The Spine Journal 16 (2016) 105–116

Review Article

Symptoms of depression as a prognostic factor for low back pain: a systematic review

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Received 14 May 2015; revised 2 October 2015; accepted 22 October 2015

Abstract

BACKGROUND CONTEXT: It has been proposed that depression plays an important role in the course of low back pain; however, there is considerable uncertainty on its predictive value.
PURPOSE: This systematic review aims to investigate the effect of depression on the course of acute and subacute low back pain.
STUDY DESIGN: This is a systematic review.
METHODS: We searched the following databases using optimized search strategies: AMED, CINAHL, EMBASE, Health & Society Database, LILACS, MEDLINE, PsycINFO, Scopus, and Web of Science. We only included prospective studies that investigated a cohort of participants with acute or subacute non-specific low back pain (pain of less than 12 weeks' duration). The prognostic factor of interest was depression or symptoms of depression assessed at baseline. The outcomes of interest included pain intensity, chronicity (non-recovery from low back pain), disability, return to work, health-related quality of life, and overall patient satisfaction. Two independent reviewers selected the studies, extracted the data, and assessed the methodological quality of the studies that were included.
FUNDING: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. The authors declare no conflicts of interest-associated biases.
RESULTS: Seventeen articles reporting 13 cohort studies were included in this review. There was considerable variability between studies in terms of the method of assessment of depression and low back pain, statistical methods, and follow-up length, which precluded the quantitative synthesis of the results. Definition of outcomes varied across studies, but overall they could be divided into work-related outcome measures, followed by disability, pain, self-perceived recovery, and mixed outcomes. Eleven out of 17 articles (or 8 out of 13 cohorts) reported that symptoms of depression at baseline are related to worse low back pain outcomes (measured in various ways) at follow-up, and the effect sizes (odds ratio [OR]) ranged from 1.04 to 2.47. Only two studies that did not find a statistically significant association reported quantitative results: OR=1.03, 95% confidence interval (CI) 0.98–1.08; and OR=1.02, 95% CI 0.99–1.06. All included studies, regardless of statistical significance, showed an effect in the direction of harm.

FDA device/drug status: Not applicable.

Author disclosures: ***MBP:*** Scholarship/Award (E). ***MLF:*** Fellowship Support (F). ***KR:*** Nothing to disclose. ***CGM:*** Fellowship Support (G). ***JRO:*** Nothing to disclose. ***TBA:*** Nothing to disclose. ***AT:*** Nothing to disclose. ***PHF:*** Nothing to disclose.

The disclosure key can be found on the Table of Contents and at www.TheSpineJournalOnline.com.

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. MBP holds the International Post-graduate Research Scholarship/Post-graduate Award from the Australian Government. CGM's research fellowship is funded by Australia's National Health and Medical Research Council. MLF holds a Sydney Medical Foundation Fellowship, The University of Sydney.

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http://dx.doi.org/10.1016/j.spinee.2015.10.037

CONCLUSIONS: Although a definitive answer on the effect of depression on the course of low back pain is not available, the findings of this systematic review suggest that depression might have an adverse effect on the prognosis of low back pain. Future large studies that enroll an inception cohort and that employ a standardized method for assessing depression and low back pain are needed.

Keywords: Depression; Low back pain; Prediction; Prognosis; Prognostic factor; Systematic review

Introduction

Most people suffering from low back pain experience improvement in pain and disability in the first 6 weeks [1,2]. However, approximately one third of acute episodes result in persistent symptoms [3], and this subgroup accounts for the poorest outcomes and 75% of the total costs associated with low back pain [4]. The understanding of the factors that are associated with low back pain prognosis could advance our understanding of the mechanisms underlying its clinical course, and also assist in developing therapies that could target patients who exhibit adverse prognostic factors [5].

It has been proposed that psychosocial factors play an important role in the development of disabling persistent low back pain [6,7]. Guidelines for low back pain often recommend the early recognition of psychosocial factors, such as depression, that could influence patients' recovery and contribute to poor outcomes [4,8,9]. Although guidelines endorse screening for depression in patients with low back pain, there is considerable uncertainty on its predictive value. Depression has been investigated in previous reviews that evaluated the relationship between psychological factors and low back pain, and inconsistent results were found on the effect of depression on the course of low back pain [10–13]. These previous reviews included heterogeneous studies in terms of study design and populations investigated, and did not specifically focus on depression as a prognostic factor for the course of low back pain. Additionally, previous reviews have included patients with a variety of symptom duration and have not provided quantitative estimates of the predictive value of depression for low back pain [10–12], making it difficult to inform on the prognosis of the condition. Therefore, the role of depression as a prognostic factor for low back pain remains unclear.

Both low back pain and depression are listed as the world's leading non-fatal diseases that contribute to the global years lived with disability [14]. The comorbid existence of depression and low back pain is extremely common [15–17]. The economic burden of low back pain [18] is high and increases substantially when depression is concurrently present [19–21]. The lack of accurate knowledge of the role of depression on the course of low back pain prevents clinicians from providing appropriate information and advice for patients with both conditions. Therefore, the aim of this systematic review was to investigate the effect of depression on the course of acute and subacute low back pain.

Methods

A systematic review was conducted to investigate the role of depression as a prognostic factor for low back pain. We followed the guidelines for reporting of meta-analysis of observational studies in epidemiology (MOOSE) [22]. A review protocol was created a priori and registered on PROSPERO international prospective register of systematic reviews (2014:CRD42014009101).

Search strategy

We systematically searched the following electronic databases from the earliest record to October 10, 2014, using optimized search strategies: AMED, CINAHL, EMBASE, Health & Society Database, LILACS, MEDLINE, PsycINFO, Scopus, and Web of Science. No restriction was applied on language or publication type. Citation tracking was also performed for eligible studies and also for previously published relevant reviews to identify any studies missed by the electronic search. The complete search strategies from all databases can be found in Supplementary Material Table S1.

We only included prospective studies that investigated a cohort of participants with acute or subacute non-specific low back pain (pain of less than 12 weeks' duration). No restriction was applied on participants' age and gender and on follow-up duration. Studies could recruit participants from any setting, for example, general population, primary care, or secondary care. Studies were included if they provided outcome data for at least one of the following outcome measures: pain intensity, chronicity (non-recovery from low back pain), disability, return to work, health-related quality of life, and overall patient satisfaction.

Studies that investigated general musculoskeletal disorders were included only if low back pain was considered as one of the conditions and if data for low back pain were reported separately. The prognostic factor of interest was depression or symptoms of depression of any severity assessed at baseline, which could be done by any method of assessment, such as diagnostic interview and self-report screening questionnaire. Studies investigating samples with specific forms of back pain, such as sciatica, spinal stenosis, serious spinal pathologies (fracture, cancer, or systemic diseases), or pregnancy-related back pain, were excluded. To increase the generalizability of the results, we also excluded studies based on secondary analysis of datasets from clinical trials and studies aiming to investigate the psychometric properties of depression