

Research Article

A Pilot Study on the Impact of Interventions provided to Patients of Knee Osteoarthritis (KOA) in a Government Multi-specialty Hospital, Chandigarh

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A B S T R A C T

Introduction: Knee Osteoarthritis (KOA) is reported to be a major health problem worldwide. This study aims to ascertain the impact of all the treatments of KOA patients received in a hospital in Chandigarh.

Methodology: A Government multi-specialty hospital in Chandigarh was purposively selected as the study area. For data collection, a semi-structured interview schedule was used. All literate patients with KOA diagnosis who had undergone a minimum of 3 months of therapy and who visited the hospital in the study period were included in the study.

Results: Overall, 46 patients were contacted. The majority (72%) of the patients were female. Patients presented with multiple clinical symptoms; 65% of the patients scored 4 on the Faces Pain Scale. Some (27.5%) of the patients reported KOA in the first three months of the onset of symptoms. The majority (57.5%) of the total patients consulted a doctor within the first three months of the appearance of KOA. Many (47.5%) patients showed improvement in the signs and symptoms after the interventions.

Conclusion: A majority of KOA patients were female. Consultation lag was present within the first three months in most of the cases. The interventions provided improvement in the signs and symptoms in many patients.

Keywords: Knee Osteoarthritis (KOA), Impact of Treatment, Treatment Seeking Behaviour

Introduction

Knee osteoarthritis (KOA) is reported to be a major health problem worldwide.¹⁻⁵ Its aetiology is not entirely clear.

However, the incidence of KOA increases with age.^{6,7} Obesity is a risk factor for the development and progression of KOA. The association between physical activity and KOA remains controversial.^{6,8,9} Previous knee injury and a history of

regular sports participation or heavy physical activity have been identified as risk factors for KOA. Moderate physical exercise is associated with a decreased risk.¹⁰⁻¹⁴

The primary goals of KOA treatment are to reduce pain and improve function and quality of life. Declining enthusiasm for disease-modifying drugs has contributed to increased interest in non-pharmacologic treatments for OA.¹⁵

The objective of this study was to ascertain the impact of all the treatments of KOA patients received in a Government multi-speciality hospital in Chandigarh, India.

Methodology

This cross-sectional study was conducted in a purposively selected government multi-specialty hospital of Chandigarh. For data collection, a semi-structured interview schedule was used to ascertain the interventions and their effect on the patient's health. The grading of the disease was done as per WOMAC Scale (Western Ontario and McMaster Universities Osteoarthritis Index). The sample size was selected as per the time and resources available; all patients who visited the hospital in the study period and those who could be contacted were recruited in the study. In this study, 46 patients of all age groups were contacted. Literate patients with KOA diagnosis who had undergone a minimum of 3 months of therapy were included in this study. Patients suffering from a neurological disorder or unresolved and unexplained disorders were excluded. Of all the patients who were contacted, only 40 fulfilled the inclusion criteria. Data collection was carried out from January 2014 to April 2014 for the preceding year (2013) hospital records.

The hospital was visited during working hours to seek permission from the Medical Superintendent of the hospital to collect data. The patients were asked about the impact of interventions provided. The data thus collected were analysed on a Microsoft Excel sheet; average numbers and percentages were used to interpret the findings.

Consent of the subjects was taken before the collection of data. The subjects were informed about the purpose of the study and were assured that all personal information would be kept confidential and used only for research purposes. Permission was taken from the Medical Superintendent of GMSH-16, Chandigarh for conducting this study in the hospital. Approval was obtained from the ethics committee of the Panjab University.

Results

The total load of the orthopaedics department ranged between 3500-6000 new OPD patients per month on average with the month of July showing the maximum load. In Physiotherapy Department, the load ranged between 1300-1800 new OPD patients per month and in August,

there was the maximum load. The old OPD patients (190-250) or the follow-up patients comprised just 1/4th of the new OPD patients (1000-1600) in the Physiotherapy Department which showed poor compliance to therapy prescribed.

Majority (72%) of the participants in this study were female who majorly ranged from 36-45 years of age, whereas the remaining 28% were male, majorly ranging between 56-65 years. Almost half (47.5%) of the patients were of average body built. Half of the patients were not suffering from any co-morbidity, whereas among the remaining, hypertension was the major ailment.

The literacy rate was higher among males, 54.5% of males were graduates, whereas 27.6% of females had just studied up to the 8th standard. 63.6% of total males were working, whereas 89.6% of total females were housewives. More than half (52.5%) of the patients stayed in nuclear families and 63% belonged to the lower-middle class.

The patients presented with multiple clinical symptoms; 65% of the patients scored 4 on the Faces Pain Scale. Some (27.5%) of the patients reported KOA in the first three months of the onset of symptoms. The majority (57.5%) of patients consulted a doctor within the first three months of the appearance of KOA.

Most of the patients were undergoing multiple therapies, hence the individual effect of each therapy could not be calculated. The majority (65%) of patients were taking home remedies. Most (85%) of the patients were exercising as per the regime prescribed by the doctors, and 40% of these scored grade-3 on WOMAC Scale. 47.5% of the patients had modified their lifestyle as per regime and 47.5% of these patients scored grade-3 on WOMAC Scale. 40% of the patients were applying heat and 43.8% of these participants scored grade-2 on the WOMAC Scale, 15% of the patients were undergoing ultrasound and 66.7% scored grade-3 on the WOMAC Scale.

Patients with the age more than 66 years scored grade-3 on the WOMAC Scale whereas, patients in the age group of 36-45 years scored grade-2 on the scale. Mainly 41.4% of the total females and 36.4% of the total males scored grade-2 on the WOMAC Scale (Table 1).

Many (47.5%) patients showed improvement in the signs and symptoms after the interventions. More males (63.6%) showed improvement in the signs and symptoms as compared to females (41.3%) post interventions. The level of literacy had also shown a linear relation with the improvement in the degree of disease, i.e., graduates showed 84.6% improvement as compared to illiterates who showed just 42.9% improvement. The majority (73.7%) of patients with an average body built were seen to improve after intervention as compared to obese (18.8%) patients.

Only 17% of patients who belonged to 66-75 years of age group showed improvement after interventions as compared to 81.8% of the patients in the age group of 36-45 years who showed improvement. The majority of patients were not suffering from any co-morbidities, whereas others were suffering from multiple ailments. Hypertension was the most common co-morbidity. 50% of the patients suffering from diabetes did not show any

improvement by therapies; 62.5% of the patients were from lower-middle socioeconomic status whereas, 54.5% of the patients from upper-middle socio-economic status did not show any improvement after interventions were provided to them. 68.8% of the patients who were applying heat alone or with other therapeutic measures did not show any improvement after interventions followed by ultrasound (50%).

Table I. Determinants of the Impact of Interventions provided to the Patients of KOA

(n = 40)

Factors affecting Impact	Severity			Total n (%)
	Improved	No change	Worsened	
Gender				
Males	07	03	01	11 (27.5)
Females	12	13	04	29 (72.5)
Education				
Illiterate	03	03	01	07 (17.5)
8th	05	03	01	09 (22.5)
10th-12th	05	01	02	08 (20.0)
Graduation	11	02	0	13 (32.5)
Body type				
Asthenic	02	01	0	03 (7.5)
Average	14	04	01	19 (47.5)
Obese	03	10	03	16 (40.0)
Very obese	0	01	01	02 (5.0)
Age (years)				
36-45	09	02	0	11 (27.5)
46-55	06	02	0	08 (20.0)
56-65	02	06	01	09 (22.5)
66-75	02	06	04	12 (30.0)
Co-morbidities				
Hypertension	04	04	02	10 (25.0)
Diabetes	01	04	03	08 (20.0)
Others	02	0	0	02 (5.0)
None	08	12	0	20 (50.0)
Work-profile				
Working	02	05	02	09 (22.5)
Retired	0	02	01	03 (7.5)
Non-working	17	09	02	28 (70.0)
Socio-economic status				
Upper-high	0	0	0	0
High	02	0	0	02 (5.0)
Upper-middle	04	06	01	11 (27.5)
Lower-middle	12	10	03	25 (62.5)
Poor	1	0	01	2 (5.0)
Very poor	0	0	01	0 (0)
Therapies				
Exercise	14	13	03	30 (75.0)
Lifestyle modification	17	02	0	19 (47.5)
Heat application	11	03	02	16 (40.0)
Ultrasound	01	01	0	02 (5.0)
Home remedies	25	05	03	33 (82.5)
Combination of therapies	22	03	01	26 (65.0)

*The educational status was not recorded in 3 cases.

Discussion

Orthopaedic problems constitute a significant burden on health care services as indicated by the reported case-load.¹⁻⁵ However, our results hint at the under-utilisation of physiotherapy services in the study hospital.

The impact of interventions provided was variable. Oral analgesic and anti-inflammatory agents were perhaps the most commonly prescribed treatments to alleviate KOA symptoms with almost 3 in 4 patients reporting regular use.¹⁶ With ageing, patients with diabetes and hypertension often have coexisting osteoarthritis, which is most frequently managed with non-steroidal anti-inflammatory drugs (NSAIDs) and cyclooxygenase-2 (COX-2) inhibitors.¹⁷

There was evidence of a substantial improvement in the Faces Pain Scale with the introduction of various interventions. This indicated that the interventions provided in the hospital were effective to a varying degree. The majority (56%) who scored 6 came down to score 4 after intervention whereas, there were a few (25%) who went down to score 2. There were some (19%) who complained of not much improvement and these were the patients who scored 4 or 2 on the scale.

Although females were most commonly seen to be suffering from the disease, more of males reported improvement after interventions. Nearly all the female subjects were housewives and the majority showed no improvement after the interventions. It can be concluded that women were neglecting prescribed treatment and missing follow-up appointments due to dependency on their spouses. Besides obesity, the female gender proved to be a risk factor for KOA, whereas regular physical activity during leisure appeared to be protective against KOA.

The majority of obese patients did not show any change and a few even worsened after the interventions. In contrast, average/ asthenic built patients showed improvement. Similarly, very obese patients, though less in number, either showed no improvement or worsened after interventions. The results indicate that obesity resolution was crucial to getting relief from KOA symptoms. A similar association between obesity and the risk of KOA has been reported in previous studies.^{2,3}

Patients with diabetes often have comorbid illnesses, which increase their risk of toxic effects from NSAIDs. Many patients have experimented with nutritional supplements in the belief that these therapies are safe and “natural”. In a survey of patients visiting rheumatologists, 94% of patients reported either having used alternative therapy or having visited an alternative medicine provider.¹⁸

Diabetes has a major effect on connective tissues, which has a significant impact on both the development and outcome

of these diseases of cartilage, bone, ligament, and tendon. An improved understanding of the mechanisms through which diabetes alters connective tissue metabolism should lead to better preventive and therapeutic interventions. In this study, half of the patients suffering from diabetes showed lesser improvement after intervention.

Higher literacy rate and better work profile were seen to improve the results of interventions provided. Patients who had a higher literacy level and a better work profile were keen on living a healthier life as compared to the patients of lower literacy level and who were non-working since the latter were seen to ignore the disabilities caused by KOA. This was also evident as the majority of patients were graduates and the symptoms of nearly all of them improved after interventions.

Patients of upper-middle socio-economic status showed poor improvement in the degree of KOA than the lower-middle class. This may be due to their not showing up for follow up. The major reason for non-compliance was the dependence of patients over their family members due to age, inability to walk for long distances, and standing in long queues in the study hospital. Half of the patients from upper-middle socio-economic status showed no improvement after the interventions as they did not pay heed to the prescriptions. Nearly all of the participants were taking home remedies along with other interventions provided in the study hospital. This may be due to a lack of confidence in the interventions provided or the inefficiency of therapies given to them. Home remedies likely proved to be better than the other therapies.

The subjects who followed the prescribed protocol and regime showed better progress than the irregular patients. Individually tailored or customised exercises along with home-based therapies were the best combination.

Since it was just a pilot study, a full-scale study needs to be done to further examine its findings.

Conclusion

A majority of KOA patients were females. Majority of the patients had a treatment lag of 3 months. The interventions provided improvement in the signs and symptoms in many patients. The caseload of KOA was 10% of the total OPD patients with patients having diabetes showing poor results. Most of the subjects also used home remedies and exercise. Overall the subjects who were undergoing a combination of therapies experienced better improvement. Home remedies also showed good results. The subjects who followed the prescribed regime showed better progress. Individually tailored exercises along with home-based therapies was the best combination.

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