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Patient Reported Satisfaction and its Impact on Outcomes in Spinal Surgery: A Mini Review

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Abstract

Patient satisfaction has emerged as a critical metric in assessing patient-reported outcomes for healthcare services. The importance of accurately measuring satisfaction is evidenced by the implementation of patient-reported satisfaction as a tool for healthcare reimbursement by the Centers for Medicare and Medicaid Services (CMS). The Patient Protection and Affordable Care Act have formalized the grading of healthcare quality using patient-centric outcomes. Additionally, data indicate that patient satisfaction is directly governed by patient expectations and this expectation-actuality relationship may have a profound impact on patient outcomes. Healthcare providers must have an understanding of the parameters used to measure patient satisfaction and of the associated impact that treatment satisfaction has on patient-reported outcome measures (PROMs). The purpose of this manuscript is to provide a brief overview of how patient satisfaction is defined and measured and to evaluate the implications of poor patient satisfaction on patient-reported outcomes and perceived surgical success. Additionally, we explore the clinical utility of measuring satisfaction on an institutional scale.

Keywords: Patient satisfaction; Spine surgery; Patient-reported outcome; Patient outcome; Expectations; Mini review; Self-report questionnaire

Background

The healthcare field has been experiencing a paradigm shift by placing a greater importance on patient satisfaction as a means of measuring the perceived success of a medical encounter. This movement is evidenced by the new reimbursement policies created by the Centers for Medicare and Medicaid Services (CMS) that are heavily dependent on this data [1,2]. Satisfaction plays an important role in patient care as discontented patients are less likely to attend follow-up appointments as well as comply with treatment plans [3]. Furthermore, while the exact link remains unclear, higher

patient satisfaction has been associated with lower costs, mortality rates and minor complication rates [4,5].

Recently, there has been a marked interest in patient-reported satisfaction following orthopedic surgery; however, there has been less focus on spine procedures. Like many surgeries, spine surgery is generally performed to relieve and reduce patient symptomatology. These procedures are often performed electively and thus patients make their decisions to undergo surgical intervention based on personal expectations and goals [1]. A critical role of the healthcare provider in these circumstances is to assess the patient's understanding of their condition such that they can make an informed decision. Therefore, the purpose of this study is to review the current literature in regards to patient satisfaction after undergoing spine surgery in order to help elucidate the significance of patient satisfaction.

Methods and Materials

A review of the literature was performed using the online database, PubMed. Database search included the terms "spine surgery," "patient satisfaction," "patient expectations," and "functional outcomes." The articles were screened based on the following inclusion criteria: 1) patients undergoing spinal surgery at any level of the spine and 2) utilized patient satisfaction surveys both pre- and post-operatively. There were no exclusion criteria. We reviewed articles written in the time period between 2005 and 2016.

Results and Discussion

In the literature evaluating patient satisfaction in spine surgery, subjective patient satisfaction is correlated with objective patient outcomes. Patient questionnaires are the foundation for study in these areas and are generally completed at various time intervals during the peri-operative period in an attempt to quantify the concept of "satisfaction." The Centers for Medicare and Medicaid Service (CMS) launched a Pay-for-Performance (P4P) initiative in an attempt to address quality deficiencies in all aspects of healthcare by surveying patient experiences after medical encounters [2]. The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) and the Clinician and Group Consumer

Assessment of Healthcare Providers and Systems (CGCAHPS) measure inpatient and outpatient stay satisfaction, respectively [2]. However, the care provided at most institutions is comprised of multiple physicians, nurses, and social workers and patients are generally not aware of each care provider's role. Similarly, Press Ganey surveys are used to quantify patient satisfaction at more than 10,000 health-care organizations and are determinants of CMS reimbursements [6]. Another such questionnaire was the nine-item instrument within the Musculoskeletal Outcomes Data Evaluation and Management System (MODEMS), created by the American Academy of Orthopaedic Surgeons (AAOS), which focused on the process of care in an orthopedist's office [7]. While it was widely used, it was discontinued due to financial constraints.

Patient outcome questionnaires focus more on patients' disability and pain. Scales such as the 100 mm Visual Analog Scale (VAS), Likert Scales, and Numeric Rating Scale (NRS) are incorporated into some of the commonly utilized methods for determining patient outcomes like the Rolland-Morris disability questionnaire, Euro-Qol-5D (EQ-5D), Neck Disability Index (NDI), Cervical Spine Outcomes Questionnaire (CSOQ), and the Oswestry Disability Index (ODI) by monitoring the changes in patients' functional status from pre- to post-operative [7-16]. The studies that we reviewed also used the Zung Depression Scale and the Modified Somatic Perception Questionnaire (MSPQ) in attempts to correlate patients' emotional states to their outcomes and reported satisfaction [9].

By utilizing these questionnaires, numerous variables have been investigated for their relationship with patient satisfaction after undergoing spinal surgery. Factors that have been shown to positively correlate with post-operative patient satisfaction scores include: greater pre-operative self-estimated walking distance, type of procedure performed, region of the spine being operated upon, expectation to return to work, if the surgeon recommended the operative intervention, lower pre-operative expectations, and time spent by the healthcare provider with the patient [7,8,10-12,17,18]. In fact, Etier et al. utilized Press Ganey surveys in an outpatient spine clinic to gauge patient satisfaction and identified both decreased pain scores and perceiving adequate facetime spent by their providers as drivers of higher patient satisfaction [6]. Similarly, more subjective measures such as achievement of expectations, higher perceived and actual improvement in overall function, and greater reduction in pain have also been correlated with higher patient satisfaction [7,13].

Reasons for the satisfaction disparities arising from differing surgical procedures remain unclear, but may be associated with the pathology that the procedures are indicated for. Both McGregor et al. and Toyone et al. reported higher satisfaction from patients who underwent lumbar discectomy as compared to lumbar decompression in their study populations [8,10]. A possible explanation could be that patients suffering from herniated discs are often younger than those suffering from spinal stenosis, which may affect expectations as well as post-surgical outcomes. The region of the spine that is being

treated can also influence patient satisfaction. One study found that patients with lumbar pathology were more satisfied post-operatively than cervical patients. The authors attributed this difference to the differing pathologies seen in the two regions of the spine: lumbar patients, for the most part, experience pain secondary to radiculopathy and neuroclaudication whereas cervical patients oftentimes have myelopathy [7]. Surgical intervention can greatly relieve the pain from the radiculopathy and neuroclaudication, but cervical patients do not experience immediate relief of symptoms from myelopathy [7].

Interestingly, Mazur et al. found that of the patients who were referred to a spine surgeon for consultation, those who received recommendation for surgery had higher satisfaction scores than those who received recommendations against surgery [12]. They postulated that because all of their patients were referred to surgeons, the patients had expectations that they required surgery in order to receive definitive care and that those who did not receive recommendations for surgery did not meet their expectations for definitive care. Frustration may have arisen from not being able to attain what they deemed as the panacea for their problem.

Sigmundsson et al. found that a history of previous spine surgery, smoking, unemployment, back pain exceeding 1 year, and a symptom profile predominated by back pain to be associated with decreased patient satisfaction after spine surgery, of which prior spine surgery decreased the odds of satisfaction the most [18]. It is possible that patients who had to undergo subsequent spine procedures may have been under the impression that their previous surgery should have prevented or even addressed their current symptoms. The study's population included spinal stenosis patients, whose surgery oftentimes aims to relieve leg pain more so than back pain. As such, patients who primarily have back pain may not have had full alleviation of their symptoms, resulting in lower satisfaction rates. Smoking status also showed to have reduced patient satisfaction rates. This finding is most likely secondary to the sub-optimal functional outcomes in smokers as compared to non-smokers demonstrated in earlier studies [19].

A recurring theme within three commonly cited studies is the effect of patient expectations on both satisfaction and functional outcomes [9-11]. The difference between a patient's pre-operative expectation and the actual post-operative outcomes, in particular, can be a significant predictor of patient satisfaction in spine surgery [17]. This gap was first coined the "Expectation-Actuality Discrepancy" (E-AD) by Mannion et al. which suggested that a main factor driving patient satisfaction is the fulfillment of expectations [20]. Indeed, it seems that the most reliable predictor for post-operative patient satisfaction is a small E-AD, signifying that more realistic patient expectations prior to spine surgery tend to leave patients more satisfied with their procedure afterwards [17]. Moreover, it seems that the specific expectations that patients hold may influence their level of satisfaction. Patients who held realistic expectations concerning pain and physical recovery enjoyed a greater

chance of being satisfied [11]. Likewise, higher pre-operative expectations were found to be associated with lower satisfaction despite improved overall functional outcomes. Mancuso et al. examined expectations and satisfaction following lumbar and cervical spine surgery over 2 years [21]. This study found that 90% of lumbar patients and 91% of cervical patients had some amount of their expectations met post-operatively, and that loftier baseline expectations generally led to less fulfillment of those expectations following their procedure [21]. These findings are in agreement with Mannion et al. and Wittiw et al. and represent the logical conclusion that overly optimistic patient expectations may be impossible to attain [17,20]. In contrast, McGregor et al. found patient satisfaction to be fairly constant irrespective of fluctuations in expectations and outcomes at different intervals in time, hypothesized to be due to the multifaceted nature of patient satisfaction [8].

Based on existing literature, the impact of patient satisfaction on functional outcomes remains debatable. The controversy may be attributed to the use of physician-independent measures of functional outcome, the absence of standardized measures for patient satisfaction, and an inability to distinguish patient satisfaction in outcomes from satisfaction with care [8]. A number of studies also examined a population with heterogeneous disease processes, where it is important to consider that specific conditions may be more amenable than others to surgical intervention [7,17]. Soroceanu et al. found that while patient satisfaction was greater after lumbar spine surgery, better functional outcomes were seen following cervical spine procedures [7]. The effect on functional outcome was also noted to change depending on the aspect of life being examined, with a positive correlation between satisfaction and pain relief but not with ability to exercise [7]. Understanding and addressing patient expectations prior to surgery will allow a surgeon to make an informed and appropriate choice based on patients' preferences to achieve results aligned with reported evidence-based outcomes [7].

The limitations of this review arise from the sources used to provide our data. Most of the available literature on spine surgery used different and non-validated metrics to determine satisfaction and patient-dependent outcome measures, which create capacity for potential bias. The studies also looked at heterogeneous patient populations and different sections of the spine, which provides an incomplete picture as surgical intervention may not be as effective for some in attaining satisfaction or desired outcomes. Lastly, satisfaction and outcome measures were found to have been captured at different points in time depending on the study. The data was not able to take into consideration the likelihood that these results could vary over time.

Conclusion

More research is necessary in determining the clinical utility of measuring the subjective parameter of patient satisfaction as it does not always positively correlate with patient's surgical outcomes. As patient satisfaction becomes a core component

of gauging outcomes, healthcare providers in spine surgery, and future researchers, should aim to establish a standardized measure to define both metrics [7,14]. Until then, it is important to consider patient expectations and provide appropriate counseling prior to deciding on surgical intervention, and to be judicious in using our current patient satisfaction measures as a means of declaring surgical success and failure.

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