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**What are patient beliefs and perceptions about exercises for  
nonspecific chronic low back pain?  
A systematic review of qualitative studies**

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## **ABSTRACT**

**OBJECTIVES:** *The global burden of low back pain is the highest ranked condition contributing to years of living with disability. Exercise is moderately effective, and adherence to exercise may improve if participants are engaged. Identification of elements that enhance engagement would enable clinicians to prescribe appropriate interventions. The review objective was to identify and synthesize qualitative empirical studies that have explored beliefs about exercise therapy of people with nonspecific chronic low back pain.*

**METHODS:** *Two independent reviewers conducted a structured review and metasynthesis informed by Cochrane and Campbell Collaboration guidelines and the PRISMA statement. Fifteen papers were included for data extraction, method quality assessment, and thematic analysis.*

**RESULTS:** *Four key themes emerged: (1) perceptions and classification of exercise; (2) role and impact of the health professional; (3) exercise and activity enablers/facilitators; (4) exercise and activity barriers. Participants believed that there were distinctions between general activity, real/fitness exercise, and medical exercise. Levels of acquired skills and capability and participant experience with exercise culture require consideration in program design. People participating in exercise classes and group work may be more comfortable when matched for abilities and experience. When an intervention interferes with everyday life and appears to be ineffective or too difficult to implement, people make a reasoned decision to discontinue.*

**DISCUSSION:** *People are likely to prefer and participate in exercise or training programs and activities that are designed with consideration of their preferences, circumstances, fitness levels, and exercise experiences.*

## **BACKGROUND INFORMATION**

Low back pain (LBP) has been identified as a significant contributing factor to long-term disability and absence from work, leading to substantial economic and societal burden. Nonspecific chronic low back pain (NS-CLBP) is not a diagnosis, rather it is a description of back pain with no identifiable cause or pathoanatomic diagnosis (1), and is either one long-term episode or periodic recurring episodes and remissions (3). The presumption is that specific pathologies have all been ruled out through appropriate clinical testing and imaging (2).

The World Health Organization (WHO) and governmental agencies recommend exercise for LBP (unless contraindicated), disease prevention and general health benefits. *Recent recommendations include 1 hour of daily activity and 30 minutes of moderately strenuous exercise 6 days per week.* In clinical trials, exercise has been shown to be moderately effective for NS-CLBP and there seems to be little to no difference based on type of exercise performed (4).

A study by Kolt et al. (5) found that participants were more likely to adhere to a low back rehabilitation program when provided with supplementary printed material, supervision, motivation strategies, clinic attendance, positive reinforcement, goal setting, and therapist/participant contracts. In addition, studies of exercise programs for chronic musculoskeletal conditions have shown positive effects with the addition of supervised and individualized exercises, health professional input and self-management techniques including home audio or video-tapes (5). The authors of this study sought to explore participant expectations, experiences, and preferences surrounding exercise and compare them to what is currently available. They did this by synthesizing qualitative empirical studies that have explored beliefs about exercise therapy of people with nonspecific chronic low back pain. They hope that identifying elements that enhance patient engagement will enable clinicians to prescribe appropriate interventions.

## **PERTINENT RESULTS**

In general, four key themes and a variety of subcategories were identified and explored in this qualitative literature review.

### **Theme 1: Perceptions & Classification of Exercise**

#### *Perceived Difference Between Medically and Non-Medically Prescribed Exercise:*

The majority of participants made a distinction between general activity, real/fitness exercise, and medical exercise. Many participants reported not feeling challenged by traditional back exercise programs and thought them unlikely to be helpful. A large number of participants had also pursued their own exercises programs, or were working with trainers because they felt that physiotherapy or rehabilitation classes were not enough of a challenge. Participants with more exercise experience were more likely to report feeling less fearful and more confident in their abilities, an increased belief in the likelihood of exercise having positive effects, and their ability to participate in activity in various environments.

#### *Individual Preferences for Types and Format of Exercise:*

Group dynamics were enhanced by matching people with others of similar fitness, strength and technical expertise; while individuals showed better performance when exercises were assigned based on their fitness levels and previously acquired skills. Participants showed higher levels of participation and engagement when they were familiar with the exercise environment, culture and training process, had knowledge acquired from previous training programs, and were involved in programs that were fun and contained variety.

#### *Importance of Individualized Exercise:*

Participants showed a desire for exercise programs that included individualized exercises and program delivery, exercises that made sense to them, were well explained, and addressed their individual needs. When participants lacked confidence in their ability to correctly perform their exercises, they were less likely to demonstrate high levels of compliance. Participants wanted their instructors to demonstrate their exercises, observe the participant doing their exercises, give them feedback, and make corrections to their technique.

### **Theme 2: Role and Impact of the Health Professional**

#### *Effective Health Care Provider Communication Skills are Important:*

Participants reported feeling more involved if they were given good explanations and were able to discuss their needs. Good health professional communication was reported to include taking time for explanations, use of appropriate language and terminology, listening, understanding, getting to know the patients, and encouraging the patient's participation in the communication process. Behaviours such as listening, answering patient's questions, consulting patients about the effectiveness of their therapy, and relating interventions to individual's self-help needs were considered particularly valuable. The key to good communication was reported to be keeping the process consultative instead of prescriptive, and considering the values, preferences, and life circumstances of the participant.

#### *Provision of Education & Information are Important:*

Participants reported wanting their treatments and diagnoses to be well explained, to be provided with educational materials and resources, and to be accurate, understandable explanations without the use of jargon.

### **Theme 3: Exercise and Activity Enablers/Facilitators**

Participants identified self-efficacy, self-confidence, perceived benefit, good outcomes, effective pain reduction, motivators, and incentives as additional enablers to participation and engagement in exercise programs. It was considered important to have supervision including individual correction, follow-up support, and reassurances from the practitioner throughout and appropriate treatment progression as the participant moved through the stages of recovery. Participants wanted exercise instructors to demonstrate exercises, observe their exercise practice, give them feedback, and correct their technique in lieu of providing a sheet of exercises.

### **Theme 4: Exercise and Activity Barriers**

#### *Time:*

Patients often reported their lack of adherence to their program being due to a lack of time and an inability to fit their exercises into their daily lives. This can be increased when patients perceive themselves as having no easy access to facilities and programs, or having high levels of work or family responsibilities, and therefore perceiving themselves as having no time for an exercise program.

#### *Diagnostic Uncertainty:*

Patients report the need for an accurate diagnosis to prove to themselves and others that their pain is real and become dissatisfied when they do not receive a diagnosis, receive an inadequate diagnosis, or receive different diagnoses over time. Previously received diagnoses can be problematic as they may affect their beliefs regarding what types and levels of activity they can manage.

### *Fear of Movement & Pain Aggravation: Fear Avoidance:*

Fear can either increase or decrease the likelihood of participation in activity programs. Patients who fear pain aggravation may avoid activities they perceive as potentially painful, leading to avoidance or loss of confidence in their ability to participate in exercise or activity programs. Alternatively, patients may be more likely to continue their exercises if they fear their pain returning if they stop. It may be difficult for patients who are focused on pain relief to grasp the importance of exercise programs, as they are unlikely to produce immediate, tangible benefits.

## **CLINICAL APPLICATION & CONCLUSIONS**

Based on a review of qualitative research investigating patients' preferences, health professionals should provide supervised exercise rather than advice to exercise. In patients performing exercise outside of supervised group or one-on-one sessions, health professionals should encourage compliance with exercise programs through the use of regular contact with the health professional, ensuring their patients feel understood, countering their fear-avoidance beliefs, building patient's confidence, and providing support throughout the program. Health professionals should also consider focusing on the wellness model to normalize and de-medicalize the implementation of their exercise programs, while framing them in the context of patient preferences.

Further research is recommended to determine the effectiveness of patient input into their exercise, activity, and rehabilitation programs. As well, the development of a questionnaire for clinicians to use to determine patient's exercise preferences to help guide their exercise prescription. Finally, it would be helpful to investigate important and effective communication skills to guide clinicians in forms of communication that are helpful to encourage healthy behaviours, attitudes, and activity participation.

## **STUDY METHODS**

The authors adapted the Cochrane Collaboration, Cochrane Back Review Group, PRISMA Statement, and Cochrane guidelines to create a structured review process. AMED, Campbell Collaboration, CINAHL, Embase, Medline, PsychInfo, Sportdiscus, and ISI Web of Science were searched up until July 2012 and additional forward and backward citation tracking was performed on all identified papers.

### *Inclusion Criteria:*

- Papers published in peer-reviewed journals
- Included > 80 percent of participants over 18 years of age
- Participants were prescribed exercises by a healthcare practitioner
- Included > 80 percent of participants with back pain of > 6 weeks duration
- Papers reported data allowing for evaluation of what patients believe, prefer, or have experienced with regard to exercises as a treatment for NS-CLBP

### *Exclusion Criteria:*

- Papers not published in English
- Papers were editorials, expert opinions, letters, or commentary
- Patients with NSCLBP with a specific underlying spinal pathology

Using set data extraction guidelines and forms the authors were able to extract the same information from each of 15 included papers. Data was extracted under the headings of methods, population, data collection, data synthesis, results, themes, discussion, conclusions, and recommendations. Quality was assessed based on the Critical Appraisal Skills Programme checklist, a series of questions used to assess the rigor (whether the approach to the study is thorough and appropriate), credibility (whether the findings were well presented and meaningful), and relevance (the usefulness of the study's findings) (6). Papers were then separated into high and low quality. 3 studies (4 papers) were found to be of high quality, 8 of medium quality, and 1 of low quality.

Collected data was analysed through interpretive synthesis, a combination of metaethnography and grounded theory, and a thematic framework was created for the entire data set. This allowed the concepts pulled from individual studies to be synthesized into overarching themes and a set of analytical charts to be developed to manage the data (7). Data from the charts was then put through descriptive analysis to identify dimensions within the data, categorize the dimensions, and then group the sets of categories into classes. Then, explanatory analysis was used to find links between sections of and subgroups within the data in order to explore why the associations and subgroups existed.

## **STUDY STRENGTHS / WEAKNESSES**

### **Strengths**

- Two reviewers screened all titles and abstracts, independently extracted the required data, appraised the quality of the data, conducted thematic analysis, and synthesized the data before coming together to reach consensus.
- Two additional independent researchers acted as arbiters in cases where the two primary researchers could not reach consensus.
- Reviewers were not involved in quality appraisal for studies for which they were coauthors.

### **Weaknesses**

- The meta-study process decontextualizes data by removing it from its original context.
- In this type of meta-synthesis, original data is not analysed. Rather, the synthesis is based on data reported by the primary researchers.
- Two of the included studies were originally conducted and reported by the review authors (more of a consideration than a weakness).
- Only English language publications were included, which may have excluded some important papers published in other languages.

### **Additional References:**

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