Patient Satisfaction Reporting After Total Hip Arthroplasty: A Systematic Review

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This review evaluated the quality of patient satisfaction reporting after total hip arthroplasty. The initial search of the MEDLINE database yielded 755 studies. Twenty-four met the inclusion criteria. Most studies provided level III or IV evidence (n=15, 62.5%). The most common method used to assess satisfaction was the 10-point visual analog scale (7 studies, 29.2%), followed by an ordinal satisfaction scale (6 studies, 25.0%). The quality of evidence was poor, and the methods used to assess satisfaction were not standardized. Further research is needed to define the factors that affect patient satisfaction after total hip arthroplasty and how satisfaction is best measured. [Orthopedics. 2017; 40(3):e400-e404.]

Total hip arthroplasty (THA) is widely considered among the most successful surgical procedures in modern medicine.1-3 Modifications of techniques and implant materials over the past 4 decades have improved the longevity of THA and led to excellent results in most patients.2-5 Currently, an estimated 2.55 million individuals in the United States are living with a THA, and the number of THA procedures worldwide is projected to increase in the coming decades.6 Although the cost-effectiveness and efficacy of THA in providing pain relief and functional improvement have been established,7-9 less is known about patient satisfaction postoperatively.

With recent changes in US health care policy, patient satisfaction is becoming an increasingly important outcome measure.10,11 Health care payers, including the Centers for Medicare & Medicaid Services, have begun to use patient satisfaction as a factor in determining reimbursement for surgical procedures.12 Patient satisfaction has been shown to have a direct influence on other objective outcome measures, and satisfied patients are more likely to comply with treatment regimens and follow-up.10 For elective procedures, such as THA, measurement of satisfaction may be particularly important for demonstrating the value of the procedure to patients.

Many reports have described functional and pain outcomes after THA.13-16 However, no previous review has evaluated the quality of satisfaction reporting for THA. This study examined the available literature on patient satisfaction after THA and evaluated the quality of identified studies. The authors hypothesized that there would be a lack of high-quality satisfaction reporting in the current evidence base and that there would be no uniform method of measuring patient satisfaction after THA.

MATERIALS AND METHODS

Search Strategy

A systematic review of the MEDLINE database was performed in June 2015 with the PubMed interface. The search terms “hip arthroplasty satisfaction” and “hip...
replacement satisfaction” were used. The period included was June 2005 to June 2015. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines with a PRISMA checklist were used.\(^17\) The initial search yielded 755 studies. Each study was reviewed for inclusion in the analysis. Inclusion criteria were English language, US patient population, clinical outcome study involving primary THA, and reporting of patient satisfaction. Studies with outcomes of both knee and hip replacement were included if the outcome measures were reported separately for each joint.

Studies conducted outside of the United States and those that did not report clinical outcomes and patient satisfaction measures were excluded. Studies were also excluded if they reported aggregate outcomes of hip and knee replacement without reporting individually by joint or if a pain management or anesthesia-related outcome was the main focus of the study. Studies in which most of the patient population underwent revision THA were excluded, but those that reported mainly on primary THA with a minority of revisions were included.

**Data Collection and Analysis**

Each included study was reviewed for patient demographic data, level of evidence, method used to assess satisfaction, and other patient-reported outcome measures. If provided in the study, predictors of satisfaction were also extracted. The quality of each study was measured with either the Jadad scale\(^18\) (used for randomized controlled trials) or the Newcastle-Ottawa Scale (for all other studies).\(^19\) The heterogeneity of the studies precluded a meta-analysis of the extracted data. Instead, descriptive statistics were performed, and each study was qualitatively analyzed.

**RESULTS**

Review of the initial 755 studies found in the MEDLINE database identified 24 studies for inclusion (Figure). These 24 studies analyzed a total of 4594 patients undergoing THA. The greatest number of studies came from the *Journal of Arthroplasty* (6 articles), followed by the *Journal of Bone and Joint Surgery* and *Clinical Orthopaedics and Related Research* (4 articles each). Two studies provided level I evidence, 7 level II evidence, 8 level III evidence, and 7 level IV evidence. There were 3 randomized controlled trials with a mean Jadad score of 3.3 of 5. All other studies were evaluated with the Newcastle-Ottawa Scale, and for these studies, the score was 5.4 of 9. Only 7 studies (33.3%) had a score of 7 or greater.

Of these studies, 20 (83.3%) provided a clear textual description of the method for assessing satisfaction. The remaining 4 studies (16.7%) reported percentages of satisfied patients or made general statements about overall patient satisfaction, but did not clearly explain the methods used to assess satisfaction. The most common method for assessing satisfaction was the 10-point visual analog scale for satisfaction (7 studies, 29.2%).\(^20-26\) Other methods included an ordinal scale (eg, very satisfied, satisfied, neutral, dissatisfied) (6 studies, 25.0%)\(^27-32\); willingness to undergo surgery again (5 studies, 20.8%)\(^30,32-35\); and a binary scale (yes/no for satisfied) (3 studies, 12.5%)\(^36-38\). For the 3 studies reporting a binary (yes/no) result for patient satisfaction, all showed greater than 80% overall satisfaction. Among the 7 studies that used the visual analog scale (0-10), all reported mean satisfaction of greater than 8.0 at each time point measured.

Most of the studies examined satisfaction with the outcome of arthroplasty surgery (18 studies, 75.0%)\(^20,22-30,32,35-41\); 2 studies (8.3%) examined satisfaction with cosmesis after THA\(^33,42\); 3 studies (12.5%) considered satisfaction with the process of care\(^21,34,43\); and 1 study evaluated satisfaction with physical therapy after THA.\(^31\)
Two studies (8.3%) measured satisfaction at multiple time points, and the rest reported satisfaction only at 1 specific follow-up visit or at the final follow-up visit. One study measured satisfaction at multiple time points during the hospital stay immediately after surgery to examine satisfaction with the process of care. Another study assessed satisfaction in the early postoperative period as well as 1 year postoperatively to differentiate between patient opinions of the delivery of care vs the result of surgery.

Several factors were identified as predicting patient satisfaction after THA. Certain preoperative patient factors, including coexisting lumbar stenosis, more patient-reported allergies, higher preoperative Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score, lower preoperative 12-Item Short Form Health Survey Mental Component score, and higher body mass index, were associated with lower satisfaction postoperatively.

The study of satisfaction with physical therapy after hip replacement found that longer therapy sessions and working with fewer different therapists led to better patient satisfaction. In studies that examined satisfaction with the hip incision, a shorter incision and use of resorbable subcuticular staples instead of regular stainless steel staples led to greater satisfaction postoperatively. Postoperative clinical factors that influenced satisfaction included leg length equality, hip stability, and decreased pain levels.

Only 1 study measured patient expectations preoperatively and found that patients whose expectations were met were more satisfied postoperatively.

**DISCUSSION**

Patient satisfaction is a critical outcome measure after elective orthopedic surgery. Patient satisfaction can directly affect surgical outcomes and may have implications for surgeon and hospital reimbursement because various payers have begun to require reporting of satisfaction. This review of the literature on THA found that few studies examined patient satisfaction, and the overall level of evidence was low. Methods for reporting patient satisfaction are also variable, and standardized or validated satisfaction reporting is lacking.

Orthopedic procedures are often highly successful in terms of restoring function and improving quality of life. Traditional outcome measures have focused on clinical outcome measures; however, there is increasing appreciation of the need to report and adequately measure overall patient satisfaction. A recent commentary by Graham et al highlighted the need for greater reporting of patient satisfaction in the orthopedic literature. The authors noted that patient satisfaction may emerge as a key quality measure in the changing health care climate. Patient satisfaction can be evaluated both in the context of health care delivery and with regard to treatment outcomes. Satisfaction measures may be used to help define the value of elective health care interventions as well as to evaluate the quality of hospitals and other health care institutions.

The importance of patient satisfaction has been better described for total knee arthroplasty. Bullens et al examined the correlation between the physician-assessed Knee Society Clinical Rating System and the patient-reported visual analog scale for satisfaction. These authors found a poor correlation between these measures, suggesting that there may be a discrepancy between surgeon and patient views of surgical outcomes and that patient satisfaction is an additional metric that may be relevant in evaluating outcomes.

Some of the studies included in the current review showed correlations between preoperative factors and postoperative satisfaction. Allen Butler et al found that body mass index of greater than 40 and a lower 12-Item Short Form Health Survey Mental Component score were poor prognostic signs that correlated with
lower satisfaction. Mancuso et al.12 found that fulfillment of patient expectations led to greater satisfaction postoperatively. Understanding the preoperative factors that lead to patient satisfaction could help with patient counseling and may help surgeons to mitigate some of the factors associated with low patient satisfaction. Further, because THA is elective, determining preoperative expectations and predictors of satisfaction may be useful for better surgical candidate selection.

Limitations
This review had limitations. First, it included only studies performed in the United States within the past 10 years. Therefore, some studies in the arthroplasty literature that highlight successful methods for reporting satisfaction may have been missed. However, these exclusion criteria were applied to limit the review to recent relevant literature and decrease the heterogeneity of the patient population. The review included only studies conducted in the United States because previous reports suggested that cultural differences and variations in health care systems may contribute to health preferences and affect satisfaction.45,46 Further, a meta-analysis could not be performed, given the heterogeneity of the data.

Conclusion
Overall, this review showed that few studies have examined patient satisfaction after THA and that both the quality and the level of evidence were moderately low. Although THA is considered a highly successful procedure that improves the quality of life for most patients, data on patient satisfaction are lacking. Current reporting of patient satisfaction is variable, with no standardized method that can be compared across different populations. Future studies are needed to develop and validate a satisfaction outcome measurement tool that will allow orthopedic surgeons to measure patient satisfaction after THA and determine factors that lead to the best outcomes with the greatest patient satisfaction.

REFERENCES


