

Awareness About Total Knee Arthroplasty Among Elderly Patients in a Tertiary Hospital of Nepal: A Cross-Sectional Study

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Article History

Received: 2nd May, 2025

Acceptance: 5th June, 2025



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Abstract

Introduction: Total knee arthroplasty (TKA) is the definitive treatment for end-stage knee osteoarthritis. In Nepal, the prevalence of osteoarthritis is rising, yet there is limited data on patient awareness about TKA. This study aimed to assess the level of awareness about TKA among elderly patients in a tertiary hospital in Nepal.

Methods: A descriptive, cross-sectional single centered study was conducted at Western Regional Hospital, Pokhara, Nepal. A total of 424 patients aged >50 years visiting the orthopedic OPD were included. Data were collected using a structured questionnaire in Nepali, pretested for reliability. Statistical analysis was performed using SPSS version 21.0.

Results: The study found that 40.8% of participants reported suffering from knee osteoarthritis. Most participants identified old age (71.2%) and joint injury (35.4%) as the primary causes of knee problems. Only 28.1% believed that knee osteoarthritis could be treated, with medication (28.1%) and surgery (11.6%) being the most recognized treatment options. Among those who believed surgery was an option (41 participants), the primary goals were to decrease pain (100%) and improve walking quality (95.1%).

Conclusion: The study reveals a significant lack of awareness about TKA among elderly patients in Nepal. Targeted health education programs are needed to improve awareness about total knee replacement and patient outcomes.

Keywords: Total knee arthroplasty; awareness; elderly patients; osteoarthritis; Nepal.

Introduction

Osteoarthritis of the knee is one of the most prevalent musculoskeletal disorders and a leading cause of disability among elderly individuals worldwide.¹ It is a progressive degenerative disease characterized by the breakdown of cartilage, leading to pain, stiffness, and decreased mobility.² The increasing life expectancy and changing lifestyles in have contributed to a rise in the prevalence of osteoarthritis, particularly in older populations.³ While conservative treatments such as physical therapy, pain medications, and lifestyle modifications can provide relief, total knee arthroplasty (TKA) remains the most effective treatment for patients with end-stage osteoarthritis.^{4,5}

Despite its benefits, the utilization of TKA in Nepal remains low due to multiple factors, including financial constraints, lack of specialized healthcare facilities, and limited awareness among

patients. Awareness and understanding of the disease and its treatment options are crucial for timely intervention and improved outcomes.⁶

Studies in other low- and middle-income countries have highlighted the impact of socio-economic factors, education, and accessibility on the awareness and acceptance of TKA.¹ However, there is a paucity of data regarding the level of awareness about TKA among Nepalese patients, particularly in rural settings where healthcare literacy is often lower.

This study aims to assess the level of awareness about TKA among elderly patients attending a tertiary hospital in Nepal. Understanding patient perceptions and barriers to treatment will help in developing targeted health education initiatives and improving patient outcomes. By identifying gaps in knowledge, this study can contribute to strategies for increasing awareness

How to Cite this Article in Vancouver Style:

Ghimire Padhya I, Baral YN, Pokharel J, Bastola P, Baniya S. Awareness About Total Knee Arthroplasty Among Elderly Patients in a Tertiary Hospital of Nepal: A Cross-Sectional Study. 2025;8(1):39-43.

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and access to TKA, ultimately enhancing the quality of life for those affected by knee osteoarthritis and even doctor patient relationship.

Methods

A descriptive, cross-sectional study was conducted at a tertiary level hospital of Government of Nepal, Western Regional Hospital, Pokhara, Nepal.

Elderly patients (>50 years) visiting the orthopedic OPD were included. Convenience sampling was used, and since no previous study on this topic has been conducted in our region, a hypothetical prevalence of 50% knowledge among patients with arthritic knees was assumed for the purpose of sample size calculation.

Using Cochran's formula for sample size estimation, with a 95% confidence level ($Z = 1.96$), a 5% margin of error (e), and setting the estimated proportion (p) at 50% (with $q = 1 - p = 50\%$), the calculated sample size was 385. To account for a possible 10% non-response rate, the final minimum required sample size was adjusted to 424.⁷

A structured questionnaire in Nepali was used to collect data. The questionnaire was pretested for reliability and validity among 30 patients before data collection and Cronbach's alpha was >0.70 and considered acceptable. Data were entered into Microsoft Excel and analyzed using SPSS version 21.0.

The study was approved by the Institutional Review Committee (IRC), and informed consent was obtained from all participants.

Results

A total of 424 individuals were interviewed, with an average age of 66.8 ± 10.89 years. The sample consisted of 148 males (34.9%) and 276 females (65.1%). The majority of participants resided in rural areas (294, 69.3%), while 130 (30.7%) were from urban areas. In terms of education, 246 (58.0%) had no formal education, 98 (23.1%) had basic education (Grade 1–8), 34 (8.0%) had secondary education (Grade 9–12), and 46 (10.8%) had higher education.

Out of the 424 participants, 173 (40.8%) reported suffering from knee osteoarthritis, while 251 (59.2%) did not.

Table 1: Demographic Characteristics of participants included in our study

Characteristic	Frequency (n=424)	Percentage (%)
Gender		
Male	148	34.9
Female	276	65.1
Address		
Urban municipality	130	30.7
Rural municipality	294	69.3
Educational Level		
No formal education	246	58.0
Basic education (Grade 1-8)	98	23.1
Secondary education (Grade 9-12)	34	8.0
Higher education	46	10.9
Knee Osteoarthritis		
Suffering from knee osteoarthritis	173	40.8
Not suffering from knee osteoarthritis	251	59.2

Participants identified multiple causes of knee problems. The most commonly cited cause was old age (302, 71.2%), followed by injury to the joint (150, 35.4%), repetitive stress on the joint (102, 24.1%), obesity (98, 23.1%), gender (86, 20.3%), sedentary lifestyle (82, 19.3%), rheumatological disorders (76, 17.9%), hereditary factors (30, 7.1%), and deformity of the joint (10, 2.4%).

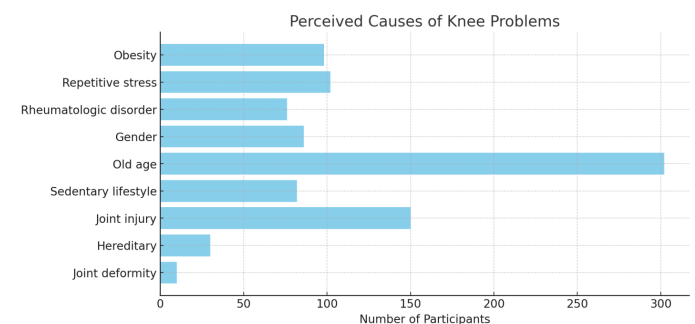


Fig 1: Chart showing perceived causes of knee problems

When asked whether knee problems can occur at any age, 280 (66.0%) participants believed they could not, 102 (24.1%) believed they could, and 42 (9.9%) were unsure.

Participants were asked about their understanding of how knee osteoarthritis is diagnosed. The majority believed it is diagnosed through X-ray (300, 70.8%), followed by MRI (92, 21.7%), and CT scan (32, 7.5%).

The most commonly recognized symptom was knee pain (308, 72.6%), followed by knee swelling (206, 48.6%), knee stiffness (92, 21.7%), and crepitus (38, 9.0%).

When asked if there is any treatment for knee osteoarthritis, 119 (28.1%) participants believed there is, 202 (47.6%) believed there is not, and 103 (24.3%) were unsure.

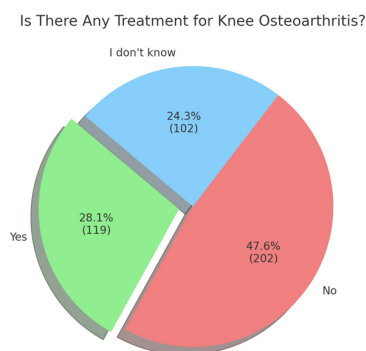


Fig 2: Pie chart showing the patient perception of possibility of treatment

Participants identified several treatment methods for knee problems, including medication (119, 28.1%), weight reduction (58, 13.7%), surgery (49, 11.6%), injections (48, 11.3%), physiotherapy (40, 9.4%), and hot therapy (36, 8.5%).

When asked if surgery is the best option for treating knee osteoarthritis when medication and physiotherapy fail, 41 (9.7%) participants agreed, while 78 (18.4%) disagreed. Among those who agreed, the primary aims of surgery were to decrease pain (41, 100%), improve quality of walking (39, 95.1%), sit cross-legged (8, 19.5%), and return to sports (2, 4.9%). Among those who disagreed, the reasons included not believing surgery is beneficial (71, 91.0%), unavailability of a surgeon (32, 41.0%), post-operative pain (18, 23.1%), and anesthesia complications (12, 15.4%).

Analysis revealed that individuals from rural areas and those with no formal education had significantly lower awareness of total knee arthroplasty (TKA) as a treatment option. For example, only 12 (4.1%) rural participants were aware of TKA, compared to 29 (22.3%) urban participants. Similarly, among those with no formal education, only 8 (3.3%) were aware of TKA, compared to 33 (71.7%) of those with higher education. This highlights a significant gap in awareness and access to information about advanced treatment options like TKA among rural and less-educated populations.

Discussion

This study finds a significant lack of awareness about total knee arthroplasty (TKA) among elderly patients in Nepal. Only 28.1% of participants believed that knee osteoarthritis could be treated, and even fewer (11.6%) recognized surgery as a viable treatment option. This is consistent with studies from other low- and middle-income countries, where awareness of TKA remains low due to limited access to healthcare information and resources. For example, Al-Mohrej et al. (2017) reported that only 30% of the general population in 13 geographic regions had adequate knowledge about TKA, with awareness levels influenced by factors such as education, socioeconomic status, and family history of TKA.^{8,9}

The majority of participants identified old age (71.2%) and joint injury (35.4%) as the primary causes of knee problems, which aligns with the global understanding of osteoarthritis as a degenerative condition exacerbated by mechanical stress. However, misconceptions about the role of obesity (23.1%)

and sedentary lifestyle (19.3%) as causes of knee osteoarthritis were prevalent. This underscores the need for targeted health education programs to address these gaps in knowledge. Similar findings were reported by Ahmed et al. (2020), who found that public awareness of osteoarthritis risk factors was limited, particularly in rural populations.^{10,11}

The study revealed that only 28.1% of participants believed that knee osteoarthritis could be treated, with medication (28.1%) being the most recognized treatment option. Surgery (11.6%) was less commonly acknowledged, reflecting a lack of awareness about TKA as a definitive treatment for end-stage osteoarthritis. This is consistent with findings from Youm et al. (2015), who reported that patients with lower education levels and socioeconomic status were less likely to consider surgery as a treatment option.^{12,13}

Among those who believed surgery was an option, the primary goals were to decrease pain (100%) and improve walking quality (95.1%). However, the majority of participants (78) who did not believe surgery was beneficial cited lack of belief in its benefits (91.0%) and fear of postoperative pain (23.1%) as the main reasons. These findings highlight the need for patient education programs to address misconceptions and provide accurate information about the benefits and risks of TKA.^{8,14}

The findings indicate a significant disparity in awareness regarding TKA based on education level and geographic location. Participants with no formal education and those residing in rural areas were more likely to believe that knee OA is not treatable and less likely to consider surgery as an option. This suggests a critical need for targeted health education campaigns to improve awareness and accessibility of knee OA treatment options, particularly in underserved populations.^{10,15}

The lack of awareness about TKA among elderly patients in Nepal has significant implications for clinical practice. Patients who are unaware of TKA as a treatment option may delay seeking care, leading to worse outcomes and increased disability. (Awareness) This is particularly concerning in rural areas, where access to healthcare services is limited. Studies have shown that patient education programs can improve awareness and decision-making, leading to better postoperative outcomes. For example, Al-Mohrej et al. (2017) recommended the use of media, community events, and social campaigns to raise awareness about TKA.^{8,14} Similar studies conducted among in Saudi Arabia suggested need of intensive awareness for indications and complications of surgical intervention for better outcome of surgery.¹⁶ A demographic study conducted in Nepal showed more than 90% hip and knee arthroplasty occurs in the capital city of Nepal. This also reflects the knowledge and positive attitude of people living in urban area of country.¹⁷

Our study is likely the first of its kind conducted in Nepal, with a large sample size of 424, focusing on rural demographics and using a pre-tested tool in the Nepali language. However, it has some limitations, including being a single-center study and the possibility of selection bias.

Conclusions

The study reveals a significant lack of awareness about TKA

among elderly patients in Nepal. Targeted interventions, such as health education programs and community campaigns, are needed to improve awareness and patient outcomes.

Acknowledgements

We thank patients and volunteers who participated in our study.

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