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Gender-Based Differences between Knowledge, Attitude, and Practices among Osteoarthritis Patients

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Abstract

Background: *To appraise knowledge, attitude, and practices a cross-sectional study was executed among knee osteoarthritis patients visiting the orthopedic ward in Sir Ganga Ram Hospital, Lahore.*

Methods: *A total of 100 patients of knee osteoarthritis (KOA) were selected through non-probability convenience sampling technique. The structured questionnaire was designed to collect data. Desired questions were derived from pre-tested questionnaires. Statistical Package for Social Sciences (SPSS), version 24.0 was used for analysis of data.*

Results: *Analysis of interviewed data shows among knee osteoarthritis patients 62% of participants were female and it shows females tend to develop knee osteoarthritis more often as compared to other sex. Another major determinant of osteoarthritis is old age, the mean ± SD age of patients was 61 years. Higher BMI also influences joints pain about 61 out of 100 patients were above the normal range (normal BMI:18.5-24.9 kg/m²). The lack of awareness and low knowledge about the disease was the same in both genders, as both genders had poor dietary practices including lower calcium and vitamin D intake, sedentary lifestyle and lack of physical activity are the major factors causing joints pain. Falsie attitude and poor practices of*

osteoarthritis patients toward disease tend to be more common among female gender as they don't maintain proper poster while sitting, moving, and standing. Other factors are menopausal women, patients with a history of joints injury, muscle weakness, low bone mineral density and joint laxity all play roles in the development of osteoarthritis.

Conclusion: *It was concluded that obesity, old age, females, poor dietary practices, and lack of knowledge are the risk factors of osteoarthritis. Further researches are needed in the field of nutrition and dietary intake to observe its positive impact on disease.*

Keywords: Osteoarthritis; BMI; Dietary Practices; Attitude; practices; Knowledge

INTRODUCTION

Osteoarthritis (OA) is classified as a type of joint pain that results when the breakdown of joint ligament and underlying bone occurred. It contributes significantly toward disability and functional limitation among elderly[1]. It is the most well-recognized type of joints pain, influencing a large number of individuals[2]. Almost 85% of the population is affected by osteoarthritis were above 60-year age [3]. The prevalence of knee osteoarthritis was 3.12 – 4.61% in the Urban community and 3.61% in Rural North community of Pakistan [4]. A study conducted in Pakistan has shown that 28.1% of the urban population and 25.07% of the rural population have osteoarthritis, among those more than 60 years of age, around 10% of males and 18% of females are influenced [5].

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[3]Fransen, Marlene, Sara McConnell, Alison R. Harmer, Martin Van der Esch, Milena Simic, and Kim L. Bennell. "Exercise for osteoarthritis of the knee." Cochrane database of systematic reviews 1 (2015).

[4]Ghaznavi, Samina, Aneela Altaf Kidwai, Farhat Bashir, and Mahfooz Alam. "Osteoarthritis; Pattern of Symptomatic and Radiographic In the Urban Population of Karachi." Professional Medical Journal 24, No. 10 (2017).

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Symptoms of knee osteoarthritis mostly develop slowly and become worst over time. The damaged joints in this disease is incurable and cannot be reversed but symptoms are aimed and cured to lower the pain caused by osteoarthritis [6]. Signs and symptoms include pain in the joint after moving joints to smallest angle, tenderness of joints, stiffness of joints become worst when the patient wakes up in the morning or after some resting, inability to move your joints to its full range, hearing or feeling a grinding sensation after joint movement and bone spurs [1'7].

Reasons for osteoarthritis may include the history of any past joint injury or fall, limb advancement, and genetic factors[8]. Hazard effects of osteoarthritis are more prominent in the individuals who are being overweight and obese, those having one leg of an alternate length as compared to other leg and have employments that outcome in elevated amounts of joint pressure causing damage to that joints [3]. As far as modifiable variables, being obese (BMI above than 30) was altogether connected with the occurrence of knee osteoarthritis and hip osteoarthritis[9]. Weight reduction may help in the individuals who are overweight[10].

Some factors that may contribute toward developing osteoarthritis are a family history of having osteoarthritis, older adults are more likely to develop osteoarthritis as compared to younger individuals, sex, being overweight or obese is a major factor, physical repetitive stress on your particular joints affecting from osteoarthritis [11], any previous fall or accident causing the damages to your joints, bone disorder or born with malformed joint[12], rheumatoid arthritis,

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metabolic syndrome, comorbidities (presence of additional disease may be one or more than one disease) [13], Vitamin D deficiency, smoking, regular stairs climbing, and sarcopenia. Further studies are needed to show the link between dietary factors, smoking, and sarcopenia with osteoarthritis[14].

The knee osteoarthritis can be avoided by applying early preventive measurements by taking healthy diet, calcium and vitamin D diet rich, maintaining weight and practicing proper yoga every day [15]. Cure for osteoarthritis is still not discovered that is why only the symptoms are aimed to be treated to ease pain and to prevent further progression of the disease[16]. Due to the increasing burden of osteoarthritis, an early adjustment is needed in the early treatment of disease, for example, maintaining a healthy weight, pain control, improving joints functioning and modifying lifestyle[17]. Treatment for osteoarthritis can be divided into two categories surgical treatment and non-surgical treatment[18]. Initially, the non-surgical treatment is recommended for osteoarthritis then after that surgical treatment is done[19].

As recommended by organizations internationally dealing with osteoarthritis and Osteoarthritis Research Society International (OARSI), the first-line treatment for the disease that should be offered is to provide them sufficient awareness and education about the disease

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[20], exercise and losing weight. If there is no other way to overcome disease, surgery like joint replacement surgery is the last option for them[21].

The researcher was aimed to find out the osteoarthritis patient's knowledge, attitude, dietary practices, perceptions, and beliefs regarding osteoarthritis. After knowing the possible risk factors including lack of knowledge, poor attitude, and false dietary practices of patients, behaviour towards disease, awareness could be created to reduce the burden of disease. If these practices and behaviours are not addressed in time, the osteoarthritis patients will be increased.

MATERIAL AND METHODS

Data were collected after the ethical approval from the institutional review board meeting of The University of Lahore by using the non-probability sampling technique. Signed informed consent, 38 men and 62 women were included in this study. A cross-sectional study was conducted at the orthopaedic department of Sir Ganga Ram Hospital Lahore.

Study Duration was 4 months and Sampling Size was 100 adult patients of both genders suffering from osteoarthritis. Patients not suffering from osteoarthritis and joint pain and non-cooperative patients were excluded. Data collection was carried out by using a pre-tested questionnaire/Performa. Desired questions were derived from the following questionnaires: The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and Knee Injury and Osteoarthritis Outcome Score (KOOS).

Data were analysed with the help of the Statistical Package for Social Sciences (SPSS), version 24.0. Frequencies were calculated to determine the attitude, consequences, and practices among osteoarthritis patients.

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RESULTS

In this cross-sectional study total of 100 patients were included, of which 38 patients were male and 62 were female with a mean age of 61 years. The results of the current study showed that BMI had played a major role in osteoarthritis about 61% of individuals suffering from osteoarthritis were either overweight or obese. Among them 35% were overweight with BMI 25-29.9 mg/m^2 and 26% osteoarthritis patients had BMI >30. The demographic data of patients are shown in table-1.

Table-1: Demographic data of patients in the current study

Gender	Male	38
	Female	62
Age	35-40year	20
	40-50years	23
	50-60years	31
	above 60 years	26
Residential area	Urban	75
	Rural	25
Educational status	Illiterate	26
	Middle-matric	38
	Inter	17
	Graduation and above	19
Socioeconomic status	Lower class	17
	Lower middle	32
	Middle class	24
	Upper middle	20
	Upper class	7
BMI	Underweight	3
	Healthy	36
	Overweight	35
	Obese	26
Nutritional status	Undernourished	9
	Normal	60
	Over nourished	31

There was an insignificant association between gender and knowledge of osteoarthritis patients regarding the disease. The knowledge among osteoarthritis patients about the disease was the same in both genders. As shown in table 2.

Table-2: Gender-based differences with knowledge of osteoarthritis patients:

Gender	No.	Mean ± SD knowledge	t	p-value
Male	38	10.32 ± 2.37	-1.414	0.161
Female	62	10.92 ± 1.86		

There was a significant association of gender with attitude and practices. As shown in table 3 and table 4 below. The attitude of patients toward disease and practices by patients had a great impact on gender, as females don't perform adequate practices to lower their pain symptoms and had a false attitude toward disease as compared to the male gender.

Table-3: Gender-based difference with attitude of osteoarthritis patients:

Gender	No.	Mean ± SD attitude	t	p-value
Male	38	9.11 ± 1.371	-2.822	0.006
Female	62	9.84 ± 1.190		

Table-4: Gender-based difference with practices of osteoarthritis patients:

Gender	No.	Mean ± SD practices	t	p-value
Male	38	9.052 ± 0.928	2.068	0.041
Female	62	8.516 ± 1.422		

DISCUSSION

According to this study, there was an association between age and osteoarthritis, osteoarthritis was more common in patients aging above 50 years, 57% of patients aging above 50 years were osteoarthritic. Similar results were found in 2013 study, according to them about 57.16% patients aging above 50 years had osteoarthritis[22].

According to current research, the main factors found by scientist that BMI played a major role in developing osteoarthritis as 61% individuals had BMI above normal and it was also shown that females (62%) are more prone toward the disease as compared to male (38%) [23].

[22]Losina, Elena, Alexander M. Weinstein, William M. Reichmann, Sara A. Burbine, Daniel H. Solomon, Meghan E. Daigle, Benjamin N. Rome et al. "Lifetime risk and age at diagnosis of symptomatic knee osteoarthritis in the US." Arthritis care & research 65, no. 5 (2013): 703-711.
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The current study concluded that women had performed poor practices related to osteoarthritis and poor behaviour regarding the disease. These women performed poor self-practices that can avoid the severity of disease Same results were evaluated from a study performed in 2017 by Jeihooni AK *et al.,* showed that women suffering from osteoarthritis showed insufficient preventive measurements and poor practices and a study conducted in 2018, by Adams J where inadequate self-care practices and poor practices in elderly osteoarthritis women [24'25].

Osteoarthritis patients who have faced Injury or any fall from stairs etc. in the past had a great effect on osteoarthritis patients which showed any kind of injury or fall had restricted the movement of joints in patients and increasing the severity of joints pain in elder osteoarthritis patients. Current showed that 45% of osteoarthritis patients had experienced injury or fall from stairs or by accident in the past at least one time, the female had more percentage of 29%. Similar results were found by Tsonga T *et al.,* in 2015, showed 790 osteoarthritis patients out of 2285 patients had experienced a fall or injury in past about 34.57% patients had a fall at least one time[26].

The knowledge played a major role, as a lower level of knowledge leads to lower knowledge about how to avoid unnecessary work leading toward joints pain and how to cope up with disease symptoms. According to the current study about 26% of patients are illiterate and 38% are below or equal to matriculation. Similar results were found by Perruccio AV *et al.,* in 2016 which showed that 41% had education below matriculation[27].

Dairy product consumption was relatively low in osteoarthritis patients. The association was found among low dairy product intake and osteoarthritis patients. In 2018, Vergis S *et al.* found there should

[24]Jeihooni, Ali Khani, Seyvedeh Farnaz Mousavi, Mahmood Hatami, and Mina Bahmandoost. "Knee osteoarthritis preventive behaviors in women over 40 years referred to health centers in Shiraz, Iran: application of theory of planned behavior." Int J Musculoskelet Pain Prev 2, no. 1 (2017): 215-21.

[25]Adams, Jon, Jason Prior, David Sibbritt, Irena Leisbet Ceridwen Connon, Roger Dunston, Erica McIntyre, and Romy Lauche. "The use of self-care practices and products by women with chronic illness: a case study of older women with osteoarthritis and osteoporosis." In Women's Health and Complementary and Integrative Medicine. Routledge, 2019.

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[27]Perruccio, Anthony V., Rajiv Gandhi, Johnny TC Lau, Khalid A. Syed, Nizar N. Mahomed, and Y. Raja Rampersaud. "Cross-sectional contrast between individuals with foot/ankle vs knee osteoarthritis for obesity and low education on health-related quality of life." Foot & ankle international 37, no. 1 (2016): 24-32.

be a modification in the daily intake of dairy products among osteoarthritis patients[28].

The current study showed depression was somehow linked with osteoarthritis to some extent and the female gender is more anxious in relation to the male gender. According to the current study it was shown that 33% of osteoarthritis patients are suffering from any depression or stress among them 22% of patients were female. Similar outcomes were observed but in a larger amount among osteoarthritis patients in a previous study done by Rathbun AM *et al.,* in 2018 which showed that about 47.76% were having depression along with more female patients of knee osteoarthritis. Also negatively affecting the quality of life in osteoarthritis patients[29].

A recent study showed that caffeine intake is much higher among osteoarthritis patients, 42% consumed tea/coffee 1-2cups/day and 45% consumed 2-3 cups/day, as tea/coffee had oxalate which binds with calcium reducing its availability and excreted out of the body through excretion. It is strongly associated with the prevalence of osteoarthritis. Same results were found by Bang CH *et al.,* in 2019, they found that above 70% patients were consuming 1-2 servings of caffeine per day[30].

In the current study all of the individuals are above 30 and most of the women among them are menopausal and obese due to which hormonal changes going within them they had a low level of estrogen and which also had a great impact on the onset of the disease. A similar conclusion was drawn from a study performed by S.M Hussain where obesity and hormonal changes in women leading toward the severity of the disease[31].

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[30]Bang, Cho Hee, Cholhee Kim, Jae-Hoon Kim, Sung Jae Choi, Gwan Gyu Song, and Jae Hyun Jung. "Is knee osteoarthritis related to coffee drinking? A nationwide cross-sectional observational study." Clinical rheumatology 38, no. 3 (2019): 817-825.

[31]Hussain, S. M., F. M. Cicuttini, B. Alyousef, and Y. Wang. "Female hormonal factors and osteoarthritis of the knee, hip and hand: a narrative review." Climacteric 21, no. 2 (2018): 132-139.

CONCLUSION

The study concluded that lack of knowledge about the disease, lack of awareness about the disease, poor dietary practices, obesity, false attitude and beliefs, low income, poor socioeconomic status, more stairs climbing, bad posture while moving, sitting and standing, lack of exercises, gender and age proved to be associated with the osteoarthritis. The majority of patients had insufficient knowledge about the disease and proved to worsen the symptoms of the disease. Inappropriate attitude with lack of knowledge was found and practices of osteoarthritis patients were inappropriate.

RECOMMENDATION

From current studies it is recommended to take an adequate amount of calcium and vitamin D in the diet as most of the patients were vitamin D and calcium deficient. An adequate amount of exercise and yoga should be performed to keep the joints moving. Avoid intake of caffeine as it binds the calcium thus it doesn't absorb by the body. And avoid carbonated drink because it leeches out calcium from bones that also increases the chances of osteoarthritis. Adequate knowledge should be given to patients so that they can prevent poor practices and false attitudes leading toward OA.

LIMITATIONS

Limitations of the study are that this is a single centred study with a small sample size. Future studies shall be conducted with a larger sample size to establish significant correlations among various parameters if any. Future studies shall also focus on the intervention of special diet and practices among osteoarthritis patients.

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