

Knee Joint Replacement: A Study Of The Patient Profile In Central India

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Abstract

Total knee arthroplasty (TKA) are increasing worldwide [1]. The rates have almost increased to 60% more in the last decade in the elderly. Total knee replacement or Knee arthroplasty has made a revolution the field of orthopedics as the earlier thought of painful conditions like osteoarthritis or rheumatoid arthritis could now be solved by replacing the damaged joint with an artificial joint which dramatically improves the pain of the patient and the person who could barely walk due to pain starts walking again pain free. While most years these joint replacement surgeries were out of reach for common patients, various schemes implemented by the Govt has made it possible that even poor needy patients can get the total knee arthroplasty done and can live a better quality of life free of pain and suffering.

Methodology: This study was a record based observational study conducted retrospectively in the department of Orthopaedics in a tertiary care hospital in central India from 1st March 2021 to 28th February 2022.

Observation and Results: A total of 40 patients were studied in total. Out of them 22 were males and 18 were females. The mean age of the patients was 58.2 years. Out of the 40, 15 patients had yellow ration card i.e. belonging to lower socio economic status while 15 had saffron ration card and only 10 had white ration card. Majority of the population was Hindu (40%) followed by Muslims (25%), Buddhist (25%) and 10% were Christians, Sikhs and Jains. Majority of the population was educated up to 10th standard while 15% were illiterate. Osteoarthritis was the most common indication for hip joint replacement (70%).

Conclusion: Knee joint replacement is being done commonly in the right candidate and helps in alleviating patients from their sufferings.

Keywords: Knee Joint Replacement, Sociodemographic factors, Patients Profile.

INTRODUCTION:

Total knee arthroplasty (TKA) are increasing worldwide [1]. The rates have almost increased to 60% more in the last decade in the elderly [2]. As per the statistics, the number of total knee arthroplasty will be doubled in 2050 as compared to now [3, 4]. With the advent of 21st century, as the lifespan of the people is increasing due to better medical and health care facilities, diseases of old age are also increasing. The government of India too has recognized needs of geriatric population and has incorporated the care of the elderly and this has made people aware about the newer advances like Total Knee Replacement.

Knee is a very complex joint and the kinetics of the knee joint involves interplay of three bones femur, patella and tibia/fibula and the cartilages and ligaments around it [5, 6, 7, 8]. Total knee replacement or Knee arthroplasty has made a revolution in treatment of painful conditions like osteoarthritis or rheumatoid arthritis could now be solved by replacing the damaged joint with an artificial joint which dramatically improves the pain of the patient and the person who could barely walk due to pain starts walking again pain free. [9,10]. Due to economic reasons and the rumors that joint replacements are not safe and effective, many potential candidates for it did not undergo the operation and continued taking painkillers or herbs and applying ayurvedic oils and massaging the joints but the effects of all these are temporary and not up to the mark [2,9,10,11,12]. With the new equipment and the expertise of the surgeons, hardly any complications are seen in arthroplasty operations. Pain is the number one indication for a total knee replacement [1, 2, 10, 12]. The conservative management is initially tried but if it is ineffective, Total Knee Replacement is the only option left. The diseases like osteoarthritis, rheumatoid arthritis are the major disease indications for joint replacement [11, 12, 13].

NEED OF STUDY

The Knee Replacement surgery had been life changing for the patients suffering from osteoarthritis of knee joint which improves their quality of daily living and helps them to get a pain free and function knee joint. The cost of surgery,

instrumentation and implant cost is very high for people in developing country. Since most of the years, the Knee Replacement surgeries were affordable for only higher socio-economic status patients or educated patients. With the advent of various government schemes in Central India, this surgery has been regularly performed and afforded by low socio-economic status too. Hence, to know that which cross-section of population is benefitting from the Total Knee Replacement surgery, we studied a cross-section of population at a tertiary care hospital in rural area.

AIM:

To the study the socio-economic demographic profile of patients undergoing Total Knee Replacement for primary or secondary arthritis of the knee joint at a tertiary care centre in rural area.

METHODOLOGY:

The objectives of the study were to study socioeconomic factors and demographic factors of the cross section of population undergoing Total Knee Replacement at our tertiary care centre in rural area.

This study is retrospective observational study conducted in the Department of Orthopedics in a tertiary care hospital in central India from 1st March 2021 to 28th February 2022 within a study period of 1 year. All patients who underwent the knee joint replacement were selected by convenience sampling and a total of 40 patients were thus selected for the study, various sociodemographic factors were noted, and outcomes were studied. Their pain as per Visual Analogue score was also noted. A Performa was filled by studying the old clinical records and documents of the hospital to analyze factors like Gender, Age, Underlying diseases, socio economic factor, education of the patients, etc.

Microsoft excel and SPSS 16 versions were used to do the statistical analysis and apply appropriate statistical tests to the study findings. A 95% confidence interval was taken to be important and a p value of less than 5% was considered to be statistically significant.

OBSERVATION AND RESULTS:

A total of 40 patients who underwent Total Knee Replacement were studied in total. Out of them 22 were males and 18 were females.

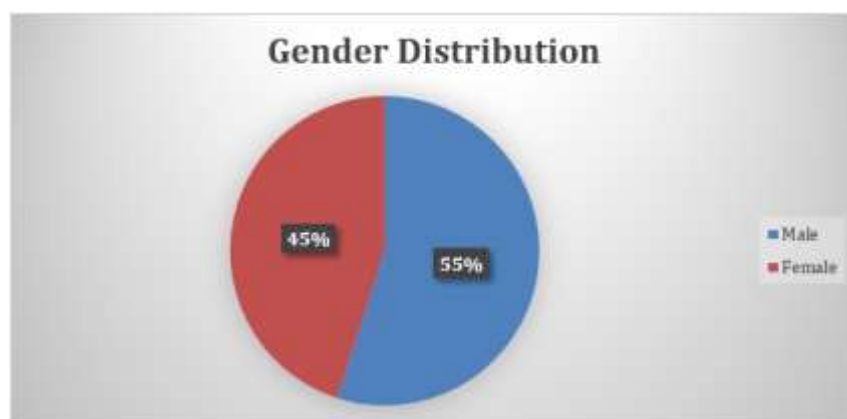


Figure 1: Pie Diagram showing the gender distribution

The mean age of the patients was 58.2 years.



Figure 2: Bar Diagram showing distribution of age group

Out of the 40, 15 patients had yellow ration card i.e. belonging to lower socio economic status while 15 had saffron ration card and only 10 had white ration card. Majority of the population was Hindu (40%) followed by Muslims (25%),

Buddhist (25%) and 10% were Christians, Sikhs and Jains. Majority of the population was educated up to 10th standard while 15% were illiterate.

Table 1: Sociodemographic profile of the patients

Characteristic	Frequency	Percentage
<u>APL/BPL</u>		
Yellow ration card holders	15	37.5
Saffron ration card holders	15	37.5
White ration card holders	10	25
<u>Education level</u>		
Graduate and above	4	10
Higher secondary	6	15
Till 10th	16	40
Upper primary	8	20
Illiterate	6	15

Osteoarthritis was the most common indication for hip joint replacement (70%). The mean VAS score at 12 h was 5.22 ± 1.2 which worsened at 24 h with steady improvement over the next 2 days.

Table 2: Clinical profile of the patients

Characteristic	Frequency	Percentage
<u>Underlying disease:</u>		
Osteoarthritis	28	70
Rheumatoid arthritis	2	5
Avascular necrosis	8	20
Revision arthroplasty	2	5

DISCUSSION:

Total knee replacement is a miracle operation after which a patient who could barely walk a few steps taking support having severe pain could get relief in just a week and can start walking again. This study was done in a tertiary teaching hospital in Central India which caters to mostly the poor and needy population. A total of 40 patients underwent total knee arthroplasty during the study period of 1 year. In our study, main indication for total knee replacement here also in about 70% patients. As per literature, over 95 percent of TKAs in the United States are performed for osteoarthritis [9, 10, 11, 12, 13, 14, 15]. There are few conditions like morbid obesity and severe osteoporosis which may hamper successful knee arthroplasty procedure. There are various reasons for osteoporosis like female sex, age, Asian and white race among the non-modifiable ones and among the modifiable risk factors are sedentary life style, low calcium and vitamin D intake, alcohol, smoking, overweight etc. Despite it being so common, the awareness and knowledge about it is found to be too scarce among the general population. Most patients only realise the osteoporosis after sustaining a fracture themselves or their relatives. While mild and moderate osteoporosis patients can be successfully operated, severe osteoporosis patients were denied the procedure. With the initiation of government schemes, total knee Replacement has been readily available option for severe osteoarthritis patients for lower socioeconomic status and less affording patients. From this study, it was observed that a decent percentage of population belonging to lower socio-economic status, less educated population and geriatric population are regularly getting benefitted from Total Knee Replacement surgery successfully.

Our study was an observational study so definitely it will have its limitations with respect to the extrapolation of the study findings to the general population is considered but still if same study was done over a large period of time with a much bigger sample size then surely we would have got a far convincing and policy changing results.

CONCLUSION:

This study showed that due to better insurances schemes for the poor or better government packages for the poor, better facilities at tertiary care centre and the strong will of clinicians to serve the poor population and geriatric people can also get overtly expensive operations like Total Knee Joint Replacement done to alleviate them from their sufferings. This will help in improving the quality of life and having disease free life. However, the long term study and greater cross-section of study population is required for coming to an accurate conclusion about the longevity of the implant life and long term complication after Total Hip Arthroplasty. Further analysis is required to assess the implant quality that are approved for government packages for the poor and needful patient as revision surgeries can also be expensive for these patients. Hence, from this study we conclude that a good percentage of patients with poor socioeconomic status, geriatric patients and lesser educated patients are successfully getting Total Knee replacement surgery done and thereby improves their quality of daily living.

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