomas.

MÉTODOS: Trata-se de um estudo qualitativo descritivo, que investigou pessoas com dor lombar crônica na lista de espera para atendimento fisioterapêutico. Os dados foram coletados por meio de entrevistas individuais e semiestruturadas. As entrevistas foram realizadas no formato online, investigando a percepção de memória pela experiência prévia da prática de exercício. Para a análise dos dados foi utilizada a análise de conteúdo temática.

RESULTADOS: Quatorze adultos (10 mulheres e 4 homens) foram entrevistados. Os dados foram categorizados em três momentos: (1) percepções durante o exercício físico, (2) percepções após o exercício, e (3) percepções a longo prazo. As percepções de dor e desconforto que ocorrem no início de alguma modalidade de exercício costumam desaparecer nas primeiras semanas, no entanto, quando não são bem toleradas, podem levar à desistência ou interrupção da prática. Embora a maioria tenha relatado alívio da dor, sensação de relaxamento e facilidade para realizar atividades funcionais, no período imediatamente posterior ao exercício alguns participantes perceberam exacerbação da dor e receio de agravamento do quadro. Em longo prazo, a maioria percebeu benefícios (redução da intensidade da dor, retorno às atividades e diminuição da necessidade de analgésicos), mas para alguns participantes somente a prática de exercícios parece não ser suficiente para a redução da dor.

CONCLUSÃO: Pessoas com dor lombar crônica podem ter percepções e resultados variados em relação à prática de exercício.

Descritores: Dor crônica, Dor lombar crônica, Exercício físico, Percepção do paciente, Pesquisa qualitativa.

Micheline Henrique Araújo da Luz Koerich – https://orcid.org/0000-0002-7228-6752;
Letícia de Souza Peixoto – https://orcid.org/0009-0006-3727-2191;
Natalia da Silva Macedo – https://orcid.org/0000-0003-3621-8557;
Debora Soccal Schwertner – https://orcid.org/0000-0001-7044-0384;
Thais Cristina Siqueira – https://orcid.org/0000-0002-7766-8354.

1. Santa Catarina State University, Department of Physiotherapy, Florianópolis, SC, Brazil.

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HIGHLIGHTS

- After starting to exercise, pain can increase in the first few weeks.
- The perception of increased pain can make it difficult to adhere to physical exercise
- The physical exercise practice is not always enough to relieve the pain.
- Improved functionality and reduced pain were observed in the long term.

Correspondence to:
Micheline Henrique de Araújo da Luz Koerich
E-mail: michelinekoerich@gmail.com

INTRODUCTION

Physical exercise is recommended by international guidelines as one of the main strategies for managing chronic low back pain (CLBP)[1,2], as it can produce benefits in reducing pain, recovering functionality[3] and reducing future episodes[4]. In this therapeutic context, exercise is understood as a planned, structured and repetitive physical activity focused on improving or maintaining a specific health condition[5].

A wide variety of exercise modalities and programs have been recommended for patients with CLBP. The most frequently prescribed modalities are aerobic exercises, resistance exercises, Pilates, motor control exercises, strengthening/stretching and interventions involving mind and body, such as Yoga[6]. Exercise therapy is associated with lower costs and greater effects on quality-adjusted life years (QALYs) compared to usual care (maintenance of care for low back pain), with costs and effects on QALYs similar to the costs and effects of other non-pharmacological therapies[7].

The benefits of exercise depend on participation and adherence to the recommended programs/activities[8]. However, low adherence has been reported as a major problem in prescribing exercises for CLBP[9]. Among the main barriers are fear of movement and worsening pain[10]. According to a research conducted in 2019[11], increased pain after exercise or a perceived lack of improvement influenced the engagement and adherence of some participants. Fear of worsening pain and avoidance of potentially painful activities have been associated with decisions to exercise and can lead to avoidance or loss of concentration and confidence with exercise and activities[10].

Therapeutic approaches for chronic pain (CP) should be patient-centered. In this sense, patient reports are fundamental for evaluating therapeutic interventions, helping to identify aspects that need to be improved[10,12]. Qualitative studies investigating patients' perceptions of exercise and physical activity for CLBP have focused on obstacles to adherence, how exercise should be prescribed and the role of the professional in prescribing and supervising[10,13,14]. However, a limited number of studies have investigated how patients perceive the effects of exercise on the body and for pain control. This information could be fundamental in helping health professionals to select strategies for facilitate adaptation to exercise and promote greater adherence.

The aim of this study was to investigate the perceptions of patients with CLBP about practicing physical exercise to control their symptoms.

METHODS

This is a descriptive qualitative study, conducted with the aim of exploring the experience of people with CLBP with treatments, including exercise. The focus of this research was on patients' bodily perceptions when practicing exercise. The manuscript was prepared in accordance with the recommendations of the Standard for Reporting Qualitative Research, and ethical approval was obtained from the Human Research Ethics Committee of the Santa Catarina State University (*Universidade do Estado de Santa Catarina* - UDESC - Opinion number 4.684.216).

Participants in this study were people complaining of CLBP who were registered on the waiting list for physiotherapy outpatient clinic from Santa Catarina State University. This study included men and women aged 18 or over with complaints of CLBP (persistent pain for more than three months). Participants with low back pain secondary to fractures, spondyloarthropathies, *cauda equina* syndrome, infections and metastases were excluded. Participants interested in taking part in this study completed and signed the Free and Informed Consent Term (FICT) before being contacted and invited to the interview sessions.

The interviews were individual and carried out by videoconference using virtual communication software (Microsoft Teams Platform) and were conducted by two researchers who had received training in conducting interviews from an experienced qualitative researcher. The researchers had no previous relationship with the participants. The participants were interviewed using a semi-structured interview script that was drawn up on the basis of the studies consulted[15,16].

The script contained three central questions related to the practice of exercise: (1) What types of exercise have they experienced? (2) What were their perceptions of physical exercise during and immediately after the exercise? (3) What results did they perceive from the exercise in the long term? Sociodemographic data and data related to pain characteristics were also collected. When necessary, the interviewers explored the subject with sub-questions. Recruitment and interviews continued until topic saturation was reached (defined when no new information was obtained after three consecutive interviews)[17]. After the interviews had been collected, they were audio-recorded and transcribed in full using Microsoft Word®. In order to maintain the confidentiality of the participants, their names were replaced by a letter of the alphabet (E - interviewee), respecting the order in which they were conducted. In addition, the transcriptions used colloquial language in order to preserve the characteristics of the participants.

Data analysis

The Content Analysis method[18] was used to interpret the data. The phases of content analysis went through three stages: 1) pre-analysis, in which the data obtained was organized, in this case the transcription and gathering of the interviews. This stage included some procedures such as floating reading, completeness, representativeness, homogeneity, relevance and exclusivity; 2) exploration of the material, in which the stages of coding, classification and categorization of the material studied are carried out and; 3) treatment of the results, inference and interpretation, the stage in which the relevant information is selected for critical and reflective analysis. Atlas.ti software version 8 was used for analytical processing of the data.

RESULTS

Of the 23 patients invited, 14 actually took part in the study, predominantly females, with a mean age of 52.6 ± 14.22 years. The interviews lasted between 30 and 70 minutes. The characteristics of the participants are described in table 1.

Table 1. Characteristics of the research participants.

Interviewees	Age (years)	Symptom time (years)	Gender	Professional status*	Type of exercise already practiced
01	41	10	F	Off work	Gym, bike, physiotherapy, Pilates.
02	64	20	F	Retired	Exercise at home, exercise bike, Pilates, hydrotherapy, physiotherapy.
03	49	5	F	Active	Exercise at home, physiotherapy, Pilates.
04	68	3	F	Active	Physiotherapy, Pilates, walking, exercise at home.
05	50	40	M	Retired	Exercise at home, gym, physiotherapy.
06	34	5	F	Inactive	Exercise at home, physiotherapy, gym, walking.
07	70	20	M	Retired	Physiotherapy, exercise at home, walking.
08	55	4	F	Off work	Pilates, physiotherapy.
09	80	1	M	Off work	Physiotherapy, hydrotherapy, walking, gym, Pilates, exercise at home.
10	33	4	F	Active	Physiotherapy, exercise at home.
11	47	30	F	Retired	Physiotherapy, exercise at home.
12	60	12	F	Inactive	Pilates, hydrotherapy, exercise at home, walking, physiotherapy.
13	38	2	M	Active	Physiotherapy, exercise at home, walking, Pilates, bike.
14	48	20	F	Off work	Physiotherapy, hydrotherapy, exercise at home, walking.

*Active = performing work activity; Inactive = not performing work activity, for reasons unrelated to the illness; Off work = not performing work activity due to the illness.

In the analysis of the qualitative data, three categories emerged: (1) Perceptions during exercise, (2) Immediate perceptions after exercise (3) Long-term perceptions. The information reported by the participants refers to general perceptions arising from experiences during exercise, which may have occurred in different situations, and not just at the time of the interviews.

Perceptions during exercise

The participants reported how they felt while practicing exercise, highlighting their perceptions, especially when they first started. Some participants reported that, in the first few days/weeks, they felt pain and discomfort while practicing, but after this initial period, these symptoms decreased.

"So, as I said, water exercise worked for me. I used to feel pain at first, in the first few sessions. Normally on the first, sometimes on the second... First, second day, it provided a fatigue, an increase in pain, I can tell you, but afterwards, it was very comfortable." (E14).

"...as I go along I feel that it's getting better! Just like the last time I did it... the first few days were a bit tricky, because I felt... it was not pain, it was a discomfort. Then it didn't... as I do the exercise, it gets better, it gets smoother, you know?" (E04).

For other participants, some types of exercise were not well tolerated, and with the increase or onset of pain that occurs during practice, exercise was perceived as an activity that "hurts" or a worsening in symptoms was observed. In these cases, patients often stopped exercising for fear of feeling pain during the activity or making their condition worse.

"And Pilates when I went twice a week, which was an hour of Pilates on the floor, and there is a lot of exercises, there were some that hurt me" (E01).

"My parents and I used to walk. My mother is 61 and my father is 64. I can't keep up with them. Do you know why? I start to feel pain down here, sort of between my buttocks and my lower back, you know? I feel a pinching sensation. And then my left leg starts to hurt too much and then I have to stop, I have to stop, so I really avoid it" (E06).

Immediate perceptions after exercise

Immediately after the exercises proposed to decrease pain, the participants reported a variety of body perceptions. Some felt that immediately after doing some physical exercise, they benefited from pain relief, their muscles felt more relaxed and they found it easier to perform functional activities that are usually limited due to CP.

"Well, it helps me a lot to move around afterwards, because there are times when even getting out of bed is difficult for me, so I do exercises in bed so I can get out of bed. Because when you're in pain, even to get out of bed, you just want to not move too much so it doesn't hurt. So doing the stretching he taught me helps me to get out of bed, to start the day" (E11).

"When I feel like, 'oops, it's starting to hurt!' I do the stretches, and I get relief, sometimes instantly" (E13).

"The improvement is that, after I get up, if I do these exercises, I have basically almost a day without pain" (E09).

However, other participants reported that exercise sometimes improves their pain immediately after the activity, but at other times the pain increases and so they stop practicing.

"...sometimes here at home, I manage to do some activity, a little plan [list of exercises provided by the physiotherapist] that's ready for me. I do the exercise bike, I do my activities, stretching, all that stuff. And then I'm fine, then sometimes I do it the next day and I start to feel it again, so I have to stop" (E05).

Long-term perceptions

In the long term, most of the participants noticed a reduction in the intensity of the pain, enabling them to carry out their activities and reducing the need for painkillers.

"(...) I've been doing [exercise] with her [Physiotherapist] for 20-something years now, she's very... careful, I do it and then I don't get pain for 6 months" (E04).

"Everything I do in terms of exercise, whether it's walking, water exercise or Pilates. Or even playing at home and exercising, I know that it will give me a better night's sleep and without pain. I wake up without pain, I don't need to take an analgesic for pain, you know? So for me, I think it's very, very important" (E12).

"The water, exercising in the water, gives me a lot of comfort and pain relief" (E14).

By practicing exercises, the participants also perceive themselves as more active and are able to return to activities that were limited. The reports indicate that pain relief and greater mobility benefit important functional activities such as walking, squatting and standing up.

"My mobility, I walk better, I can stand up, I can squat. With the exercises it's as if I had... my body getting looser, you know, being able to let go" (E12).

"It has helped to... improve my comfort, in the sense that my pain has reduced. I had a lot... I had the issue of limitation, of movement... I feel my body is more malleable, I can move around..." (E13).

"They're exercises that... prepare, I don't know what you'd call it, what's the name..., but they move the whole body, right, they enable the whole body to function better" (E09).

In addition to the specific benefits of pain reduction and improved functionality, other perceptions of the benefits provided by exercise were related to improved sleep and "well-being".

"Exercise was good for me, stretching, mobility and strengthening were very good for me" (E03).

"I started doing Pilates, hydro, all kinds of exercise, and my quality of sleep improved a lot" (E12).

"I do 15 minutes on the exercise bike, I stretch, I do other activities and I'm fine, I feel better" (E05).

One of the participants also reported that during periods when she didn't exercise regularly, she noticed a worsening in the intensity of the pain:

"I haven't stretched since Thursday, and that's terrible for me, terrible. Because it hurts when I don't stretch for a long time" (E03).

Although the majority of interviewees reported positive results from regular exercise, some participants felt that exercise didn't seem to be enough to control their pain.

"Just to say that it seems to help a little, but I feel it's not enough. Even doing these exercises, I still feel it. The difference is that it stopped hurting here in the front, in the waist, here in the front, and went to the back, that's the difference" (E07).

"I started doing it, no... I did Pilates before that, and then I started doing Pilates again and I gave up. Last month I gave up, because no... in 4 months nothing changed, so I gave up. I didn't feel any great progress, I learned a few exercises, which I think you can apply from Pilates, but nothing that had a constant gain, an improvement" (E13).

"Stretching is something that works a lot, but it's not something that solves it, it improves comfort, but the way I see it, it's not something that's going to eliminate my pain, not just that" (E13).

DISCUSSION

This qualitative study explored the perceptions of people with CLBP about their experiences with exercise as a treatment for their condition. The results revealed diverse perceptions, and despite the long-term benefits, the first few weeks and periods of pain exacerbation are unpleasant experiences, which can contribute to giving up or poor adherence to exercise.

The perceptions reported showed that many patients feel pain and discomfort during the exercises, especially at the beginning, but that these symptoms reduce over the days/sessions. However, some patients are unable to tolerate the first few weeks of adaptation and choose to stop exercising. Pain has been identified in several studies[19-22] as one of the main barriers to people with CP adhering to exercise. Pain during exercise can cause concern as it can be interpreted as a worsening of the condition or risk of injury, causing fear and reluctance to continue activities. However, a systematic review[23] pointed out that protocols which encouraged or allowed people to perform exercises perceived as painful produced small short-term effects, superior to those which prioritized only non-painful exercises.

The behavior of fear/avoidance of movement by people with CP is well documented in the literature[24-26] and is related to beliefs that movement should be avoided in order to reduce

pain. These results reinforce the importance of communication between professional and patient, clarifying the symptoms that can be experienced in the adaptation phase, and more frequent supervision at the beginning of an exercise program, especially when pain or discomfort is not well tolerated. The combination of educational[27,28] and behavioral strategies, such as Gradual Exposure Therapy[29,30], can be useful when the fear of feeling pain or the worsening of the condition is predominant, as they contribute to the reframing of pain and movement, reducing limitations and insecurities and facilitating the introduction of exercises that were previously perceived as a threat.

Another aspect observed in this study was in relation to the perception of immediate effects (immediately after practicing physical exercise). The participants reported varied body perceptions, but the majority felt that immediately after doing some physical exercise, they benefited from pain relief, feeling their muscles more relaxed and finding it easier to carry out functional activities, which are usually limited due to CP. How exercise reduces pain and increases functional capacity is something that cannot yet be fully explained, but has been linked to multiple mechanisms, such as physiological adaptations in strength and mobility, analgesia produced by endogenous mechanisms and in response to stress, improved immune system function, changes in psychological state and cognition, and structural and morphological changes in the central nervous system[6]. The results of this study are similar to those found in a study[20] in which the authors stressed that the perception of improvement facilitates participation and adherence, as it increases confidence in the treatment.

For most of the participants, long-term physical exercise showed positive results as a treatment for CLBP, with a perceived reduction in pain, enabling them to carry out their daily activities and reducing the need for painkillers. However, for some there was a perception that exercise seemed to be insufficient to improve their pain, and did not offer progressive gains. This perception may be related to the type of approach in relation to patients' expectations. Some evidence suggests that pre-treatment expectations can significantly influence treatment results, including negatively[31]. If the patient's primary expectation is a complete cure for their pain, failure to achieve this goal can increase frustration and anxiety, contributing to an increase in pain and disability[32]. This frustration can be avoided by managing treatment expectations around improving quality of life, functionality and reducing the impact of pain on the patient's life[33], placing pain relief as a secondary objective, taking into account that as the individual becomes more active, the greater the chances are that the pain will progressively reduce[30].

In addition, this feeling that exercise is insufficient to improve pain may also be related to the types of exercise the individual has already practiced or is practicing. Active non-pharmacological therapies, such as exercise, are often recommended because they are more effective in controlling pain than passive therapies (manual therapy, transcutaneous electrostimulation, massage). However, as the evidence doesn't seem to support one exercise modality being superior to another[34], an individualized approach should be considered based on the patient's condition, their goals and modality preferences[30].

The present study had some limitations, which are often found in qualitative studies, and although it made it possible to identify the main themes for understanding the phenomenon studied, the results may be related to the sociocultural context of the participants, which does not allow for generalization. During the interviews, participants were asked for their clinical diagnosis, but no reports were requested to confirm the diagnoses, so it was not possible to include this information in the characterization of the participants. There is a need for further studies to investigate perceptions of exercise to control CLBP, taking into account characteristics such as age, use of drugs, length of time practiced, weekly frequency and duration, as well as differences between modalities.

CONCLUSION

People with CLBP can have varying perceptions and results in relation to exercise. Participants reported an increase in the perception of pain at the beginning of the practice, which when not well tolerated, led to giving up or stopping the activity. However, those who persisted and maintained the activities began to notice pain relief after a few weeks. In the long term, the participants noticed benefits (reduction in pain intensity, return to activities and reduced need for painkillers), however, for some, exercise alone did not seem to be enough to reduce pain. This highlights the importance of guidance and monitoring by health professionals, especially in the first few weeks, to advise on the effects and safety of the exercises, adjust the volume and intensity of the exercises, or associate other treatment modalities, such as pharmacological therapy, when necessary.

AUTHORS' CONTRIBUTIONS

Micheline Henrique Araújo da Luz Koerich
Conceptualization, Resource Management, Research, Writing - Preparation of the Original, Writing - Review and Editing, Supervision

Letícia de Souza Peixoto
Data Collection, Conceptualization, Writing - Preparation of the Original

Natalia da Silva Macedo
Data Collection, Conceptualization, Research, Methodology, Writing - Preparation of the Original, Writing - Review and Editing

Debora Soccal Schwertner
Conceptualization, Resource Management, Methodology, Writing - Review and Editing

Thais Cristina Siqueira
Conceptualization, Research, Methodology, Writing - Review and Editing

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