

# Knee osteoarthritis: Assessment of quality of life in these patients

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**Abstract:** The most prevalent health hazards in the world's population is chronic diseases of musculoskeletal system. The most serious public health issue is knee osteoarthritis, which is caused by aging. It is described as a degenerative joint disease that develops through wear and strain, leading to a continuous decline in articular cartilage, functional limitations, impairment, and eventually a reduction in a person's standard of lifestyle. Around ten percent of people older than 60 frequently are unhappy of this medical condition. While 37 percent of Americans aged 60 or older have osteoarthritis of the knee that has been identified. The rate of knee joint osteoarthritis is predicted to increase near forty percent by 2025 as a result of the growing of the worldwide population. Gender, age, trauma, excessive use, hereditary disorders, and other variables all contribute to the issue getting worsened. In terms of functional ability, discomfort, and functional constraint, the study found that participants with knee osteoarthritis had a poor standard of life. Additionally, a direct correlation within low quality of life and academic level was discovered. It has been shown that persons with low levels of schooling participate in more physical activities and have greater effects is related to this. Disability results from the illness's worsening effects on life expectancy.

**Keywords:** knee osteoarthritis, musculoskeletal, functional limitation, degenerative joint, deterioration, gradually effect, measure of life

## INTRODUCTION

Chronic musculoskeletal illnesses are among the most common health risks for people worldwide. Out of these, knee osteoarthritis, which is linked to aging, is the main public health concern. It is described as a degenerative joint disease that develops through wear and strain, leading to a continuous loss of articular cartilage, functional limitations, disability, and eventually a reduction in an individual's quality of life. (Farr Li J and et al 2013, Wang C and et al 2016, & Rezende MU and et al 2013)

About 10% of people older than 60 frequently complain of this medical condition. While 37% of Americans over 60 have osteoarthritis of the knee that has been

determined. According to predictions, the prevalence of KOA will reach 40% in 2025 as the world's population ages. The following are the elements contributing to the condition's deterioration: (Krasnokutsky S and et al 2013, Heijink A and et al 2012, Ackerman IN and et al 2014, & Chacón JG and et al 2004)

1. Gender
2. Age
3. Trauma
4. Overuse
5. Genetic conditions.

The synovium, bone and hyaline cartilage are most affected tissue in osteoarthritis. It is a joint disease that begins with cartilage degeneration and gradually affects periarticular soft tissues and the subchondral bone, producing chronic inflammation with synovitis, osteophytosis, loss of joint space, bone remodeling and ultimately, it progresses to severe and irreversible joint destruction. Participants who are suffering with knee arthritis are more prone to get physical limitation with the progression of disease, pain and functionality limitation. This progression impact on their activities of daily life which leads to isolation from social life and affect their mental health equally. Therefore, a very important factor which is needed to evaluate in KOA patients is the standard of living of these individuals. The measure of life has described according to World health organization as any individual's perception of his/her position in lifetime in the context of the culture and value systems in which he lives and in relation to his goals, expectations, standards and concerns. Former researches have evaluated the standard of life in patients with knee osteoarthritis. The aim of the study is to evaluate the measure of life of a group of patients with knee osteoarthritis. (Reis JG and et al 2014, Wang C and et al 2016, & Felson DT and et al 2000)

**Methods:** It was a cross sectional study in which 50 participants were recruited in Nangarhar university teaching hospital who met the criterion for inclusion. Non probability sampling method was used. Inclusion criteria: Individuals with unilateral or bilateral diagnosed osteoarthritis aged 40 to 65 years old, with no neurological disorder, both genders, no history of lower limb trauma, and any red flag sign were eligible.

**Exclusion criteria:** Participants who were having any cognitive impairment, central nervous alteration, who had any previous trauma or surgery of lower limb or any other musculoskeletal disease such as rheumatoid arthritis or any metabolic disease were omitted from the research.

**Purpose:** The objective of the research was explained to the participants before giving the cognizant consent. The Ahlbäck classification of osteoarthritis was later defined into categories: mild/moderate and severe.

Mild/moderate degree was regarded as Ahlbäck's grade 1, 2 and 3 (generally with conservative treatment indication), and serious as Ahlbäck's grades 4 and 5 (indication of surgical treatment). SF-36 was used to evaluate the quality of life. The numerical data was presented in mean and standard deviation whereas categorical variables were presented in the form of frequency tables. In case of categorical variables, the association between dependent and independent variables were evaluated by using chi-square test. For comparison of numerical variables students t-test and ANOVA were used.

Results: 50 participants were recruited in the study. The average age of the participants was 57.2 whereas the duration of the diagnosis of the condition was 4 years. There was statistical difference between male and female group. males were more prone to knee osteoarthritis than female. The degree of scholl was showing remarkable difference in the areas of functional capacity and functional limitations and pain. Educated participants had scored better than fewer educated participants. Whereas in occupation characteristics there was also statistically difference due to level of physical activity in the individuals. Active participants had less severity of knee arthritis as matched to retired ones. 48% participants were having severe knee osteoarthritis whereas 45% were having mild condition. Females with more age were having severe condition as compared to males. Multivariate analysis was used to examine the three dependent variables, which were functional capacity, pain, and functional restriction. Covariates included the degree of osteoarthritis, age, time of osteoarthritis diagnosis, gender, level of education, religion, employment, and marital status. There were no independent predictor factors on the dependent variables functional limitation and pain, however, the only predictor in functional capacity was level of education. (Wang C and et al 2016, Alves JC and et al 2013, Garrido CA and et al 2011, & Batsis JA and et al 2014)

## DISCUSSION

The aim of the study was to evaluate the quality of lifestyle in patients with knee osteoarthritis through SF-36 questionnaire. The research has shown that contributors with knee osteoarthritis has decreased perception of the standard of living especially in the section of practical capacity, functional limitation and pain. It has also shown that there was a robust relation between low education level and decreased standard of living in the participants. The participants mostly reported being retired (68%) and a statistically significant difference was observed between active and retired participants. There was a remarked difference between active and retired participants. In the section of functional capacity domain of SF-36 form active participants were more as likened to the participants who were living sedentary life. 52% of participants were showing diagnosis of severe osteoarthritis which was indicating surgery based on the classification. The profile of the sample showed a higher number of female individuals.

The research has shown higher number of females were suffering from knee osteoarthritis. 72% of women were presented with KOA. (12,16,2) (Ciconelli RM and et al 1999, Jhun HJ and et al 2013, & Wang C and et al 2016)

This study finding indicate with published findings that show that osteoarthritis of the knee has a higher incidence and prevalence in females. There was no difference in quality of life assessed by SF-36 in both genders. The mean age was  $57.2 \pm 10$  years old with the average time of diagnosis of the disease ( $8.1 \pm 7.6$  years) is worrisome. These findings indicate that early manifestation of symptoms which has direct impact on reduced severity, improved treatment outcomes and less cost. Another important factor of the study was the evidence of statistically difference amid the degree of schooling and sub domains of SF36 questionnaire which are practical capacity, pain and functional limitation. Participants with higher education had scored better in functional capacity as compared to the participants having less or basic education. The research has shown that functional independence is directly proportional to the degree of independence. Multivariate analysis also confirms this finding by showing that the degree of education worked as the only independent predictor of practical capacity in the patients studied. (14,15,16) (Hermans J and et al 2012, Alkan BM and et al 2014, & Jhun HJ and et al 2013)

Literature has shown a positive relation between degree of schooling and prevalence of knee osteoarthritis. A study conducted by Alkan et al has shown that almost 70% of the participants of the study were having low middle education which resulted in poor measure of living in the group. Another study has given similar founding that less education level could increase the chance of having osteoarthritis up to twice and therefore less quality of life. According to some studies participants with less education have more physical activity according to their occupation. In the same study, as well as low education, other risk factors for developing osteoarthritis were age over 60, obesity, physical labor and feminine gender. The functional capacity domain has declared that participants with severe degree of osteoarthritis has worse score. Previous studies have stated that the greater the degree of osteoarthritis, the lower the perceived standard of living for individuals with this joint disease. As this is an open cross-sectional study, it was not possible to determine the impact of all variables as compared to the general population. Some of the other variables which were not encompassed in the research could have considered as confounding factors which are as body mass index, profession, level of physical activity, family history, and comorbidities. Although it was not the aim of the study and covering all the aspects would complex variables influencing osteoarthritis.

## CONCLUSION

According to the findings of the study, participants with knee osteoarthritis had a negative quality of life in the categories of functional ability, pain, and functional

constraint. Furthermore, a strong link was discovered between a low level of education and a low quality of life. It is related to the fact that people with a low level of education engage in more physical exercise and have greater impacts. As the disease progresses, the quality of life suffers, resulting in disability.

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