

Review Article

Depression as a prognostic factor of lumbar spinal stenosis: a systematic review

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Abstract

BACKGROUND CONTEXT: The clinical syndrome of lumbar spinal stenosis (LSS) is a commonly diagnosed lumbar condition associated with pain and disability. Psychological factors, including depression, also affect these and other health-related outcomes. Yet, the prognostic value of depression specifically in the context of LSS is unclear.

PURPOSE: The aim of this systematic review was to examine the literature on depression as a prognostic factor of outcomes in patients with LSS.

STUDY DESIGN: Best-evidence synthesis.

PATIENT SAMPLE: Patients receiving the diagnosis of LSS and surgery.

METHODS: A best-evidence synthesis was conducted, including articles published between 1980 and May 2012. Each article meeting inclusion criteria, including a longitudinal design, was critically appraised on its methodological quality by two authors independently, who then met to reach consensus. Only studies deemed scientifically admissible were included in the review.

RESULTS: Among the 20 articles that met the inclusion criteria, 13 were judged scientifically admissible. The evidence supports an association between preoperative depression and postoperative LSS-related symptom severity (a combination of pain, numbness, weakness and balance issues) and disability. The effect size for these associations was variable, ranging from no effect to a moderate effect. For example, an increase of 5 points on a 63-point depression scale doubled the odds of being below the median in LSS-related symptom severity at follow-up. Findings on the association between preoperative depression and postoperative pain alone and walking capacity were more variable.

CONCLUSIONS: Findings support that preoperative depression is likely a prognostic factor for postoperative LSS-related symptom severity and disability at various follow-up points. The prognostic value of depression on the outcomes of pain and walking capacity is less clear. Nonetheless, depression should be considered in the clinical care of this population. © 2014 Elsevier Inc. All rights reserved.

Keywords:

Depression; Spinal stenosis; Psychosocial factors; Prognostic factor; Systematic review; Best evidence synthesis

FDA device/drug status: Not applicable.

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Introduction

The clinical syndrome of lumbar spinal stenosis (LSS) is a painful condition that negatively influences many health outcomes, such as disability, walking capacity, and quality of life [1–4]. Psychological factors also have been shown to affect these and other health-related outcomes. Slover et al. [5] found in patients who underwent lumbar spine surgery that depression was one of the comorbidities most associated with poorer recovery of physical function, as indicated by the physical component summary score of the Short-Form 36.

Depression and pain conditions, including back pain and other pain conditions, frequently coexist and when occurring together, are associated with greater pain severity, poorer health-related quality of life, and increased disability [6,7]. The relationship between depression and pain is complex and most likely bidirectional. In a systematic review of psychological risk factors in back and neck pain it was found that of 16 studies, 14 showed that depressed mood increased the risk for the development of pain conditions [8], whereas in a subsequent study [7] the strongest predictor of depression was back pain. In regard to the view that depression is a risk factor for chronic pain, it has been noted that the supporting literature has significant limitations; for example, the precise onset of pain has not been identified in some studies, which precludes concluding that depression triggered the pain [9]. Nonetheless, it is important to understand the direction and magnitude of this relationship when considering strategies to improve patients' treatment and recovery.

Although reviews of prognostic factors in low back pain have suggested that depressed mood may increase the risk of chronicity [10] and costs to health care [11], such evidence may not generalize to an LSS context. Recent findings indicate that patients diagnosed with LSS have poorer health-related quality of life and increased comorbidities compared with persons of similar age suffering from chronic back pain [4]. It is also possible that other symptoms specific to LSS, such as neurogenic claudication, could contribute to an increased burden of illness in patients with LSS. This suggests that the burden of illness, and possibly associated psychological factors and their effects, in patients diagnosed with LSS are distinct from those with chronic back pain in general. The purpose of this systematic review is to examine the evidence on depression as a prognostic factor of LSS outcomes.

Methods

Search strategy

The search strategy was developed through consulting with both a library scientist with experience in systematic reviews and other content experts to select appropriate search terms. The search strategy included synonyms of relevant terms related to LSS and depression to help ensure all articles were found (eg, search strategy for MEDLINE can be found in [Supplementary Appendix A](#)).

We systematically searched the following electronic library databases (Figure): Scopus, Web of Science, CINAHL, MEDLINE, WorldCat, Cochrane Library, EMBR Reviews, and REHABdata. In an attempt to locate any articles that may have been missed in the initial search, we also examined reference lists of all articles identified as relevant.

Electronic library databases were searched for articles published from 1980 through May 2012. We chose 1980

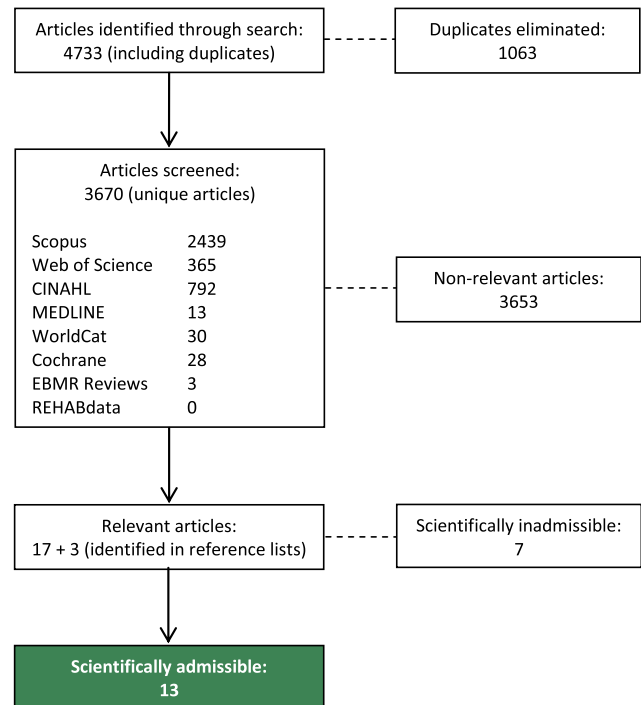


Figure. Results of article search and selection.

as the earliest publishing year of the search term, as before this there was limited research that considered the effect of psychosocial factors in the context of LSS. Indeed, when we entered the same search strategy within MEDLINE but limited the search between 1950 and 1980, no relevant articles were yielded.

Study selection

After studies identified in the search were uploaded into reference managing software, citations were assessed by the first author to determine whether they met the inclusion criteria by first reviewing titles and abstracts and then reviewing full texts of articles judged to be potentially relevant. At this stage of the review, the methodologic quality of the study was not considered. The same author conducted this screening process on two separate occasions to minimize the possibility that articles were misclassified.

The *inclusion criteria* used for screening for relevance were as follows:

1. Studies reporting original data.
2. Studies reporting findings related to depression as a prognostic factor of an LSS outcome.
 - a. Studies that described depression with alternative terms but clearly stated the method of assessing depression or depressive symptomatology (eg, depressive symptomatology assessed with Center for Epidemiologic Depression Scale) were included.

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