

## Original Research Article

# Assessment patient satisfaction after total hip replacement in Indian population

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## ABSTRACT

**Background:** We aim to assess the satisfaction of patients after total hip replacement in Indian population. Nowadays total hip arthroplasty is the final treatment option provided to patients with unsalvageable, severely arthritic, painful and deformed hips. Patient satisfaction has been measured in multiple orthopaedic procedures, including total hip arthroplasty. THA is a common surgical procedure that improves the lives of patients with end-stage arthritis by decreasing pain, and improving motor function and mobility as measured by validated health-related outcome tools.

**Methods:** Patients were assessed at OPD visit or with telephonic conversation scores are calculated and mentioned in excel sheet. Post-surgery satisfaction score is the score created to measure the satisfaction after total hip replacement. This score contains different questionnaires. These questions include inquiry about relieve of pain, ability to do daily routine activities, requirement of walking aids etc. Score contains total 7 questions with answers.

**Results:** Out of 95 patients we found through this study that about 92.63% of patients are satisfied after total hip replacement. 7.37% of patients are dissatisfied. Satisfaction rate is more as compared to dissatisfaction rate.

**Conclusions:** In present study we have tried to eliminate other factors responsible for dissatisfaction such as hospital ward cleanliness, hospital administration, patient and hospital staff communication. We recommend total hip replacement surgery for end stage arthritis and is more beneficial to the patients in terms of improvement in post-operative pain and function.

**Keywords:** Total hip replacement, Patient satisfaction, PSS score

## INTRODUCTION

Total hip arthroplasty (THA) has been thought of as one of the best treatment for last stage osteoarthritis. Superior post-operative results are usually obtained when it is compared with other joint reconstruction techniques. It provides excellent pain relief and improves functional status and wellbeing. However, 7 to 15% of patients are dissatisfied after surgery.<sup>1-3</sup> In the era of increased health care services marketing, patient satisfaction has been identified as an essential indicator for measuring the quality of care, quantifying value in health care, and gauging the overall success of medical practice.<sup>4</sup> The

focus on satisfaction has been shown to increase patient retention, maximize staff morale, reduce risk of malpractice suits, and optimize professional satisfaction.<sup>5</sup> The term "patient satisfaction" was previously defined as the patient's reaction to several aspects of their service experience.<sup>5</sup> This new emphasis on outcomes that matter to patients led to the development of a wide range of measurement instruments to supplement objective measures, with subjective patient views.<sup>6</sup> The use of patient satisfaction surveys has allowed patients to provide a more holistic evaluation of services and enlighten clinicians on various methods to refine their practice. Patient satisfaction data can also be applied to

the development of new guidelines for the identification of deficiencies, achievements, and improvements in quality of care and health service delivery.<sup>7</sup> In the outpatient setting, satisfaction metrics have been used by healthcare organizations to determine provider compensation via pay-for-performance reimbursement models.<sup>8</sup> Although this has been useful for assisting physicians with gaining a better understanding of how to improve patient outcomes, patient satisfaction is a multifactorial construct that can be influenced by factors unrelated to the actual quality of care.<sup>9</sup> It is now understood that an optimal patient care experience is

associated with higher levels of adherence to recommended prevention and treatment processes, better clinical outcomes, better patient safety within hospitals, and less healthcare utilization. As patient satisfaction data have become a critical component of orthopedic surgery registry data, it is must for clinicians to continue to closely evaluate its involvement in the patient care experience.<sup>10</sup> Our aim was to explore the relationship between patient's level of overall satisfaction with their hip replacement, satisfaction with specific facets of outcome and measured clinical outcomes (PROMs).

**Table 1: Scoring criteria.**

Question	Answers	Score
<b>How satisfied are you with pain relief after surgery?</b>	Very satisfied	4
	Satisfied	3
	Unsatisfied	2
	Very unsatisfied	1
<b>Are you able to do your routine daily activities?</b>	Very easily	4
	Easily	3
	With difficulty	2
	Not at all	1
<b>If given a choice, would you do the surgery again knowing what you know now?</b>	Yes	3
	Not sure	2
	No	1
<b>Would you do the same surgery if you have similar complaints on your opposite limb?</b>	Yes definitely	3
	Not sure	2
	No	1
<b>Would you recommend this surgery to other patients with similar complains?</b>	Yes	3
	Not sure	2
	No	1
<b>After surgery did you developed confidence in yourself?</b>	Very confident	4
	Confident	3
	Not at all	2
	Reduced confidence	1
<b>Do you feel the need of assistance while walking?</b>	Never	3
	Sometimes use a cane	2
	Use cane all the time	1

## METHODS

### *Study design, location and duration*

A longitudinal study of patients with total hip replacements operated in a tertiary care hospital will be done. After hip replacement they are evaluated with oral questionnaires about the satisfaction after surgery at OPD or on telephonic conversation and scored. This study will be conducted in a tertiary care centre KEM hospital, Mumbai over a period of 3 years from December 2019 to December 2022.

### *Inclusion criteria*

Inclusion criteria were; males and females of Indian origin between (21 to 80 age) with end stage hip osteoarthritis,

avascular necrosis of hip, transcervical neck femur fracture with osteoarthritis and patients willing to take part in study after giving consent for regular follow up.

### *Exclusion criteria*

Exclusion criteria were; age <21 and >80 years, revision THR cases, patients with BMI more than 40 and patients not willing for regular follow up.

### *Procedure*

As such there is no such standardized method for measurement of satisfaction but different scores are available to assess satisfaction based on questionnaires and clinical examination. In this study used a satisfaction score as post-surgery satisfaction score (PSS). Patients

were assessed at OPD visit or with telephonic conversation and scores are calculated and mentioned in case record form.

### Score to assess satisfaction PSS SCORE

We created Post surgery satisfaction (PSS) score to measure the satisfaction after total hip replacement. This score contains different questionnaires. These questions include inquiry about relieve of pain, ability to do daily routine activities, requirement of walking aids etc. Score contains total 7 questions with answers. According to that total score is total 24. On the basis of this percentage of patients satisfied after total hip replacement was calculated.

### Sample size

The sample size can be calculated by using the following formula;

$$N = (\sigma_1 + \sigma_2)^2 \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2}{(m_1 - m_2)^2}$$

Where N is total sample size considered in current study,  $\sigma_1$ =standard deviation of preoperative PSS score,  $\sigma_2$ =standard deviation of postoperative PSS score,  $Z_{1-\alpha/2}$ = probability of type 1 error and  $Z_{1-\beta}$ = power of study,  $M_1$ =mean of preoperative PSS score,  $M_2$ = mean of postoperative PSS score.

Sample size will was thus calculated as 84.55~ 85. Considering 10% lost to follow up sample size will be 95. The study was conducted as per the National and International guidelines for conducting research in human subjects. The privacy and confidentiality of the patients is maintained in the study and not revealed except as required by court of law. The identity of participant will not be revealed in publication.

### Statistical analysis

Data will be entered into MS-Excel and then imported into SPSS. Data will be analysed using SPSS version 23.0. Quantitative variables will be expressed in terms of mean and standard deviations. Qualitative data will be expressed in terms of proportions. Paired 't' test of Wilcoxon's sign rank test will be applied based on normality of distribution to compare means. Chi-square test will be applied to compare proportions.

## RESULTS

95 patients above the age range above 21 years and below 80 years who undergone total hip replacement at the tertiary care hospital formed the study population. These patients were selected based on the inclusion and exclusion criteria. Study was conducted from June 2020 to May

2021. Following observations were made and results were derived from the same: There was a male preponderance of cases in our study with 73 (76.84%) male patients and 22 (23.15%) female patients.

Male to female ratio was 3.3:1. Our study showed a dominance of males over females in terms of gender distribution. Out of 95 patients studied, majority belonged to age group 41 to 60 years old (40 cases, 42.10%); followed by 35 cases (36.84%) from age group 21-40 years old. 20 patients (21.05%) were found in age groups 61 to 80 years old. Youngest patient enrolled was 21 years old male with avascular necrosis while oldest ones were 70 years old males. Mean age was found to be 47.54±14.67 years (Table 2).

**Table 2: Distribution based on age groups of patients studied.**

Age group (years)	N	%
21-40	35	36.85
41-60	40	42.10
61-80	20	21.05
Total	95	100
<b>Range: 21-80 years, Mean±SD: 47.54±14.67</b>		

It was seen that most commonly right side of the patient was affected more than that of left side. Out of 95 patients, 53 patients (55.78%) had affected their right side while 42 patients (44.21%) had affected their left side (Table 3).

**Table 3: Distribution based on side affected.**

Side affected	N	%
Right	42	44.21
Left	53	55.78
Total	95	100

In 52.63% of study population (50 patients); diagnosis was avascular necrosis. 28 patients (29.47%) had hip arthritis and 16 cases (16.84%) were diagnosed with transcervical neck femur fracture. One case of osteoarthritis was diagnosed. All patients were assessed based on the questionnaire with respect to the pain, ability to do daily activity, post-surgery confidence, assistance while walking and wanting to do same surgery on opposite limb etc. 88 patients were classified as satisfied while 7 patients were dissatisfied due to uneventful complications that occurred either during procedure or post surgically (Table 4) Patients having total score 20 and above are considered as satisfied.

**Table 4: Distribution according to patient satisfaction.**

Parameters	N	%
Satisfied	88	92.63
Dissatisfied	07	7.37
Total	95	100

## DISCUSSION

Hip osteoarthritis is a frequent and disabling disease, and its prevalence is increasing.<sup>11-14</sup> Total hip arthroplasty is currently the most efficient procedure to reduce disability for individuals with end-stage hip osteoarthritis, once conservative therapies to manage symptoms have been exhausted.<sup>15</sup> It provides excellent pain relief and improves functional status and wellbeing.<sup>15,16</sup> Patient satisfaction represents an established indicator for measuring health care quality, and it is used by hospital management to monitor and improve service quality. From the patient's perspective, overall satisfaction is also a good indicator of self-perceived health condition after surgery.<sup>17,18</sup> Patient satisfaction is multidimensional and provides the means to identify individual problem areas in the hospital and develop approaches for their solution.<sup>19</sup> Satisfaction can be understood as fulfillment of the needs and desires of the patients to a reasonable degree, and is rated differently by different individuals.<sup>20</sup> Chang et al examined service aspects as well as medical care in hospital-based joint replacement and came to the same conclusion as Ramaesh et al that hospitals, due to the heterogeneous patient structure, should identify the factors causing an increase in satisfaction of a plurality of patients.<sup>21</sup> In competitive health care systems, it is important for providers to have patients return for future treatments and not opt for other competitors.<sup>19</sup> Patient loyalty can be managed through the degree of satisfaction.<sup>22,23</sup> This involves identifying the factors that influence patients' willingness to return to the same hospital, talk positively about it with others, and recommending it to friends.<sup>24</sup> Studies identifying the determinants of patients' satisfaction and willingness to return to a hospital are relatively rare in the literature.<sup>25</sup> Therefore, the aim of this study was to identify the medical, procedure and service-related parameters and hospital characteristics significantly related to patient satisfaction and willingness to return after THR. The present study included 95 patients above the age range above 21 years and below 80 years who undergone total hip replacement at the tertiary care hospital. In present study out of 95 cases, 73 were males and 22 were females with male to female ratio of 3.3:1. Mean age was found to be 47.54±14.67 years with majority cases in age group 41-60 years. We found that commonly right side of the patient is affected than left. Our demographic results were comparable to the study conducted by Palazzo et al.<sup>15</sup> In their study, "Determinants of satisfaction 1 year after total hip arthroplasty: the role of expectations fulfilment" they found slight male preponderance with 50.4% of the population were male. Mean age was found to be 63.5±13.5 years which was higher than our study. Indications for surgery were mostly primary or secondary hip osteoarthritis (82%), and avascular necrosis (12%). In present study 52.63% of study population was operated for avascular necrosis. 28 patients had hip arthritis and 16 cases were diagnosed with transcervical neck femur fracture. One case of severe osteoarthritis was diagnosed and treated with the same.

## Limitations

Due to the COVID pandemic during study period the total number of cases for the study were less. This study does not include the satisfaction of patients related to the hospital facilities, patient and staff communication, hospital cleanliness etc.

## CONCLUSION

After surgery, expectations fulfilment was mainly determined by postoperative function and pain relief. Surgeons had more reliable expectations and should better inform their patients of the expected outcomes, particularly regarding relieving night pain and removing the need of a stick. For surgeons interested in improving satisfaction ratings after THA, decreasing the discrepancy between surgeon's and patient's expectations could provide an opportunity for the patient to better understand their likely outcomes and make more realistic goals for themselves. Among the various factors that contribute to patient satisfaction some factors can be managed by the surgeons which should be improved through continuous research. In present study we have tried to eliminate other factors responsible for dissatisfaction such as hospital ward cleanliness, hospital administration, patient and hospital staff communication, low social support, living alone, patient expectations before surgery and have used satisfaction questionnaires which focuses more on surgical procedure done so we found that the patients had more satisfaction as we eliminated other factors from post-surgery satisfaction questionnaires.

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