Original Research Paper

# Prevalence of Knee Osteoarthritis Patients in Bhuj, Kutch, Gujarat, India- A Cross Sectional Study

## Medical Science

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**ABSTRACT**

*Background and Aim: Osteoarthritis (OA), also often called 'osteoarthrosis or 'degenerative joint disease,' is the most common form of arthritis. The study is aim to measure the prevalence of knee osteoarthritis patients attending at Gujarat Adani Institute of medical science, Bhuj, Kutch, Gujarat, India.*
*Methods: A cross-sectional study was conducted at department of orthopedics, Gujarat Adani institute of medical science, Bhuj, Kutch, Gujarat. A total of 150 interviewed subjects referred having knee pain and clinically diagnosed by orthopaedic doctor and radiographically confirmed as Knee Osteoarthritis patient. An interviewer-administered questionnaire was used to estimate the prevalence and associated risk factors of Knee osteoarthritis. The data was analysed using SPSS windows 15.0.*
*Results: The age of the population was 40 to 65years. About 46% of the patients having normal BMI and ESR were highest in the range of 50 and above mm/hr. The mean average of WOMAC score was highest in moderate while comparing to other scores.*
*Conclusion: Knee Osteoarthritis is one of the most common rheumatologic problems. The risk factors of the disease are age, socio -economic status and regular activities etc. There is no clear published data available about the prevalence of knee osteoarthritis due to different types of defining of the disease.*

## INTRODUCTION

Osteoarthritis (OA), also frequently called 'osteoarthrosis or 'degenerative joint disease,' is the most widespread form of arthritis 1. It is a leading cause of chronic disability between fourth and fifth decade of life 2. Global statistics reveals over 100 million people worldwide suffer from OA, which is one of the most common causes of disability 3.

Epidemiological profile of this disease in India is not apparent but it is estimated that osteoarthritis (OA) is the second most common rheumatological problem and is most common joint disease with prevalence of 22% to 39% in India4. In the Bhigwan population in India, six percentages of the respondents had chronic knee pain without clinical evidence of OA 5. Knee Osteoarthritis prevalence increases with age, so that about 11% of all women over the age of 60 years have symptoms owing to knee OA. Most knee OA is treated by primary care physicians rather than rheumatologists. The government, private sector, the medical fraternity and NGOs should come together beside the onslaught of chronic disease.

Age is the most controlling risk-factor for OA The prevalence of knee OA increases with age 6; therefore, the impact of this disease will become even more substantial with the aging of the population. Studies have shown that knee OA greatly diminishes health status in the elderly and not only was there a marked raise in the incidence of severe OA with advancing age, but that this age-related increase appeared to be exponential after 50 years of age. Mohamed Ahmed et al7 (2012) a study on prescribing patterns in the management of arthritis in the department of orthopaedics, the study reveals that out of 75 osteoarthritis patients, about 60% are in the age group between 51-65 years. Another study reveals that the prevalence of osteoarthritis between the ages of 30 to 65 years8. The prevalence of OA increases indefinitely with age, because the condition is not reversible. Men are affected more often than women among those aged <45 years, whereas women are affected more frequently among those aged >55 years. Therefore present study was aimed to know the prevalence of knee osteoarthritis in patients attending at Gujarat Adani Institute of medical science, Bhuj, Kutch, Gujarat, India.

## MATERIALS AND METHODS

Present study was performed at department of orthopedics, Gujarat Adani institute of medical science, Bhuj, Kutch, Gujarat. Ethical clearance was taken from the institutional ethics board and informed consent was obtained from all the participants. The interview was structured as a follows, data was recorded on a standardized predesigned and a pre -tested questionnaire. The questionnaire was targeted to Knee Osteoarthritis patients diagnosed by the orthopedic doctor and possible risk factors such as sociodemographic data, physical activity, BMI and ESR level. A total of 150 interviewed subjects referred having knee pain and clinically diagnosed as Knee Osteoarthritis patient, which were qualified, based on the inclusion criteria were enrolled in the trial after obtaining their informed consents. All the patients were assessed and diagnosed on the basis of history, symptoms, and signs related to knee osteoarthritis and radiological examination of the affected joint.

### Statistical analysis

The data was coded and entered into Microsoft Excel spreadsheet. Analysis was done using SPSS version 15 (SPSS Inc. Chicago, IL, USA) Windows software program. Descriptive statistics included computation of percentages. For all tests, confidence level and level of significance were set at 95% and 5% respectively.

### RESULTS

Based on the study results, about 46% of the patients were having normal BMI, 23.33% overweight and least is the obese, the overall mean average is 30. Out of 150 subjects, about 24 (16%) subjects were having ESR level of 50 and above mm/hr and about 4 (2.67%) subjects were having 45-60 mm/hr'. The mean average is 15 and standard deviation is 6.091, it indicates that ESR level is more and inflammation. Based on WOMAC scores out of 150 Knee Osteoarthritis patients, the mean average of 91 patients were having moderate in Pain, Stiffness and Physical functions, it constitute about 63.33%, 51.33% and 67.33% respectively, whereas one patient was extreme and rest of it severe, mild and no pain. Greater parts of the patients were having moderate Pain of knee osteoarthritis patients while doing different activities and the least is extreme.

**Table 1: Distribution of BMI scores in study participants**

| BMI | Number |
|---|---|
| Marginally overweight | 15 |
| Normal | 68 |
| Obese | 22 |

| | |
|---|---|
| Overweight | 34 |
| Underweight | 11 |
| Total | 150 |

**Table 2: Distribution of BMI scores in study participants**

| ESR level | Number |
|---|---|
| 5-10 | 18 |
| 10-15 | 15 |
| 15-20 | 20 |
| 20-25 | 20 |
| 25-30 | 15 |
| 30-35 | 15 |
| 35-40 | 10 |
| 40-45 | 9 |
| 45-50 | 4 |
| 50 and above | 24 |
| Total | 150 |

## DISCUSSION

Present study was performed at department of orthopedics, Gujarat Adani institute of medical science, Bhuj, Kutch, Gujarat. A total of 150 interviewed subjects referred having knee pain and clinically diagnosed as Knee Osteoarthritis patient, which were qualified in the study. Based on the study results, about 46% of the patients were having normal BMI, 23.33% overweight and least is the obese, the overall mean average is 30.The least obese especially in knee osteoarthritis patients mainly due to samples were collected in the District hospital and linked with socio-economic status. Meanwhile various studies reveal that, being overweight is a clear risk factor for developing Osteoarthritis. Population-based studies have consistently shown a link between overweight or obesity and knee OA. Estimating prevalence across populations is difficult since definitions for obesity and knee OA vary among investigators. Data from the first National Health and Nutrition Examination Survey (HANES I) indicated that obese women had nearly 4 times the risk of knee OA as compared with non-obese women; for obese men, the risk was nearly 5 times greater 9

The mean average is 15 and standard deviation is 6.091, it indicates that ESR level is more and inflammation. R.T. Keenan et al10 (2008) the study found that ESR and CRP was more elevated in RA patients than osteoarthritis patients, the cut off values used for elevated levels for both ESR and CRP. Some consider ESR>30 mm/hr as a better number for inclusion, therefore excluding some outliers Wolfe F, 1997 and normal ESR also increases with age. The Erythrocyte Sedimentation Rate (ESR) has been shown to be useful for diagnosis of knee infection and an abnormal result of ESR indicates inflammation.

## CONCLUSION

Knee osteoarthritis (OA) is a frequent condition which represents a major contribution to the burden of physical disability. It is not curable with currently accessible therapeutic options. The only way for reduction of the burden of the disorder is prevention. There is need to take suitable steps to increase awareness regarding knee osteoarthritis in the community regarding importance of daily exercise, proper position of the knee joint during daily activities and also to control the risk factor such as obesity. Adequate treatment and physiotherapy could make patients to manage the pain, maintain mobility and minimize disability.

## REFERENCES

1.  Kelsey JL, Hochberg MC. 1988. Epidemiology of chronic musculoskeletal disorders. Annu Rev Public Health 9:379-401.
2.  Lutzner J, Kasten P, Günther KP, Kirschner S. Surgical options for patients with osteoarthritis of the knee. Nat Rev Rheumatol 2009;5:309-16.
3.  Heiden T, Lloyd D, Ackland T. Knee. 2009. Extension and flexion weakness in people with knee osteoarthritis: Is antagonist contraction a factor? J Orthop Sports PhysTher;39:807-15.
4.  Chopra A, Patil J, Billampelly V, Ralwani J, Tandale H S.. The Bhigwan (India) COPCORD: methodology and first information report. APLAR J Rheumatol 1997;1:145-151.
5.  Syed A. HAQ, Fereydoun Davatchi. Osteoarthritis of the knees in the COPCORD World International Journal of Rheumatic Diseases.2011;.14: 122–129.
6.  Maurer K.. Basic data on arthritis knee, hip, and sacroiliac joints in adults ages 25-74 years. Vital & Health Statistics - Series 11: Data From the National Health Survey 1979; 213: 1-31.
7.  Mohamed Ahmed, Nahid Ali, Zia Ur Rahman, Md. Misbahullah Khan.A study on prescribing patterns in the management of arthritis in the department of orthopaedics. Scholars Research Library Der Pharmacia Lettre 2012; 4 (1):5-27.
8.  Dinesh Bhatia et al. Current interventions in the management of Knee Osteoarthritis. Journal of Pharmacy and BioAllied Sciences 2013 5;1 .
9.  Anderson J, Felson DT. Factors associated with osteoarthritis of the knee in the First National Health and Nutrition Examination (HANES I). Am.J.Epidemiol 1988; 128:179-189.
10. R.T. Keenan et al.. Erythrocyte sedimentation rate and C-reactive protein levels are poorly correlated with clinical measures of disease activity in rheumatoid arthritis, systemic lupus erythematosus and osteoarthritis patients. Clinical and Experimental Rheumatology 2008; 26: 814-819.