



Review article

Self-management program for chronic low back pain: A systematic review and meta-analysis



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ARTICLE INFO

Article history:

Received 21 March 2016

Received in revised form 20 July 2016

Accepted 21 July 2016

Keywords:

Low back pain

Chronic

Self-management program

Systematic review

Meta analysis

ABSTRACT

Objective: To determine the effectiveness of self-management programs (SMPs) on chronic low back pain (CLBP).

Methods: A search of randomized controlled trials (RCTs) was performed in Pubmed, Cochrane Library, Web of Science, Elsevier, and CINAHL through June, 2015. Two reviewers selected trials, conducted critical appraisal, and extracted data. Meta analyses were performed.

Results: Thirteen moderate-quality RCTs were included. There were 9 RCTs for immediate post intervention on pain intensity and disability, 5 RCTs for short term, 3 RCTs for intermediate and 4 RCTs for long term. Specifically, the effect sizes (ESs) of SMP on pain intensity were -0.29 , -0.20 , -0.23 , and -0.25 at immediate post-intervention, short-term, intermediate-term, and long-term follow-ups, respectively. The ESs on disability were -0.28 , -0.23 , -0.19 , and -0.19 at immediate post-intervention, short-term, intermediate-term, and long-term follow-ups, respectively.

Conclusion: For CLBP patients, there is moderate-quality evidence that SMP has a moderate effect on pain intensity, and small to moderate effect on disability.

Practice implications: SMP can be regarded as an effective approach for CLBP management. In addition to face-to-face mode, internet-based strategy can also be considered as a useful option to deliver SMP. Theoretically driven programs are preferred.

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1. Introduction

1.1. Definition and prevalence of chronic low back pain

Chronic low back pain (CLBP) is considered as a world-wide concern, and many strategies have been explored. Low back pain (LBP) is defined as “pain occurring in the lumbosacral region with radiation limited to above the knee, without signs of nerve root compromise” [1]. A systematic review has showed that the global prevalence of LBP was 31.0%, and one-year prevalence was 38.0% [2].

Specifically, LBP can be classified by duration as acute (pain lasting less than 6 weeks), sub-chronic (6–12 weeks), or chronic (more than 12 weeks) [3]. A global systematic review has reported that the prevalence of CLBP was linearly correlated with age between 30 and 60, and women generally have a higher prevalence compared with men. Specifically, the individuals aged between 20 and 59 have a CLBP prevalence of 19.6%, and the prevalence of older

people is 25.4% [4]. The primary complaints of patients with CLBP are pain and disability, and further consequences, including reduced productivity and high medical cost, are also serious [5,6]. Institute of Medicine estimated that the direct annual loss due to CLBP was 34 billion dollars in USA [7]. Global Burden of Disease Study 2013 showed that CLBP was one of the leading specific causes of years lived with disability [8].

1.2. Change of treatment paradigm on CLBP and self-management model

According to International Association for the Study of Pain [9], “at the chronic level, musculoskeletal pain is typically managed, but not cured.” As one category of musculoskeletal pain conditions, CLBP should be managed with effective, safe and low-cost approaches [10]. What’s more, advances have been achieved in neuroimaging, molecular, and submolecular techniques to treat

Table 1
Core skill elements of self-management programs.

Core skills	Operational definitions
Problem solving	Patients are taught basic pain-solving skills, including problem definition, generation of possible solutions (e.g., the solicitation of suggestions from friends and health care professionals, solution implementation), and evaluation of results [14].
Decision making	Equipped with necessary knowledge enough, patients are able to make day-to-day decisions in pain management to meet common changes in pain condition [14].
Resource utilization	Patients should be taught how to find and utilize resources in detail, e.g., reminding them to contact several potential resources at the same time [14].
The formation of a patient-provider partnership	For chronic pain management, the role of the health care provider is that of teacher, partner and professional supervisor. The patient should be able to report accurately the trends and tempo of the pain, make informed choices about treatment, and discuss these with the health care provider [14].
Goal-setting and action-planning	Goal-setting refers to encouraging active participation of the patient in their management, providing shared outcomes for clinicians and patients to work towards, and facilitating patients to become more self-determining [19]. Action planning specifies where, when, and how to act, which helps to form goals which are very specific (e.g., indicating what will be done at what time) [20].
Self-tailoring	Self-tailoring means that the individuals, based on learning the principles for changing behaviors and self-management, are led through structured self-management skills and then they can choose specific behaviors on their own as appropriate [14]. Interventions which are individualized and tailored to each individual are more effective than those that are “one-size-fit-all”.

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