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Behaviour change and self-management interventions in persistent low back pain

Gemma Mansell ^{a,*}, Amanda Hall ^b, Elaine Toomey ^c^a Research Institute for Primary Care & Health Sciences, Keele University, Staffordshire, ST5 5BG, UK^b Faculty of Medicine, Memorial University, 300 Prince Philip Drive, St John's, NL, A1B 3V6, Canada^c Health Behaviour Change Research Group, School of Psychology, National University of Ireland, Galway, Ireland

A B S T R A C T

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Self-management interventions for persistent low back pain (LBP) promote active involvement of the patient in managing their condition. Such interventions can be characterised as behaviour change interventions, in that they are designed to help the patient learn and adopt a set of health behaviours that they can use in everyday life to benefit their condition by reducing or managing their symptoms. Self-management interventions are recommended in several key guidelines for the treatment of persistent LBP, but the evidence for the effectiveness of these types of interventions is inconclusive. In this article, we discuss the existing literature within self-management interventions for persistent LBP and make suggestions for how research in this area can be improved, specifically addressing areas where evidence is currently lacking. Existing definitions of self-management are examined, and the importance of the choice of an underlying theory and appropriate outcome measures are discussed.

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Introduction

Chronic or persistent low back pain (LBP) is a condition that is characterised by long-term, persistent pain that interferes with work and activities of daily living, reduces the person's quality of life, and increases the disease and economic burden [1,2]. There are no known cures for persistent LBP, and the array of available passive treatments (e.g. injections, massage therapy) provide only small

* Corresponding author.

E-mail addresses: g.mansell@keele.ac.uk (G. Mansell), amanda.hall@med.mun.ca (A. Hall), elaine.toomey@nuigalway.ie (E. Toomey).

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to moderate effects for pain relief and improved function (e.g. Refs. [3–5]). The most recent clinical guidelines developed by the National Institute for Clinical Excellence (NICE) promote the use of self-management interventions for this population to aid in the long-term management of symptoms [6].

Self-management has been variably defined in the literature, with no commonly accepted or consensus definition for this concept [7–9]. For the purposes of this paper we define self-management interventions to be those that promote the active involvement of the patient in managing their condition. Typically these interventions help the patient learn and adopt a set of health behaviours that they can use in everyday life to reduce or manage their symptoms. Importantly, self-management interventions are a type of behaviour change intervention. Behaviour change interventions are more clearly defined in the literature as ‘coordinated sets of activities designed to change specified behaviour patterns’ [10,11].

In this article, we discuss what is known about self-management interventions for persistent LBP and make suggestions for how research can be improved. The article addresses the following:

1. Clinical effectiveness of current self-management interventions for persistent LBP
2. Design, conduct and evaluation of studies of self-management interventions for persistent LBP with respect to (a) self-management definition, (b) use of theoretical rationale, (c) self-management intervention components (content), (d) choice of outcome measures, and (e) reporting of studies of self-management interventions.

Clinical effectiveness of current self-management interventions for persistent LBP

The effectiveness of self-management interventions for patients with persistent LBP has been evaluated in four recent systematic reviews [7,12–14]. Of these, two included a range of persistent musculoskeletal conditions such as osteoarthritis or fibromyalgia [13,14] and two included patients with LBP specifically [7,12]. This section provides an overview of the findings of these reviews, focusing solely on the results of studies that included people with persistent LBP.

Twenty-one unique studies across the four reviews compared a self-management intervention with a minimal or no intervention control; a further 12 studies compared a self-management intervention to another intervention (e.g. physiotherapy, exercise, acupuncture, yoga, massage). Compared to minimal or no intervention, the effectiveness of self-management interventions on pain and disability at short term (approximately three months post-treatment) ranged from no effect to small statistically significant effects. Most studies had wide confidence intervals, which decreases the certainty around the actual effect (see Fig. 1a and b). Only five studies assessed outcomes at a long-term (approximately 12 month) follow-up point, reporting the same pattern of effects. Similarly, when compared with other interventions such as yoga or massage, general physiotherapy, or exercise, the effectiveness of self-management on pain and disability at short and long-term was uncertain [7,12]. Additionally, the methodological quality of most studies ranged from low to moderate. Patients and providers were never blinded, allocation was often not concealed, only some studies reported intention-to-treat analysis, and follow-up rates were commonly less than 85%. These limitations mean that effectiveness outcomes should be interpreted with caution.

From the reviews, it is clear that there is considerable heterogeneity in the self-management interventions with respect to aim, rationale, components, provider, mode and intensity. It appears that there is potential for this type of intervention to have long-term benefits for patients in outcomes of pain and disability. However, the differing effect estimates, combined with wide confidence intervals and issues with methodological quality, make it hard to interpret the findings for use in clinical practice. To have greater confidence in the effectiveness of self-management, interventions need to be designed and evaluated with better methodological rigour.

Design, conduct and evaluation considerations for studies of self-management interventions

Self-management definitions

To date, self-management has been variably defined in the literature with no commonly accepted or consensus definition [7,8]. Self-management typically appears to be referred to either in terms of the

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