

Original Article
Orthopaedics

GENDER DIFFERENCES IN HEALTH CARE UTILIZATION AMONG PEOPLE WITH OSTEOARTHRITIS BEFORE SURGICAL INTERVENTION

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Abstract:

Background: Women have higher prevalence of knee osteoarthritis (OA) and experience greater functional disability than men. This study aimed at assessing the differences in health care utilization for knee OA between male and female subjects.

Materials and Methods: The study was conducted at the Department of Orthopaedics in a tertiary care hospital at Puducherry during April 2016 by retrospective analysis of past records of out-patients attending to the hospital with complaints of non-traumatic knee joint pain during the period of May 2013 to March 2016. A detailed analysis of differences between treatment modalities opted by males and females respectively before any surgery was advised to them or due to denial of consent to surgical management by them was compared and contrasted.

Results: A significant majority of females with osteoarthritis of knee joint (96.2%, n= 640) opted for medical management than physiotherapy (39.8%) and Intra-articular therapies (16.5%) when compared to males [OR=3.2, CI: 1.9, 5.6]. A significantly higher number (61.3%, n= 530) of males opted physiotherapy as a management modality [p<0.001].

Conclusion: Women preferred less physically demanding interventions like medical pain management when compared to men who preferred physiotherapy, exercises and invasive procedures for management of OA

knee. This study thus clearly identified the lack of motivation for physical therapy among women who are at risk of faster progression to mobility limitations.

Key-words: Gender differences, Knee Osteoarthritis, non-surgical management

Introduction:

Osteoarthritis (OA) is a mechanical error in the articulation of human joints which is a common leading cause for chronic disability not only physically but also financially.¹⁻⁴ While OA of the knee joint has several risk factors including age, obesity, trauma and genetic profiles, the role of gender remains unclear.^{5,6} Available literature also does not provide insight on gender differences in the severity of OA.⁷ Women have direct influence of sex hormones on their bones leading to reduced bone mineral density. There is no such biological plausibility established for OA in women. But the mode of health care or treatment chose for OA differs between males and females which would pose a great challenge in management of this problem as an orthopaedician. Hence this study aims at assessing the differences in health care utilization for osteoarthritis of knee joint between male and female subjects.

Methodology:

The study was conducted at the Department of Orthopaedics, Sri Venkateshwaraa Medical College Hospital and Research Centre, Ariyur, Puducherry during April 2016 by retrospective analysis of past records of out-patients attending to the hospital with complaints of non-traumatic knee joint pain during the period of May 2013 to March 2016. Patients who had infective, neoplastic, traumatic or any other non-degenerative, inflammatory pathologies of the knee joint were excluded and only clear-cut primary osteoarthritis patients were included in the study. Basic demographic details and treatment profile of these subjects were obtained from the patient charts. A detailed analysis of differences between treatment modalities opted by

males and females respectively before any surgery was advised to them or due to denial of consent to surgical management by them was compared and contrasted.

Statistical Analysis:

Data entry and analysis was performed using STATA version 11 for windows. Student t-test, Chi-square, and Fisher's exact test were used to determine any significant differences between the variables in the compared groups. Bivariate analysis using 95% confidence interval limits was done to obtain odds ratio. A p-value of <0.05 was considered statistically significant.

Results:

A total of 2177 patients attending to the orthopaedics OPD at Sri

Venkateshwaraa Medical College Hospital and research centre, Ariyur, Puducherry for non-traumatic knee joint pain during the study period of May 2013 to March 2016 were studied and 1530 (70.1%) among them were diagnosed to have primary osteoarthritis. The mean age for those with osteoarthritis was significantly ($p < 0.001$) different between the females and males, showing females had an onset at a younger age [Table 1]. This is further evident from Table 2 which shows that the age group 18-64 had significantly higher number of females with osteoarthritis (60%, $n=400$). Most of the male participants were literates (58.9%) as compared to the literate females (47.9%). Majority (52%) of them belonged to lower socio-economic status.

Table 1:
Socio-demographic characteristics of the study participants (N= 1530)

	Males¹ n= 865 (56.54 %)	Females n= 665 (43.46 %)	p value
Mean age \pm SD	62.8 \pm 9.5	58 \pm 12.2	^a t= 8.7, $p < 0.001$
Education status			
Literate	510 (58.9)	319 (47.9)	^b $\chi^2 = 18.3$, $p < 0.001$
Illiterate	355 (41.1)	346 (52.1)	
Socio-economic status			
Class I	121 (14.0)	92 (13.8)	^c $\chi^2 = 2.3$, $p = 0.69$
Class II	143 (16.5)	106 (15.9)	
Class III	157 (18.2)	109 (16.4)	
Class IV	226 (26.1)	169 (25.4)	
Class V	218 (25.2)	189 (28.4)	

a- Independent student t- test figures in () indicate percentages

b- Chi-square test

c- Chi-square for trends

Table 2:
Disparities in treatment for Osteoarthritis between males and females

	Males n= 865 (56.54 %)	Females n= 665 (43.46 %)	OR [95% CI]	p value
Prevalence of Osteoarthritis	72.9% (N=1187)	67.2% (N=990)		Z=3.1, p=0.02
Age groups				
18-44 years	62 (7.2)	90 (13.5)		Z=4.1, p<0.001
45-64 years	446 (51.6)	310 (46.6)		Z=1.9, p=0.05
>65 years	357 (41.3)	265 (39.8)		Z=0.6, p=0.55
Medications	785 (90.8)	640 (96.2)	3.2 [1.9, 5.6]	p<0.001
Non-narcotic analgesics	547(63.2)	620(93.2)	1.8 [1.4, 2.4]	p<0.001
Narcotic analgesics	316(36.5)	225(33.8)	0.8 [0.7, 1.1]	p=0.14
Chondroprotective agents	442(51.1)	459(69.0)	2.1 [1.7, 2.7]	p<0.001
Physiotherapy	530 (61.3)	265 (39.8)	0.4 [0.3, 0.5]	p<0.001
Surface heat therapy	330(38.2)	215(32.3)	0.8 [0.6, 0.9]	p=0.01
Knee strengthening exercises	480(55.5)	210(31.6)	0.3 [0.2, 0.4]	p<0.001
Intra-articular management	232 (26.8)	110 (16.5)	0.5 [0.4, 0.7]	p<0.001
Intra - articular steroid injection	190(22.0)	79(11.9)	0.4 [0.3, 0.6]	p<0.001
Hyaluronic acid injection	42(4.9)	40(6.0)	1.2 [0.7, 2]	p=0.18

1-reference parameter figures in () indicate percentages

A significant majority of females with osteoarthritis of knee joint (96.2%, n= 640) opted for medical management than physiotherapy (39.8%) and Intra-articular therapies (16.5%) when compared to males [OR=3.2, CI: 1.9, 5.6]. A significantly higher number (61.3%, n= 530) of males opted physiotherapy as a management modality [p<0.001]. Women preferred long term intake of Chondroprotective agents like diacerin and glycosaminoglycans (69%) as compared to males [OR=2.1 CI: 1.7, 2.7]. Males had more predilection towards intra-articular injections (26.8%) compared to females (16.5%) [p<0.001].

Discussion:

Osteoarthritis has several modifiable risk factors like obesity,

diet, activity, injury to the joint, type of occupation, muscle strength and various non-modifiable risk factors like age, sex, genetics and ethnicity.² Gender is a non-modifiable risk factor. But the treatment option which a particular gender will select is modifiable. Females have greater prevalence of knee OA and a greater proportion of women have limitation of mobility.⁸ In our study middle aged women had a higher prevalence of OA knee. Before surgical management, the management modalities which the women would opt will save them from mobility limitations. In the present study, women had higher propensity to choose medical management (96.2%) like analgesics and Chondroprotective agents compared to physiotherapy/exercises (39.8%) and intra-articular management (16.5%). Males had better

motivation to go for physiotherapy/exercises (61.3%) which was the reason for lesser proportion of mobility restriction reported in males in previous studies.^{2,7} These observations were consistent with the study done by Bawa HS, Weick JW and Dirschl DR which showed women were 30% and 20% more likely to receive narcotic analgesics and nonnarcotic analgesics than men.⁹ Medical management alone never would suffice to reduce progression of OA knee unless coupled with physiotherapy. In this study, women showed lesser interest in mechanical management and piously adhered to medical management which can lead to greater joint damage and faster progression to disability.

Conclusion:

Women preferred less physically

demanding interventions like medical pain management when compared to men who preferred physiotherapy, exercises and invasive procedures for management of OA knee. This study thus clearly identified the lack of motivation for physical therapy among women who are at risk of faster progression to mobility limitations.

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