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Pattern of Osteoarthritis among Patients Attending Selected Specialized Physiotherapy Hospital

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Abstract:

Background: *Osteoarthritis (OA) a common disease of aged population and one of the leading causes of disability. Incidence of*

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knee OA is rising by increasing average age of general population. Age, weight, trauma to joint due to repetiting movements in particular squatting and kneeling are common risk factors of knee OA. ***Objective****: This descriptive cross sectional study was conducted to assess the pattern of osteoarthritis among patients attending selected specialized physiotherapy hospital.* ***Methods:*** *A pre-tested, modified, semi-structure questionnaire was used to collect the data with a sample size was 100. Data were entered and analyzed by using SPSS software. Verbal consent was taken before initiation of interview.* ***Results:*** *Most of the patients (40%) were suffering from osteoarthritis in 50-59 years age group. About 22% patients were from 60-69 years age group. Housewife, service holder and businessman were 36%, 28% and 16% respectively. Knee was the most affected (79%) organ of osteoarthritis followed by hip (17%) and both knee & hip (4%). Those who did moderate type of activity, 63% of them suffered from osteoarthritis followed by sedentary activity (32%) and hard worker (5%). Obese and overweight patients were 55% and 39%.* ***Conclusion:*** *Age, occupation and physical activity level may be determinant of osteoarthritis and study result should not be generalized because of small sample size. Further large scale study may be instituted to get actual picture and precise result.*

Key words: Pattern of osteoarthritis

Background

Osteoarthritis (OA) is one of the most prevalent conditions resulting to disability particularly in elderly population. OA is the most common articular disease of the developed world and a leading cause of chronic disability, mostly as a consequence of the knee OA and/or hip OA (1). The economic costs of OA are high, including those related to treatment, for those individuals and their families who must adapt their lives and homes to the disease, and those due to lost work productivity (2). The prevalence of radiographic knee OA has been investigated in

2282 elderly Japanese people aged ≥ 60 years (817 men and 1,465 women) living in urban regions. There was a high prevalence of radiographic of Knee OA .The prevalence of pain in the knee was age-dependent in women, but not in men (3). Symptomatic knee OA was common among the general adult population especially in women of older age groups. In a cross-sectional study of 7 communities in Greece, symptomatic knee OA was observed in 6% (95% CI 5.6-6). The prevalence rate was significantly higher among women than in men and increased significantly with age. Symptomatic knee OA was significantly more common in rural compared to urban and suburban populations. Logistic regression analysis showed a significant association of female sex and age ≥50 years with all sites of OA. In addition obesity and low level of education were associated with knee OA (4). Osteoarthritis of the knee is the most common joint disease in elderly people and associated with significant physical disability (5). Osteoarthritis is the most common prevalent of rheumatic disease, affects more than 40% of western world adults (6). Disease prevalence is estimated at 15.8 million American adults or 12 percent of the population. The overall incidence of newly diagnosed osteoarthritis of the hip or knee is estimated at 200 per 100000 person's years (7). In 1990; an estimated 15.0% of the US population had arthritis. Estimated prevalence rates were 49.4% for persons aged greater than or equal to 65 years. Where Bangladesh there is no real statistic's that how many patients are affected by OA over a year and what is the pattern of osteoarthritis affecting Bangladeshi people. This study was an attempt to explore the pattern of osteoarthritis among patients attending for physiotherapy in a selected physiotherapy hospital.

Materials and Methods

Type of study: It was a descriptive type of cross sectional study

Study Population: All osteoarthritis patients attending for Physiotherapy treatment at DPRC Specialized Hospital & Research Center

Study Area: DPRC Specialized Hospital & Research Center

Study Period: The duration of the study was 12 months and conducted from December 2012 through November, 2013

Sampling Technique: Samples were selected purposively on the basis of the inclusion and exclusion criteria.

Selection Criteria:

Inclusion Criteria

- Those who gave consent and participate for interview
- All osteoarthritis patients

Exclusion Criteria

- Refusal to give informed consent

Data collection procedure: Face to face interview of mother using a semi-structured questionnaire regarding the objective of the study. After taking verbal consent, data were collected from respondents. Osteoarthritis was confirmed by previous medical record, physical examination, X-ray, MRI etc.

Data Management and Analysis: After collection of data, all responses checked for their completeness, correctness and internal consistency in order to exclude missing or inconsistent data. Corrected data was entered into the computer. The data

was analyzed by using the statistical software namely SPSS (Statistical Package for Social Science). Data analysis was done according to the objectives of the study.

Ethical Issues:

- Prior permission and inform written consents was taken from each respondent.
- Privacy and Confidentiality of each respondent was maintained.

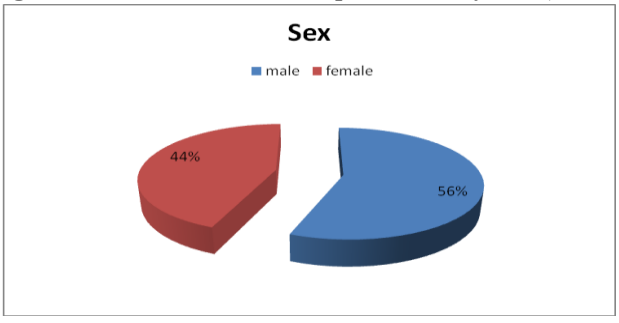
Results

Table 1: Distribution of patients by age (n=100)

Age group	Frequency	Percentage
20-29	4	4
30-39	9	9
40-49	17	17
50-59	40	40
60-69	22	22
>70	8	8
Total	**100**	**100**

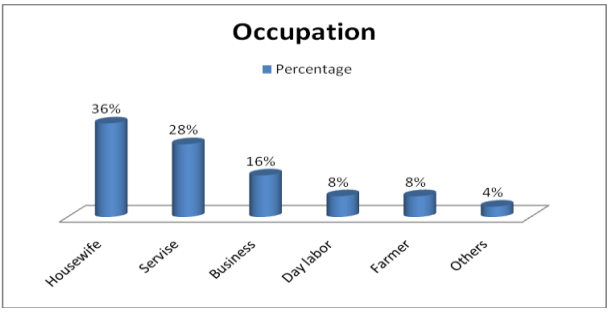
Table 1 show that most of the patients (40%) were suffering from osteoarthritis in 50-59 years age group. About 22% patients were from 60-69 years age group.

Figure 1: Distribution of respondents by sex (n=100)



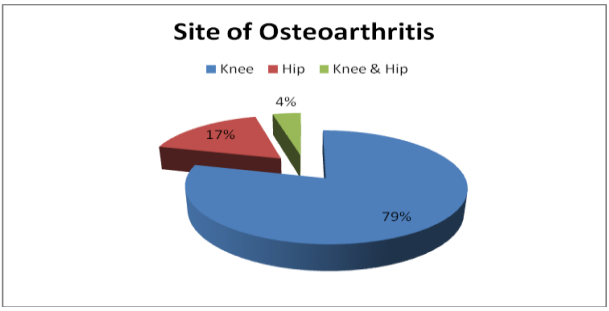
Male and female distribution was 56% and 44%.

Figure 2: Distribution of respondents by occupation (n=100)



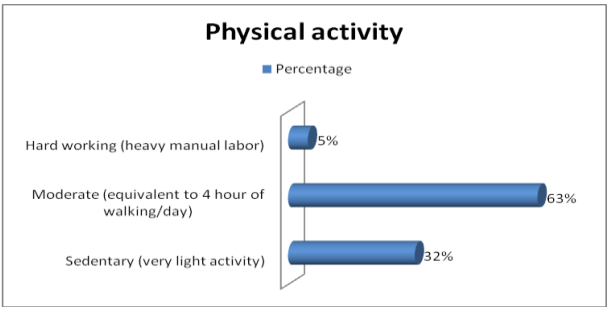
Housewife, service holder and businessman were 36%, 28% and 16% respectively.

Figure 3: Site of osteoarthritis (n=100)



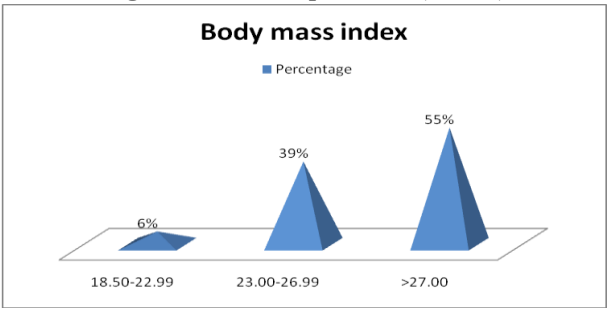
Knee was the most affected (79%) organ of osteoarthritis followed by hip (17%) and both knee & hip (4%).

Figure 3: Physical activity of patients (n=100)



Those who did moderate type of activity, 63% of them suffered from osteoarthritis followed by sedentary activity (32%) and hard worker (5%).

Figure 4: BMI of patients (n=100)



Obese and overweight patients were 55% and 39%.

Discussion

Osteoarthritis (OA), the most common form of arthritis, can affect many different joints in the body, and may be silent (found on x-rays only) or symptomatic (causing symptoms like pain, aching, or stiffness on most days). These investigators wondered if there might be a pattern (called phenotype) of which joints are affected. A study examined whether the patterns of symptomatic OA involving 4 joint sites (hands, knees, hips, and lumbosacral spine) might differ by race and sex. In a sample of 1,650 participants in the Johnston County Osteoarthritis Project (age 45 and older; 36% men; 32% African American) analysts found that overall 11% had symptomatic hip OA, 13% had symptomatic hand OA, 25% had symptomatic knee OA, and 28% had symptomatic lumbosacral spine OA. When they examined patterns of multiple joint symptomatic OA, they found that women more often had hand involvement, men more often had lumbosacral spine involvement, African Americans more often had knee involvement, and Caucasians

more often had hand involvement. These differences may need to be considered when researchers are defining multijoint, or generalized, OA.[8] The present study found that knee was the most affected (79%) organ of osteoarthritis followed by hip (17%) and both knee & hip (4%). Those who did moderate type of activity, 63% of them suffered from osteoarthritis followed by sedentary activity (32%) and hard worker (5%). Obese and overweight patients were 55% and 39%. Obesity and overweight have long been recognized as potent risk factors for OA, especially OA of the knee.[9-11]This was also reflected in the study[12] with the overall mean BMI being 29.5± 5.63, as well as the consistent increase in radiologic severity of KOA associated with increases in BMI. This association is also consistent with numerous previous studies which have shown a positive association between BMI and OA in weight-bearing joints, such as the hip, knee, and foot.[13-14] Increased mechanical loading on the joint is probably the main, but not only, mechanism by which obesity can lead to knee OA. Overloading of the knee can lead to synovial joint breakdown and failure of ligamentous and other structural support. Because the patients in the study were Arab Muslim who have their different religious and cultural and daily habits compared to western population in addition to the tendency of people to delay decisions regarding surgery, the combination of elevated BMI and mechanical loading could help to explain why 73 percent of our patients' radiographic scores were in the severe range, compared to other studies.[15] Most of the patients in the study[12] were in the age group of 40 to 59 years. There was a significant positive association between age, radiographic severity, and pain severity. This finding supports the fact that OA is a common health problem in middle and old age and this is consistent with previous studies.[16-17] Age is considered as a strong risk factor for KOA, but the underlying mechanism remains obscure.[18-19] Whereas tensile stiffness of knee articular cartilage

and proteoglycan content decrease with age[19] advanced glycation end products and cartilage turnover markers increase with age.[20] These biomechanical and biochemical changes in articular cartilage may have a role in age related OA, but age related morphological alterations in articular cartilage and subchondral bone are potential further explanations for OA. But present study found that most of the patients (40%) were suffering from osteoarthritis in 50-59 years age group. About 22% patients were from 60-69 years age group.

Conclusion

Study found that age, obesity, sedentary lifestyle contributes to develop osteoarthritis as well as knee was the main target organ of osteoarthritis. It is very difficult to generalize this study result due to small sample size. Further large scale study may be conducted to get real and precise result.

Disclosure

All the authors declared no competing interest.

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