



## Review article

## Factors and concerns of patients that influence the decision for spinal surgery and implications for practice: A review of literature

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## ARTICLE INFO

## Article history:

Received 6 June 2016

Received in revised form

26 July 2016

Accepted 5 September 2016

## Keywords:

Spinal surgery

Decision making

Patient concerns

Patient preferences

## ABSTRACT

*Study design:* A literature review.*Objectives:* To identify the factors and concerns that influence the decision of patients to undergo spinal surgery.*Methods:* Electronic databases MEDLINE, PsycINFO, CINAHL plus, and Embase were searched for relevant studies published from 2000 to 2015. The keywords for the search included: spine surgery OR spinal stenosis AND decision making OR consideration OR preference OR willingness OR concern. Seven quantitative studies met the criteria for inclusion and were included in this review.*Results:* The findings showed that patients were more likely to decide on surgery when they were suffering from severe bodily pain, poor physical function, poor psychosocial health and a higher level of functional disability. Concerns that affected the patients' decision on whether or not to opt for surgery were: the benefits weighed against the perceived risks of different modalities of treatment, the effectiveness of medical treatments, their level of satisfaction with their symptoms and a preference for autonomy or a reliance on the opinion of medical professionals. The findings relating to patient characteristics and preference for surgery were inconsistent.*Conclusion:* Patients go through a complex and a multi-factorial process in making the decision whether or not to undergo surgery, which calls for decision support interventions that will help them to make the decision.

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## 1. Introduction

Patients with spinal disorders suffer from back or lower limb pain, causing difficulties in walking or even disability in later stages of the disease if their condition is not effectively managed. Conservative approaches to the treatment of spinal disorders include physical therapy, epidural injection and pharmacological treatment (Tran et al., 2010). Conservative treatments are traditionally the first line of management for spinal disorders, with spinal surgery only offered as the last option if conservative treatments have failed. In recent decades, the rate at which spinal surgeries are being performed has increased as clinicians have started to suggest that surgery be carried out during the early stages of spinal disorders, in the hope of achieving better functional outcomes and a higher quality of life for patients (Deyo and Mirza, 2006; Lurie et al., 2003). According to a report on the situation in the United States of America (USA), the number of lumbar spinal fusions for degenerative conditions increased 220% in the ten years from 1990 to 2001 (Deyo et al., 2005).

A large-scale Spine Patient Outcomes Research Trial conducted in 11 states of the USA showed that patients who had received surgical intervention for lumbar disk herniation demonstrated more improvement in bodily pain, better physical function and a lower level of disability than those who had received non-surgical treatment (Weinstein et al., 2006). However, patients had some reservations about undergoing surgery. The possibility that spinal surgery could result in disability or even death as well as the effects that they might suffer from the slow progression of their spinal disorder, may hinder patients from making the decision to opt for surgical treatment (Weiner and Essis, 2006).

With the emphasis on shared decision-making and patient autonomy in health care, patients are given choices relating to their treatment. Those who suffer from disorders of the spine are at a crossroads when faced with having to make a decision on whether to keep pursuing conservative treatments without obtaining much relief or to undergo an invasive surgical procedure for their condition. It is the responsibility of clinicians to provide patients with the necessary information to help them make the best decision for themselves. A better understanding of the factors or concerns that might affect the patients' preference on the issue of surgery is the first step in designing an appropriate intervention that will aid patients in making such a decision.

The aim of this review of the relevant literature was to identify patient-related factors and concerns that influence a patient's decision on whether to undergo a spinal surgery.

## 2. Materials and methods

This was a systemic literature review. A comprehensive literature search was conducted using the electronic databases; MEDLINE, CINAHL Plus, PsycINFO, and Embase. The search was for

quantitative and qualitative papers published in English between the years 2000 and 2015 that focused on the factors and concerns affecting the decision made by patients to opt for spinal surgery. The keywords that were searched included: *spine surgery OR spinal stenosis AND decision making OR consideration OR preference OR willingness OR concern*. Studies were included if the articles were published in peer-reviewed journals, focused on elective spinal surgery, explored factors related to the preference for surgery and targeted patients aged 18 or older who had been diagnosed with intervertebral disc herniation, spinal stenosis or degenerative spondylosis. Studies that focused on emergency conditions such as malignancy or Cauda Equina syndrome (a condition requiring emergency decompression surgery) were excluded.

A total of 1459 papers were identified and an additional 16 articles were identified from the reference lists. After duplicates were removed, 1224 articles remained. The abstracts and titles of remaining articles were screened for eligibility. Exclusion criteria were articles not written in English ( $n = 68$ ); commentary articles ( $n = 24$ ); case reports ( $n = 42$ ); studies of spinal surgery complications ( $n = 297$ ); studies measuring the outcomes of surgical techniques ( $n = 288$ ); studies of anesthetic techniques during surgery ( $n = 224$ ); articles on surgeon preference ( $n = 131$ ); morphological indications for surgery ( $n = 88$ ); and articles on the costs and benefits of surgery ( $n = 25$ ). As a result, a total of 1187 articles were rejected and 37 articles remained.

The full texts of the 37 articles were retrieved and assessed for eligibility and a further 30 were excluded. The 30 excluded articles were: evaluations of a video program on patient preferences ( $n = 4$ ); studies on types of surgery other than orthopedic surgery ( $n = 2$ ); a study on racial variations in the preference for surgery ( $n = 1$ ); studies with no explicit definition of spinal condition ( $n = 3$ ); studies on patient preferences for physiotherapy regimes ( $n = 7$ ) and studies measuring outcomes of surgical techniques ( $n = 13$ ). Ultimately seven quantitative studies were included in this review and no qualitative papers were found. Information was extracted from the seven studies including; study design, sample characteristics, inclusion and exclusion criteria data collection instruments and key findings. The process of searching for and identifying relevant studies is shown in Fig. 1.

### 2.1. Quality assessment

Two reviewers independently appraised the quality of the included studies. The methodological quality was assessed using the Quality Assessment Tool for Studies with Diverse Designs (QATSDD)(Sirriyeh et al., 2012). The assessment tool consists of 16 items with scores of between 0 and 3 for each item. The assessment criteria include an explicit theoretical framework, a determination of the size of the sample, data collection strategies, statistical analyses and a critical appraisal of the findings. Two items in the

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