

RESEARCH ARTICLE

PREVALENCE OF KNEE OSTEOARTHRITIS AND QUALITY OF LIFE AMONG MIDDLE-AGED ADULTS OF PAKISTAN

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ABSTRACT

Background: Osteoarthritis (OA) is a common and disabling constant Musculoskeletal Disorder that causes significant weight on individual, Health Care Systems, and social economy. With the maturing of the populace and the commonness of undesirable way of life practices, the predominance and disease burden of OA are expanding day by day. **Objective:** To find the prevalence of knee osteoarthritis and quality of life among middle-aged adults. **Methodology:** A descriptive cross-sectional survey was conducted at the major hospitals and physical therapy clinical setups of Pakistan from April to July 2019 (4 months) after approval of IRB/ERC (SRMCH/MS/20/12/41) Suleman Roshan medical college hospital, Tando Adam. The total sample was n=300 selected using non-probability convenience sampling. The middle-aged adults (40-65 years) having moderate to severe knee pain, both male and female were included. According to the American college of rheumatology the criteria for assessing OA by using history, physical examination, and radiographic findings: pain in the knee and one of following over 50 years of age, less than 30minutes of morning stiffness crepitus on active motion and osteophytes and quality of life assessed according to WHOQOL-100 score. The results of the study are presented as frequency, percentages, and mean \pm SD. The data were analysed through SPSS 21. **Results:** The mean age of the study participants (n=300) was a 48.96 \pm 6.804 year. The majority of the participants were female (n=208) and the remaining n=92 were male. The prevalence of OA in the middle aged adults (n=300) n=170 (56.7%). There was significantly reduced QoL among patient having knee OA (37.19 \pm 23.22 ver 42.51 \pm 22.69, p<0.05) as compare to those having knee pain without Knee OA. **Conclusion:** The prevalence of knee pain in middle-aged adults is high and their quality of life is moderately affected.

Key words: Knee, Middle-aged, Osteoarthritis, Prevalence, Quality of life.

INTRODUCTION

Osteoarthritis is a condition influenced principally by older adults. In 2010 there were about 250 million people who had knee osteoarthritis worldwide it was 3.6% of the population.^{1,2} It is stated that in 2004 the OA causes globally moderate to severe impairment in 43.4 million people.³ Sedentary lifestyle is one of the significant reasons for joint inflammation. Lack of physical activity or sedentary lifestyle also caused knee pain, which leads to OA. Individuals with knee OA further limit mobility to avoid pain during activity.⁴ Prevalence of knee pain and symptomatic knee osteoarthritis approximately doubled in women and tripled in men over 20 years.^{5,6} According to a study in American people the age of 45 or above the prevalence of symptomatic osteoarthritis is 20% in women and 10% in men.⁷ But the prevalence for radiographic OA may be between 27% and 80% and the risk factors were an increase in age BMI>30, after menopause in females having a family history or any trauma to the knee joint.^{8,9} OA was related with mental features, for example, torment anxiety, Depression as well as emotional

episodes in OA patients. findings likewise showed that male OA patients were more inclined to the advancement of positive influence contrasted with female OA patients. Serious Depression was seen as in 135(93.8%) male patients Compared to 97(91.5%) females. The outcomes are in accordance with equal investigations done around the world. Curiously, 72.5% mental horribleness, similar to Depression, has been seen in female OA patients.^{10,11} According to the ABS 2017-18 National Health Survey (NHS) individuals matured 45 and done with osteoarthritis are less inclined to see their wellbeing as brilliant or awesome contrasted and individuals without Osteoarthritis. Individuals with Osteoarthritis were 2.1 times as liable to depict their wellbeing as poor (11%) contrasted and those without Osteoarthritis (5.0%)¹² Patients with knee OA had essentially more unfortunate QoL contrasted and sound controls. Additionally Western Ontario and McMaster WOMAC can be utilized as a delicate measure for handicap of patients with knee OA¹³ Knee OA limits the development of patients in 80%

of cases and 25% find themselves unfit to play out the assignments of day to day existence. These Disabilities, basically connected with torment, appeared by trouble in Walking, climbing steps, to the exhibition of family errands or while sitting upstanding and change is joined by a lessening in personal satisfaction and a significant mental effect.¹⁴

There are studies conducted previously on older adults, but middle-aged adults there is paucity in the literature. For that researcher interested to find prevalence and QoL among middle-aged adults patient having a knee pain.

METHODOLOGY

This descriptive cross-sectional survey was conducted at different clinical setups of Hyderabad, Tando Adam, and Tando Muhammad Khan city from April to July 2019 (4 months) after approval of IRB/ERC (SRMCH/MS/20/12/41) Suleman Roshan Medical College Hospital, Tando Adam, Sindh. The total sample was n=300 selected using Non-probability convenience sampling and the sample size was calculated via the Raosoft tool with a confidence level of 95 and a 5% error margin. The middle-aged adults (40-65 years)¹⁵ having moderate to severe knee pain, both male and female were included. Patients with leg length

discrepancy and recent fractures or any trauma were excluded from the study. The data was collected through A self-structured questionnaire which includes age, gender, education level, employment status, and family history. The Knee Injury and Osteoarthritis Outcome Score KOOS questionnaire were also used in this study to find QoL.

According to the American college of rheumatology, the criteria for assessing OA are by utilizing history, physical assessment, and radiographic discoveries: torment in the Knee and one of following north of 50 years old, under 30minutes of morning firmness Crepitus on dynamic movement and osteophytes.¹⁶ The quality of life of patients was likewise evaluated utilizing the KOOS knee survey. The outcomes of the research are presented as frequency, percentages, mean \pm SD and p-value. The data were analysed through SPSS 21.

RESULTS

The mean age of the study participants (n=300) was 48.96 ± 6.804 years. The majority of the participants were female (n=208) and the remaining n=92 were male. The detailed demographics can be seen in table 1.

Table 1: Demographics of participants with Knee pain

Variables	Construct	N(%)	Knee OA	Knee Pain
Gender	Male	92(30.7)	57(62)	35(38)
	Female	208(69.3)	113(54.3)	97(45.7)
Occupation	Job Holder	35(11.7)	22(62.9)	13(37.1)
	Housewife	167(55.7)	85(50.9)	82(49.1)
	Teacher	41(13.7)	28(68.3)	13(31.7)
	private business	57(19.0)	35(61.4)	22(38.6)
BMI	Under weight	8(2.67)	2(25)	6(75)
	Normal weight	91(30.3)	48(52.7)	43(47.3)
	Overweight	81(27)	42(51.9)	39(48.1)
	Obese Class I	76(25.3)	49(64.5)	27(35.5)
	Obese Class II	36(12)	23(63.9)	13(36.1)
	Obese Class III	8(2.6)	6(75)	2(25)

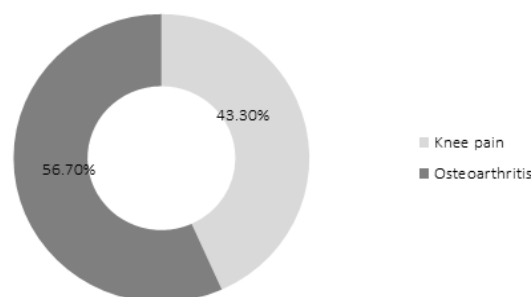


Figure 1: Prevalence of Knee OA in the participants

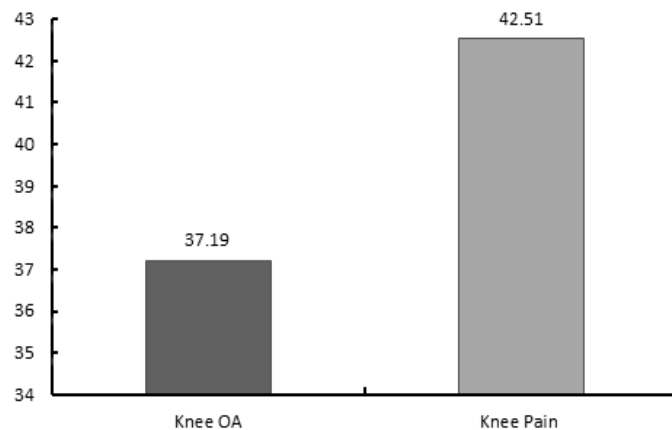


Figure 2: QoL Score (KOOS) of Study participants having Knee Pain and Knee OA

The prevalence of knee OA in middle-aged adults (n=300) was n=170 (56.7%) and remaining n=130(43.30%) having knee pain without OA. (Figure 1).The significantly reduced QoL among patient having knee OA (37.19 ± 23.22 ver 42.51 ± 22.69 , $p < 0.05$) as compare to those having knee pain without Knee OA. (Figure 2).

DISCUSSION

The aim of the this survey was to find out the prevalence of Knee and quality of life among middle-aged adults. The results indicated that Knee OA is highly prevalent in a middle-aged adult with a moderately compromised quality of life.

A study conducted by Thorstensson et al and to determine the natural course of osteoarthritis in middle aged subjects having knee pain and concluded that knee pain in middle aged subjects could be the first sign of osteoarthritis.¹⁷ An epidemiological study conducted in middle aged subject and concluded that 14% of middle aged subjects had moderate to severe chronic pain of back or knee.¹⁸ A study conducted on urban elderly population of Chandigarh using the clinical criteria for an estimation of osteoarthritis knee, reported a prevalence of 34%.¹⁹

In this research we found prevalence of gender-based male having Knee of OA 57(62%), Knee pain 35(38%) and in female, knee OA 113(54.3) and Knee Pain 97(45.7%) The prevalence of gender based knee torment was 60.5% among ladies and 38.6% among men.^{20,21} A Previous report showed that Osteoarthritis was more normal in females than males, as 74 out of 100 patients were female

(74%) and 26 patients were male (26%). This distinction might be clarified by the absence of actual work, portability, social issues particularly in our area, and a higher commonness of corpulence among ladies as a rule, which is reliable with the information from different investigations.¹⁹ In May 2014 a research was conducted in the orthopedics department of Victoria hospital Bahawalpur, 72% of patients out of 100 were diagnosed with OA. 52(81.25%) were females and 20(55.6%) were males among them. In 60 obese patients, osteoarthritis was found in 56 patients.¹⁰

The current study also showed that knee pain is common in over weight and obese patients. A Study led in Iran, that the most highest prevalence pace of knee torment was in subjects with a BMI higher than 30 (31.6%) and BMI 25-30 (24.5%).²²

The main effect of weight on the musculoskeletal framework is related to osteoarthritis Obesity is an all-around perceived worldwide epidemic. The results of our study showed that osteoarthritis is more common in obese individuals. Out of 300 individuals, 170 (56.67%) had osteoarthritis and 120 (40%) were overweight. Thus there is a significant association between osteoarthritis and obesity. A study was done at Southampton University, which observed the heaviness of 525 males and females having age of 45 or more to the seriousness of knee OA. The outcomes showed that the danger of advancement of knee OA increments continuously all through the BMI classes, and the people having BMI 36 or more prominent have a 14 times higher risk of causing knee OA when compared with those who have normal BMI.²³

A sedentary lifestyle is one of the major causes of arthritis. Our study shows that quality of life was affected by Knee OA, finding shows a significant association between QoL and Knee OA. An old study was conducted to find out the sedentary behaviour and physical function, objective Evidence from the Osteoarthritis Initiative. The study demonstrated a strong relationship between the most sedentary behaviour group and worse physical function in adults with knee OA.¹⁸

The main impediment of the current review is that it was done in a solitary area of Pakistan. More KOA patients from different commonplace clinics might have been enlisted to work on the generalizability of the findings.

CONCLUSION

The prevalence of knee pain in the population over the middle-aged who participated in the study was high. It has marked that there is a huge gap in the literature to determine the impact of knee OA on the quality of life and health of the middle-aged population. Future studies should be followed on a larger scale to assess the prevalence of knee OA in other ages and other cities of Pakistan should also include in the study.

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