

# Health-Related Quality of Life in Knee Osteoarthritis Patients in Vadodara

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**Abstract:** This study investigates the health-related quality of life among 40 knee osteoarthritis patients in Vadodara district. Using the short form 36 questionnaire, it was found that physical health was more affected than mental health. The study concludes that osteoarthritis negatively influences the well-being and daily activities of the patients, with a greater impact on physical health.

**Keywords:** Knee Osteoarthritis, Quality of Life, Physical Health, Mental Health, SF36 Questionnaire, Vadodara

## 1. Introduction

Knee osteoarthritis is one of the major contributors to the impairment of functional abilities. The disability can be extensive, including mobility limitation difficulty with activities of daily living, and social isolation, ultimately resulting in reduced quality of life.<sup>1</sup> Limitation in walking, stair climbing, and squatting are common patient complaints that greatly interfere with activities of daily living and recreation osteoarthritis directly impact other aspects of the patient's life such as social interaction, mental functioning, and sleep quality.<sup>2</sup> According to the WHO "quality of life" is described as an individual perception of his / her position in life in the context of the culture and value systems in which he lives and about his goals, expectations, standards, and concerns.<sup>3</sup> These individuals suffer from a progressively increased impact on their activities of daily living which leads to losses in labor relations, leisure, social life, and sleeping quality, leading also to an important decrease in their quality of life.<sup>4</sup> Thus, an important outcome to be evaluated in patients with knee osteoarthritis is the quality of life of these individuals.<sup>5</sup> Most people with osteoarthritis experience mental health issues such as depression, anxiety, diminished quality of life, physical problems such as difficulties with activities of daily living, falls, and possible substance abuse due to persistent pain and stiffness.<sup>6,7,8</sup> According to recent studies, the health-related quality of life of older adults with osteoarthritis is significantly lower than that of older adults without osteoarthritis<sup>7-11</sup>; furthermore, older adults with osteoarthritis perceived their health status to be worse than those without osteoarthritis.<sup>12</sup>

Osteoarthritis and Depression are closely related, and the physical symptoms of osteoarthritis (fatigue, pain, and insomnia) and cytokines - inflammatory response substances - contribute to the development of depression.<sup>13</sup> Osteoarthritis knee is a major cause of mobility impairment which has an unpredictable and negative impact on health and quality of life. However, Osteoarthritis knee has a major impact on health, and health-related quality of life measures are better indicators of their impact than related mortality rates. The purpose of this study is to investigate the impact of knee osteoarthritis on the physical and mental health aspects of the quality of life among patients in the Vadodara district.

## 2. Materials and Methodology

40 osteoarthritis knee patients of the Vadodara district who are fulfilling the inclusion criteria are included in the study. Written informed consent was obtained from all patients before baseline data. All patients with knee osteoarthritis were assessed regarding demographic detail and health-related quality of life. Inclusion criteria were Patients diagnosed with knee osteoarthritis based upon ACR criteria (Age > 50 years, Morning stiffness < 30 minutes, Crepitus, Bony tenderness), Unilateral or Bilateral knee osteoarthritis, both Male and Female are included. Patient with neurological disorders, fracture, and previous knee injury was excluded. The medical outcome study 36 items short form (SF-36) was used to measure the health-related quality of life (HRQOL) in this study. The SF-36 is a 36 items instrument designed to measure generic health concepts relevant across age, disease, and treatment groups. Scores on each scale from a minimum of 0 to a maximum of 100, the higher the scores less the disability, and the lower the scores more the disability. All respondents were asked to answer based on what they understood of the questions from the SF-36 questionnaire.

## 3. Result

In this study patients with knee pain were taken. Patients' baseline characteristics are shown in Tables 1 and 2 respectively.

**Table 1:** Gender distribution of knee osteoarthritis patients

Gender	No. of Participants
Male	16
Female	24

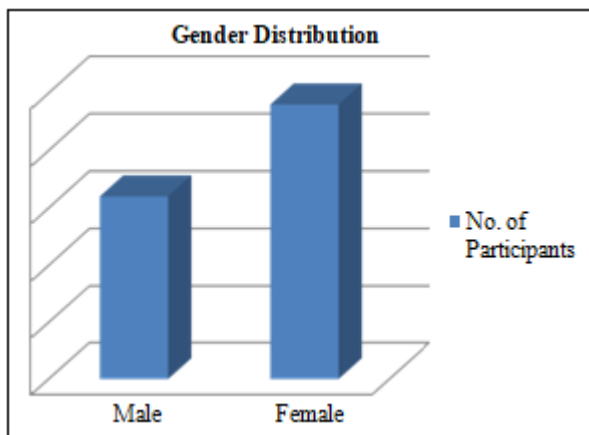


Figure 1: Gender distribution of knee osteoarthritis patients

Table 2: Age distribution of knee osteoarthritis patients

Gender	Mean	SD
Male	61.43	8.28
Female	61.2	7.78

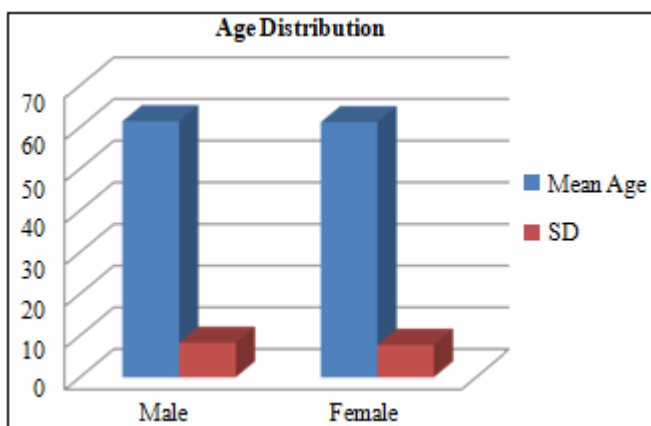


Figure 2: Age distribution of knee osteoarthritis patients

Overall Score of SF-36 Quality of Life Dimensions

Table 3: Affection of quality of life in eight domains of SF-36 Osteoarthritis of the knee

	Domains	Mean	SD
Physical Health	Physical Functioning	52%	0.231
	Physical Role Functioning	54%	0.375
	Bodily Pain	55.44%	0.215
	General Health	52%	0.22
Mental Health	Vitality	49%	0.196
	Social Functioning	67.50%	0.203
	Emotional Role Functioning	72%	0.336
	Mental Health	73%	0.154

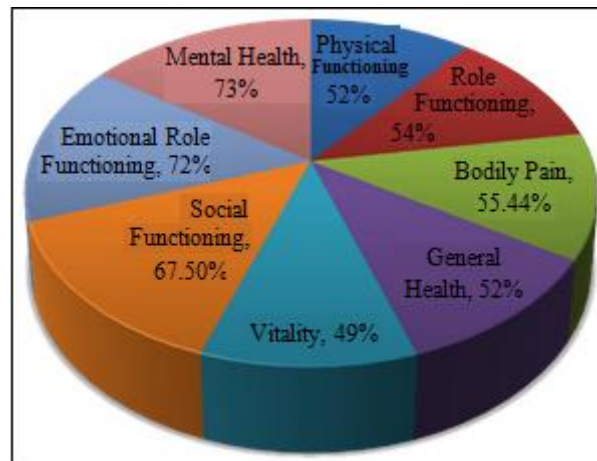


Figure 3: Overall scores of SF-36 quality of life dimensions

Figure 3 demonstrates the affection of quality of life in patients with knee osteoarthritis in 8 domains of SF-36. Mental health is less affected than physical health. As the components of mental health such as Mental health (73%) followed by Emotional role functioning (72%) and social functioning (67.50%) have higher scores which show lesser disability. Whereas the vitality component (49%) has lower scores which represent greater affection.

Whereas, components of physical health show fewer scores such as Bodily pain (55.44%), Physical role functioning (54%), and Physical functioning and General health (52%) score. Hence, it represents greater affection in their quality of life.

4. Discussion

The study aimed to find out the “Health-related quality of life in knee osteoarthritis patients in Vadodara”. In this study 40 knee, osteoarthritis participants were included. 60% were female participants and 40% were male participants with a mean age of 61.3 years and a standard deviation of 7.88.

Health-related Quality of life in osteoarthritis of knee patients was assessed using a short form – 36 questionnaires. It has eight domains which are: Physical functioning, Physical role functioning, Emotional role functioning, Vitality, Mental health, social functioning, Bodily pain, and General health.

In this result, the Physical functioning domain was found to be 52% in osteoarthritis of the knee. The physical functioning domain consists of 10 questions about vigorous physical activities, moderate activities, lifting, stair climbing, bending, kneeling, stooping, walking, bathing, and dressing. Whereas the Physical role functioning domain was found to be 54% in patients with osteoarthritis of the knee. This domain consists of 4 questions about the limitation in work or other activities and the difficulty in carrying out activities or work. This disability is mainly related to pain manifested by difficulty in walking, climbing stairs, and doing activities of daily living is accomplished by decreasing the quality of life and limiting the person’s physical functioning.<sup>14</sup>

Bodily pain was found to be 55.44% in patients with osteoarthritis of the knee. It consists of 2 questions asking

about bodily pain experienced during work and different activities during the last 4 weeks. Patients with osteoarthritis are frequently associated with higher pain and physical limitation in work and different activities that significantly impaired the quality of life.<sup>15</sup>

General health was found to be 52% in patients with osteoarthritis of the knee. It consists of 5 questions asking about the general health condition and its perception. Similarly, Alkam BM (2014) found in his study that the general health of patients with knee osteoarthritis has a significantly poor quality of life compared to healthier individuals.<sup>16</sup>

The vitality domain was found to be 49% in osteoarthritis of the knee. It consists of 4 questions about the energy level and fatigue experienced. The current study shows a higher disability which agrees with a previous study carried out by Sharma et al<sup>15</sup> which studied the impact of anxiety and depression in patients with osteoarthritis and found that the psychological comorbidities are highly prevalent among patients with osteoarthritis.

Social functioning was found to be 67.50% in osteoarthritis of the knee. It consists of 2 questions asking about the interference of physical or emotional health in social activities with friends and family. Patients with knee osteoarthritis have a low perception of quality of life, especially in functional capacity, functional limitation, low educational level, and low quality of life in these groups of individuals.<sup>14</sup>

The emotional role functioning domain was found to be 72% in osteoarthritis of the knee. It consists of 3 questions asking details about the changes in work or activity duration and changes in way of doing activities. The mental health domain was found to be 73% in knee osteoarthritis patients. It consists of 5 questions about nervousness, calmness, peacefulness, downheartedness, and tiredness.

The current study reflected much more improvement in the domain of emotional role functioning and mental health of SF-36 as the higher the scores lesser the disability. HO KW, Pong G<sup>16</sup> inconcluded that mental health deterioration and impairment have been investigated as one of the major contributors to the increasing disability in osteoarthritis.<sup>16</sup>

In a recent study physical health was found to be more highly affected than mental health. As the domain related to physical health status show a relatively lower score as compared to mental health status. Similarly, a study on quality of life in osteoarthritis knee patients shows that there is lesser scoring for the physical dimension than the mental dimension. Hence, concluded that physical health is greatly affected than mental health.<sup>15</sup>

## 5. Conclusion

This study is significant as it provides insights into how knee osteoarthritis affects the quality of life, particularly the physical and mental health aspects, among patients in the Vadodara district. Individuals with osteoarthritis have a low perception of their quality of life in the domains of vitality,

physical functioning capacity, and bodily pain. Therefore, when determining osteoarthritis pain, mental health status, physical health status, and quality of life is considered risk factors. Taking into account the results obtained and stressing the concept that quality of life is related to the state of health of the person's pain and functional limitation caused by osteoarthritis negatively influence the well-being and the performance of the activities of the person's daily life. The study concludes that knee osteoarthritis has a greater impact on the physical health aspect of the quality of life among patients in the Vadodara district. The condition negatively influences the well-being and daily activities of the patients.

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**Conflicts of Interest:** None

**Ethical approval:** Yes

**Consent to participate:** Yes

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