



Quality of life in Elderly Population with grade 1 knee osteoarthritis

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ABSTRACT

Background: Knee osteoarthritis is continuously a degeneration process of the bone and its upper cartilage that gradually deteriorate the joint and its surrounding structures. Increase in pain and decrease in the functional activities often experienced by the patients that leads to the marked decrease in the quality of life of the individual.

Objective of Study: To assess the quality of life of the elderly population with grade 1 knee osteoarthritis.

Methodology: It was a cross sectional descriptive and analytical study, which was conducted in the Niazi Hospital Lahore. 384 patients were taken through sequential non-probability sampling after meeting inclusion criteria. Data was entered in terms of rand sf36. data analysis was done by using spss version 20.

Results: BMI was majorly in between 35 to 40 showed mostly patients were overweight and among them females were more dominant. Pain in the knees while walking was experienced by 64% of the respondents and 94% of the participants had experienced extreme pain during stair climbing. Physical functional activity was restricted in 72% patients. Quality of life was measured by Rand SF 36 scale according to that it was seen physical functioning score is 18.48 and st.7.0 shows that physical functioning is poor.

Conclusion: It is concluded that there is very poor life quality in elderly patients suffering from grade 1 knee osteoarthritis. People suffering from grade 1 knee osteoarthritis have very low knowledge of their life quality in functional activities, physical limitation and pain. So it is concluded that there is a strong direct association between the less education and less perception regarding quality of life. This conclusion was so relevant to the fact that people with level of education if indulged in healthy physical activities, higher impacts can be gained.

Key words: knee osteoarthritis, elder population, quality of life

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INTRODUCTION

Knee osteoarthritis is continuously a degeneration process of the bone and its upper cartilage that gradually deteriorate the joint and its surrounding structures. Most commonly severity of the knee osteoarthritis can be check by a scale named Kellgren Lawrence. In this scale therapist use radiographs of knee joint which help in the diagnoses of the osteoarthritis level and the level of degeneration .knee osteo arthritis is a very common disease. It is mostly common in the people elder than 65 years of age.⁽¹⁾

Quality of life is a multidimensional concept. While the term quality implies the degree of excellence of a characteristic, different people may value different areas of life, and therefore quality of life means different things to different people. Concept "Quality of Life" includes physical and mental decline, impaired role and social functioning. It includes an individual's performance of activities that are essential for the continuing functioning of the wider society.

WHO defines QOL as individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.⁽²⁾

It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of their environment.⁽³⁾ There is a burden of suffering experienced by people with OA and that burden can be significant. Pain and functional impairment are the key domains of that burden, and taken together they often exert a significant reduction in QOL Quality of life is a complex issue because it is influenced by such variables as age, pain, impaired physical function, over weight of individual and many more but in this thesis we are discussing these variables.⁽⁴⁾ International Association for the Study of Pain (IASP) defines pain as "an unpleasant sensory and emotional experience associated with



actual or potential tissue damage, or described in terms of such damage".⁽⁵⁾ Pain is a physiological event in the body that is perceived subjectively and individually. Acute pain has a biological function. It is a warning of actual or potential physiological damage. Acute pain usually stops before healing is completed. Chronic pain is often considered as any pain that has lasted more than 3-6 months. Chronic pain is not simply a sensation, but a global experience, that includes suffering and a distortion of a patient's role in all phases of life, including family, work and social relationships, and can change the patient's self-perception of himself from being an independent, effective human being, to being a dependent, ineffective person.⁽⁶⁾

It is mostly common in the people elder than 65 years of age the ratio of this disease is common in elderly women than in elderly males. If we check the statistics south Africa more than one hundred and fifty millions of people globally are suffering from knee osteo arthritis.⁽⁷⁾ According to the clinical definition of knee osteoarthritis it seems that it is a degenerative disease that is characterized by the articular joint pain and the limitation in the activities of the daily living. Interesting thing is that degenerative osteoarthritis of the joints not only affects the knee joint but to the synovial of the joint. Limitation of the activities of daily living and stiffness of the concerned joint especially in the morning exists.⁽⁸⁾ The feeling of stiffness in osteoarthritis is related with self-efficacy for physical activity, and stiffness also shows a moderate association with physiologic predictors of the risk of falls in older adults. However, Knee stiffness is an important symptom associated with knee OA and so, health care providers can improve physical activity of OA patients with training muscle strength exercises.⁽⁹⁾ According to one pilot study it is proved that if the female patients who are also overweight, if start reducing weight and reduced up to five kilo grams per six months the high risk to get suffer from this degenerative grade one knee osteoarthritis would be no more⁽¹⁰⁾

METHODOLOGY

Data was recorded in terms of scores (RAND SF 36) which was entered into software SPSS and they were analysed properly. The Knee osteoarthritis was classified according to rating system all backs depending upon radio graphically. Classification comprised of an evaluation by radiographs when patients were in anterior posterior standing and monopod support position. Classification was defined by following method, in grade 1 there was minimal to moderate degenerations of the cartilage and the space of the joint was narrow in anterior posterior direction. In grade 2 there was complete destruction of the joint cartilage in anterior posterior direction with no joint space. In grade 3 there was less than 5 millimeter tibial plateau in the anterior posterior direction. In grade 4 there was 5 to 15 millimeter of tibial plateau in the anterior posterior direction. In grade 5 there was more than 15 millimeter of the tibial plateau with very severe subluxation of the tibia in the anterior posterior direction.

This All back classification was after wards divided into the three categories of minimal / mild, moderate and severe. Minimal /mild and moderate grade was designated as grade 1, 2 and 3, that can be treated conservatively without surgery and the severe category was designated as grade 4 and 5 in which the surgery was mandatory. The quality of life of the elderly participants were measured by using scale SF-36 (short form health survey). In SF- 36 there are thirty six items that are grouped into the 8 different sections included 1) functional capacity of person, 2) physical activity of the person, 3) pain felt ,4) general health of person , 5) vitality, 6) social aspects of person life, 7) emotional aspects of person life and 8) mental health of the person. For each person and for each of the eight section we got score when applied measurements from 0 to 100. (from best health to the worst health)⁽¹¹⁾ .The data was collected on specially designed Performa. Frequencies and percentages were used for categorical data. Inclusion criteria were individuals who had medical diagnosis of unilateral or bilateral knee osteoarthritis aged between 40 and 70 years old,



both genders, without neurological disorders, who agreed to sign the Free and Informed Consent form. Individuals who had any central nervous system alteration, cognitive impairment, who had undergone previous knee surgeries or other diseases as-associated with the osteoarticular system⁽¹²⁾ (rheumatic or, metabolic bone diseases, etc.), as well as degenerative diseases, which could affect the quality of life and functional independence of the subject, such as cancer, heart disease, Parkinson's disease, among others, were not included in the study.

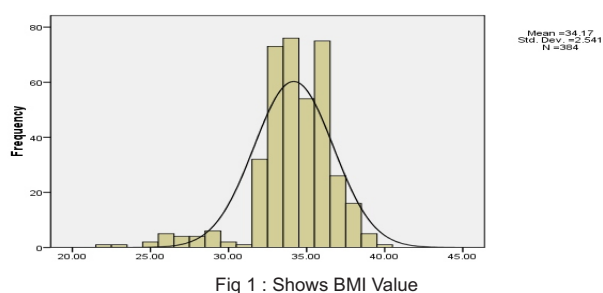
RESULTS

Age distribution seen in the graph shows that the age of patients taken in this thesis is 50 and above 50 years as was written in the inclusion criteria of study. It was seen that in 384 patients there were more females than males there was 78.4% females suffering from grade 1, knee osteoarthritis and 15% was males.

Table 1: Gender, Frequency, Percent

Gender	Frequency	Percent
Male	64	15.7
female	320	78.4
Total	384	94.1

It was seen that BMI is majorly in between 35 to 40. In females more than 25 is overweight and in males more than 30 is overweight and the mean of this study is 34.



Quality of life was measured by Rand SF 36 scale. According to this scale maximum score is 100 lowest score is 48 and score best score is 80 and above 80. In these patients it was seen physical functioning score is 18.48 and st.7.0 shows that physical functioning is poor. Physical

health mean score is 11.0 and st.24.5 which shows the physical health is below average in patients with knee osteoarthritis. Emotional health is 10.9 and st.is 24.7 which shows that emotional health is below average in patients. Energy means score is 42.6 and st is 4.8 which show that energy level is average in knee osteoarthritis. Social functioning life means score is 28.8 and st is 7.3 which show that it is below average. Pain mean score is 18 and st is 10.6 which shows that it is poor and patients faced extreme pain in OA with knee. General health score mean is 24.6 and st is 5.4 which show it is average in patients with grade 1 knee osteoarthritis.

Table 2: Descriptive Analysis Physical Functioning

	N	Mean	Std. Deviation	Std. Error Mean
Physical.Functioning.Score	384	18.4896	7.01061	.35776
Physical.Health.Limit.Score	384	11.0677	24.59660	1.25519
Emotional.Health.Limit.Score	384	10.9375	24.72103	1.26154
Energy.Score	384	42.6302	4.81200	.24556
Emotional.Wellbeing.Score	384	42.6354	3.10182	.15829
Social.Functioning.Score	384	28.8737	7.39710	.37748
Pain.Score	384	18.5612	10.69684	.54587
General.Health.Score	384	23.8021	3.75453	.19160
SF36.Score	384	24.6850	5.42277	.27673

DISCUSSION

Physical function reduces due to pain, muscular weakness and joint disability. Quality of life results measured with RAND-36 shows that there are significant differences in physical function, role limitations due to physical health problems, general health and in bodily pain in patients. Viewing these results through, knee osteoarthritis affects a person's activities (physical function), some parts of body structures and functions (general health and bodily pain) and also some parts of participation (role limitations due to physical health problems). According to surveys individuals over the age of 45 showed radio graphics features of Knee OA varies between 14 to 30%. Most surveys show that the symptomatic radiological disease is between 40 and 80%. 50% of individuals with symptomatic Knee OA also have an associated disability. It was also seen in our study that females are more commonly suffered by knee osteo arthritis than males because of the difference in their anatomy of knee joint and



different kinematics. Repetitive knee injuries and hormonal dis balance is also a cause. It is also seen in our study that more females were affected and majorly among them were obese.

In reviewing different researches we have seen a study in which there was a strong link between overweight and degenerative osteoarthritis, in that study, when the interview was conducted of older adults it was found there is a strong relation between the older adult osteoarthritis and overweight because most of the people were overweight in their past. it was also checked in our study that maximum patients are obese with BMI mean score is 34.4 in patients with grade 1 knee osteoarthritis. Physical activities, weight exercises, and other different managements like medicines are always the first-line management for grade 1 knee OA. regular physical activity is effective for people with grade 1 knee and it is also required to increase strength in their muscles, decrease in pain, and improvement in the functional status of the elderly patients with minimal, mild and moderate grade 1 knee OA. Asia has a higher ratio of the elderly population, people more than 55 years of the age. As there are more elderly, the rate of having grade 1 knee osteo arthritis is more there proportionally. Our research was also conducted on the elderly due to the above mentioned reason.

Patients suffering from grade 1 knee osteo arthritis needs to do exercise twice per day especially the elderly that is suffering from grade 1 knee osteo arthritis, so that maximum improvement can be gained. Isometric exercises especially of the quadriceps helped a lot in improving strength, decrease in the pain and the most important it decrease the risk of fall. Low resistance and high endurance exercises like walking and jogging helps in reducing pain especially in the weight bearing joints. Hydro exercises are very beneficial for grade 1 knee osteoarthritis patient. General health score mean is 24.6 and st is 5.4 which shows it is average in patients with grade 1, knee osteoarthritis. In our study it is seen that there is a strong relation in pain and physical activity in patients with grade 1 knee osteoarthritis. It indicates poor quality of life in patients with grade 1 knee osteoarthritis in

elder population and it can be improved by the above mentioned exercises.

CONCLUSION

Knee Osteoarthritis affects the functional ability negatively. In our patients it was seen physical functioning score was poor. Physical health mean score was below average in patients with knee osteoarthritis. Emotional health was below average in patients. Social functioning life mean score was below average. Pain mean score was poor and patients faced extreme pain in OA with knee.

It is concluded that there is very poor life quality in elderly patients suffering from grade 1 knee osteoarthritis. People suffering from grade 1 knee osteoarthritis have very low knowledge of their life quality in functional activities, physical limitation and pain. So it is concluded that there is a strong direct association between the less education and less perception regarding quality of life. This conclusion was so relevant to the fact that people with level of education if indulged in healthy physical activities, higher impacts can be gained.

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