Cross Cultural Comparison of Patient Based Outcomes and Satisfaction after Total Hip and Knee Arthroplasty

Joan R Williams MD, Christopher Travers BS, Victoria Brander MD, S David Stulberg, MD.

Introduction

Over the past two decades focus has increasingly shifted to patient based outcomes in order to determine the success or failure of medical interventions. Prior studies have shown that patients’ goals and expectations vary by age, diagnosis and lifestyle\(^2\). In addition to this, there is thought that socioeconomic status and culture influence patient based outcomes of total joint arthroplasty. Additionally, it has been shown patients in a lower socioeconomic class have less satisfaction with surgery\(^1\). A recent study of the rates of primary total knee arthroplasty in various populations showed that the rate was higher in those with higher incomes than those with Medicaid and that patients with Medicaid had higher complication rates\(^3\). These findings were echoed in other studies in which patients undergoing total hip arthroplasty who were in the lowest socioeconomic classes had surgery earlier, had more comorbidities at the time of surgery, increased severity of symptoms at presentation, and were less satisfied with their outcome\(^1, 4\).

The purpose of our study was to compare the reasons for undergoing total joint replacement and post-operative satisfaction among patients in different cultures and socioeconomic categories. We hypothesized that the reasons for undergoing surgery would be similar among all groups. We conducted a prospective analysis of patients who were undergoing total hip or knee arthroplasty asking them to list their reasons for undergoing surgery preoperatively and their expectations. Postoperatively they were asked to rate their satisfaction with the procedure.

Materials and Methods

Patients undergoing THA or TKA as part of a charitable outreach program in Nepal in 2010 and in Chicago in 2011 were enrolled into the study. Age and sex matched controls were selected from the senior author’s patient population who underwent elective total hip or knee arthroplasty between 2008-2011. Patients were excluded if the procedure was a revision or if they had had previous surgery on the hip or knee that was being replaced. The study was approved by our institutional review board and informed consent was obtained from each patient. In total 20 Nepalese, 8 American outreach, and 19 American control patients were enrolled and had complete follow-up data.

An extensive questionnaire was developed based off of the work of Noble and Weiss\(^2\). This questionnaire was then narrowed down to four broad categories: pain, individual activities (i.e. dancing, gardening), daily activities (i.e. dressing, stairs, laundry), and athletics (i.e. golf, tennis). All patients were asked to rank how much the possibility of gaining improvement in these four categories impacted their reasons for undergoing surgery preoperatively and how much improvement they expected to obtain from the surgery in each of these categories (Figure 1). At a minimum of six months postoperatively, the patients were again asked to complete a questionnaire which assessed their satisfaction with the procedure and how much improvement they had gotten in each of the categories.
Materials and Methods (cont)

In total there were six patients in both the outreach and elective populations who underwent total hip arthroplasty. There were 22 patients in the outreach and 13 patients in the elective populations who had total knee arthroplasties performed. The discrepancy in the number of patients undergoing total knee arthroplasties results from patients in the outreach group undergoing bilateral procedures.

Results

In total 18 outreach and 19 elective patients had complete data sets for evaluation. The demographic information was similar between the two populations (Table 1). In all groups, pain relief followed by improvement in performing everyday actions was listed as the most important reason for undergoing surgery. 78% of patients in the lower socioeconomic group ranked pain relief as the number one reason for undergoing joint replacement and 71% ranked improvement in their everyday activities as the second most important factor in deciding to undergo surgery. In the elective population 47% ranked pain relief as the number one reason followed closely by improvement in everyday activity which was ranked number one by 37%. 16% of elective patients also ranked improved ability to participate in athletics as their number one reason for undergoing arthroplasty whereas it was not ranked at all by patients in the outreach population (Figure 3).

Of the returned postoperative questionnaires from Nepalese and outreach American patients, all patients reported satisfaction with the outcome of surgery. 86% reported total pain relief and the majority reported significant improvement in their ability to perform everyday activities and functions (Figures 4-6). Postoperatively, the elective patients were also all satisfied, however, they reported a lesser degree of improvement across all categories. 32% reported total pain relief and 53% reported a significant improvement in function.

Discussion

Our study showed that the reasons for undergoing total joint arthroplasty were similar among all groups with pain relief consistently being ranked as the most important reason. There was a trend for elective patients to rank an improvement in athletic abilities more highly than those in lower socioeconomic groups did. All patients were satisfied with their outcomes, however, there was a more moderate degree of subjective improvement among elective patients. This is similar to what other studies have shown. One of the limitations of our study is that we did not take into account postoperative complications that may have been present in the population.

It has been shown that patients who have worse preoperative Harris Hip Scores and other functional outcome measures have worse postoperative outcome measurement scores. It has been suggested that patients in lower socioeconomic groups have worse disease and wait longer to have surgery. While our study did not use validated functional outcome scores to evaluate success of the surgical intervention, our results may suggest that patient expectations play more of a role in patients’ perspective of how successful the intervention was than do traditional outcome measurement tools. This thought was echoed in another study, which indicated that patients with worse preoperative function had higher expectations for their surgical outcomes. This study also found that pain relief and improvement in walking were among the most important expectations for patients.
Discussion (cont)

Our study reinforces the fact that it is important to understand patients expectations prior to surgery as these might have an impact on their satisfaction postoperatively. Other studies have shown that these expectations may vary by age and gender, but they have not examined the expectations among socioeconomic status.7,8.

Table 1

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<th>Outreach</th>
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References