

KNOWLEDGE ABOUT OSTEOPOROSIS IN WOMEN OF CHILD BEARING AGE (15-49 YEARS) ATTENDING FAUJI FOUNDATION HOSPITAL RAWALPINDI

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ABSTRACT

Objective: The objective of this study was to assess the knowledge on symptoms, risk factors, preventive measures and treatment options for regarding osteoporosis in healthy women of child bearing age (15-49 years) accompanying patients, in Fauji Foundation Hospital (FFH) Rawalpindi.

Study Design: Cross sectional survey.

Place and Duration of Study: The study was conducted in FFH Rawalpindi from February 2015 to October 2015.

Material and Methods: A cross sectional survey was conducted using a validated questionnaire i.e. OKAT (Osteoporosis Knowledge Assessment Tool) from 385 women attending OPDs of Fauji Foundation Hospital Rawalpindi, for a period of Feb-August 2015. The data was analyzed using SPSS (version 21). Mean knowledge scores were calculated and compared with socio demographic variables.

Results: Total knowledge score mean was 8 (total max score achieved 14). Mean scores were found for knowledge regarding symptoms 0.85 (total score 2), and treatment options were 0.82 (total score 2) for the disease. Comparison of knowledge scores between respondents of different age, residential status ($p \leq 0.009$), and educational status ($p \leq 0.056$) was found statistically significant.

Conclusion: Women lacked knowledge regarding osteoporosis, especially older uneducated ones, belonging to lower socioeconomic class residing in villages. Community based educational interventional programs targeting this population can help reduce the knowledge gap and contribute towards disease prevention.

Keywords: Osteoporosis, OKAT, Osteoporosis knowledge.

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INTRODUCTION

Osteoporosis is a systemic skeletal disorder, characterized by a reduction of bone mass, deterioration of bone structure, an increase in bone fragility, and an increase in fracture risk¹. Osteoporosis is an important public health problem in older adults, especially women. Not only does it give rise to morbidity, but also markedly diminishes the quality of life of women after menopause. It is characterized by poor bone strength and is associated with an increased risk of fractures from even a slight traumatic event². These fractures can be life threatening as

the most common site of osteoporotic fractures is at the hip joint which can lead to severe blood loss leading to the patient going into cardiovascular shock. Osteoporosis leads to around 8.9 million fractures annually or in other words an osteoporotic fracture after every 3 seconds³. In Pakistan approximately 9.9 million people suffer from osteoporosis of which 7.2 million are women. This prevalence is expected to rise to 11.3 million by 2020 and 12.9 million by 2050⁴. On the other hand the estimated lifetime risk of osteoporotic fracture is as high as 50 percent, especially in white and Asian women. At present in India osteoporotic fractures usually occur 10 to 20 years earlier in men and women compared to Caucasians. There are a number of risk factors associated with osteoporosis the most common being inadequate calcium intake, vitamin D deficiency, female gender, genetic

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predisposition, smoking, alcohol consumption, low BMI and sedentary life style. According to one survey, 72% of people lead a sedentary lifestyle, and vitamin D deficiency among Pakistani women has been reported to be as high as 83%. Moreover, a typical Pakistani diet is found to be deficient in calcium. The prevalence of smoking has been reported to be 22%–40% in most recent population-based studies⁵ other risk factors include chronic diseases such as asthma, sickle cell anemia, diabetes mellitus, systemic lupus erythematosus and hyperthyroidism. These diseases themselves may pose no threat to the bone but the medications (e.g. glucocorticoids) used for controlling the symptoms leads to adverse changes in bones⁶. Thus, a healthy life style is important in preventing this disease that comprises a healthy diet containing adequate amounts of calcium and vitamin D, regular exercise, avoiding alcohol consumption and smoking, but this requires an attitude change on a larger scale which certainly requires that women should be well aware of the disease and its consequences. As it is not only an issue for the patients but it also puts significant strain on government resources as in the US in 2005 the predicted 2 million fractures that occurred cost up to \$17 billion thus highlighting the importance of preventing the disease rather than treating it⁷.

Keeping this high prevalence of disease in mind, this study was planned to assess the knowledge of healthy females on symptoms, risk factors, preventive measures and treatment options for regarding osteoporosis using a validated tool OKAT.

MATERIAL AND METHODS

This Cross sectional study was carried out in outpatients department of Fauji Foundation Hospital Rawalpindi namely general Outpatient department (OPD), medicine, surgery, eye, ENT, rheumatology OPDs. A total of 385 cases were selected after calculation by SPSS 19 the prevalence used as in the stated reference was 53%⁸, confidence level was 95% and bound on

error was 5%, with an expected response rate of 85%. A non-probability convenience sampling was used. The women of child bearing age visiting the OPDs of the hospital, who had heard of the disease were included and those already having osteoporosis, or on treatment of any bone disease and having any visible bony deformity were excluded.

The validated questionnaire “Osteoporosis knowledge assessment tool (OKAT)” was used to assess the knowledge regarding osteoporosis with the permission from the author of the tool⁹. Few questions were modified as directed by the author. The questionnaire was initially translated in Urdu with the help of a college professor of Urdu, and later was translated back in English to check and maintain the validity of the questions. Knowledge on four key areas of the disease i.e. symptoms of osteoporosis, its risk factors, preventive measures & treatment options was assessed with OKAT.

The data collection was started after getting ethical approval of Foundation University. Each prospective individual interviewed filled out an informed consent form prior to the interview so that once a participant was approached, she becomes aware of the rationale, objectives and methods of the study. Face to face interviews were then conducted from the respondents based on OKAT questions. Mean and standard deviation were calculated for quantitative variables. Categorical variables were presented by frequency and percentage. Chi square test was applied for the comparison of variables.

Data was entered into SPSS V.20.0. A *p*-value of < 0.05 was taken to be significant in Chi square tests.

RESULTS

A total of 385 women were interviewed in the study. The demographic profile of the respondents is given in table-1.

Majority of the individuals were below the age of 35 (70.9%). Most of the women were

educated with the division between educated and uneducated being most prominent in the under 35 age group. Household income of 37% was below Rs 30,000 per month. Only 4.7% were smokers and 20% of respondents had a family history of osteoporosis, while 21.3% of the respondents claimed to have had suffered a bone fracture in their life. Menopause before age 45 was found in 6%.

under 2 groups, one being those who scored ≤ 8 or lower and those who scored ≥ 8 .

From OKAT questionnaire the findings indicate that 58% of the respondents scored less than the mean score 8 or lower regarding knowledge pertaining to the disease.

The comparison of different parameters like rural urban, educational status, income and marital status was done. The statistically

Table-1: Demographic data of women of child bearing age (15-49) attending FFH Rawalpindi, (n=385).

Characteristics	Categories	n (% age)
Age (Mean \pm SD)		29.1 \pm .47
Education level	Uneducated Educated	59 (15.3 %) 326 (84.7 %)
Residential status	Rural Urban	139 (36 %) 246 (64%)
Household income	Under 30,000Rs Over 30,000Rs	143 (37.1%) 242 (62.9 %)
Menopause	Yes No	32 (8%) 353 (92%)
Menopause before age 45	No Yes	362 (94%) 23 (6%)
Smoking history	ever smoked Never smoked	18 (4.7%) 367 (95.3%)
Family history of osteoporosis	No Yes	79 (20.5%) 306 (79.5%)
History of bone fracture	No Yes	303(78.7%) 82 (21.3%)

Table-2: Comparison of demographic characteristics with total knowledge scores for women of child bearing age (15-49) attending FFH, Rawalpindi (n=385).

Characteristics	Total Knowledge Scores		p-value
	≤ 8 n =(224)	≥ 8 n =(161)	
Rural	93 (41.5%)	46 (28.5%)	0.009*
Urban	131 (58.5%)	115 (71.5%)	
Educated	41(18.3%)	18 (11.1%)	0.05*
Uneducated	183 (81.7%)	143 (88.9%)	
Income			0.952
\leq Rs 30,000	151(67.4%)	109 (67.6%)	
\geq Rs 30,000	73 (32.6%)	52 (32.4%)	
Unmarried	105 (46.8%)	85 (52.7%)	0.252
Ever married	119 (53.2%)	76 (47.3%)	

In the OKAT questionnaire the respondents scored from 0 to 14, with the prior being the lowest score and the latter being the highest achieved score. Median score value as calculated via SPSS version 21 and was found to be 8. The scores achieved by respondents were grouped

significant difference was found ($p=0.009$) in the rural and urban dwellers and educated and uneducated respondents ($p=0.05$) (table-2).

Figure-1 shows a large percentage of the respondents had some knowledge regarding the

risk factors of osteoporosis with 22.3% scoring 6 correct answers out of the total 8 whereas 2.3% answered all questions correctly. In the four categories our mean scores were as follows: knowledge regarding symptoms was 0.85 (total max score 2), risk factors were 4.40 (total max score 9), preventive aspects were 1.08 (total max score 2) and treatment options were 0.82 (total max score 2). Regarding preventive measures of the disease, treatment options and symptoms of

Knowledge was particularly poor in women aged 45 and above. Similarly, it was noted that uneducated women belonging to lower socioeconomic class scored lower as compared to educated women. Women residing in cities on average scored better than those living in villages. A study conducted in a tertiary care hospital in Karachi⁸ also highlighted this knowledge gap.

Regarding the symptoms of the disease, the

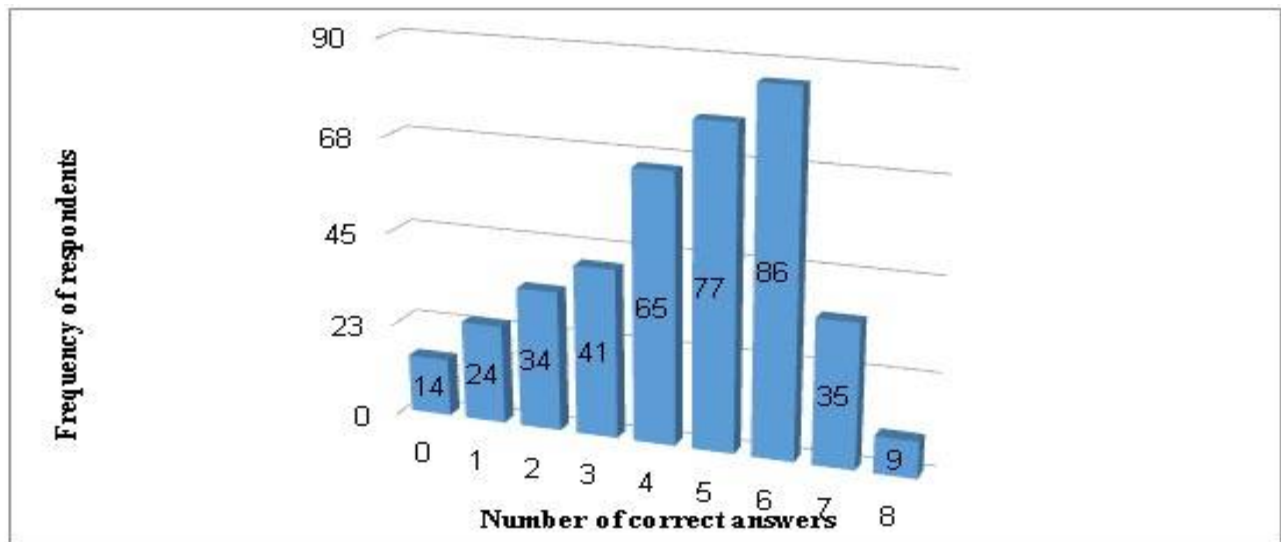


Figure-1: Knowledge of women of child bearing age (15-49) attending FFH, Rawalpindi regarding risk factors of osteoporosis. (Total max score: 8).

osteoporosis the maximum score obtainable was 3, 2 and 2 respectively, where 61.8%, 51.4% and 68.8% answered one question correctly respectively.

DISCUSSION

Knowledge on four key areas of the disease i.e. symptoms of osteoporosis, its risk factors, preventive measures & treatment options was assessed with OKAT.

Overall, this study showed that women possessed limited knowledge of osteoporosis in all four key areas. The mean total knowledge score was 8. The findings are consistent with a similar study conducted among young female nursing students in Damascus¹⁰. However in the present study, younger women (age less than 35) scored better as compared to older women.

knowledge deficit was once again apparent, indicating that either they were unaware or were unable to appreciate the clinical features of the disease such as sudden painless bone fractures. This highlights the fact that owing to limited signs of the disease may go unnoticed by the majority of women, thus increasing the number of undiagnosed cases in the population. Such cases prove to be a hurdle in decreasing the prevalence of the disease.

More than half of responders were able to appreciate smoking, low bone strength, advancing age, fall as possible risk factors. Majority of the women agreed that having positive family history predisposes a person to osteoporosis, but interestingly, when asked, most of them were unaware whether the disease ran in

their own families or not (79%). Considering other risks factors e.g. high intake of salt, the majority of respondents were unaware of its significance as a contributor to osteoporosis. Most of the respondents could not appreciate the fact that the disease is more prevalent in women as compared to men. Although they identified advancing age as a potential risk factor for osteoporosis, the majority of respondents were unaware of its association with menopause. Thus they were unable to identify that even apparently healthy women were naturally more susceptible to develop the disease due to bone loss following menopause. The findings of the present study are consistent with similar studies conducted among Sri Lankan medical students¹¹ and among adolescent females in Canada¹² which also concluded that knowledge is inadequate. The knowledge gap was also consistent concerning the preventive aspects and treatment options of the disease. Similar scores were obtained in another study conducted in Saudi Arabia which also showed that women possess poor knowledge regarding osteoporosis¹³. Intake of Calcium has been identified as the key to prevention of osteoporosis¹⁴⁻¹⁵. In the present study the majority of women could identify fruits and vegetables as an alternate source to calcium but they scored poorly when it came to identifying milk as a potential source. Thus the majority of women were unaware of the adequate amount of calcium needed to maintain bones and the sources to obtain it from and consequently did not acquire it. In another study conducted among college students in USA, respondents were unable to identify the correct recommended allowance of calcium for adults and its alternative sources other than dairy products^{16,17}. In the present study majority of women were unaware of the beneficial effect of additional calcium supplements in preventing osteoporosis. The knowledge gap in this category was apparent in both educated and uneducated women. This highlights the need to educate women from all walks of life regarding the recommended daily allowance of Calcium for adults.

A similar trend of limited knowledge was observed in treatment options for osteoporosis. This brings to light the plight of the patients suffering from the disease in Pakistan, as they are unaware of the various treatment options of the disease.

This study has helped identify the target population for interventional programs i.e. women. Older uneducated women, belonging to the lower socio economic class residing in villages, and the areas for intervention. These women have limited interaction and exposure to quality health care facilities, which attributes to their lack of knowledge. However, people from all strata of society need to be educated, special attention are needed to be focused on women from lower socioeconomic groups. Proper intervention regarding the four aspects of osteoporosis as discussed above & health education will help identify those at risk and help prevent the disease before it occurs. Interventions such as an increased calcium intake in the years before menopause and regular weight bearing exercises have been proved to prevent osteoporosis.

CONCLUSION

Overall Knowledge regarding Osteoporosis symptoms, risk factors, preventive measures and treatment options is low. It is imperative that awareness campaigns be conducted via various forms of media and the rough community based health education to create awareness about the disease which would help lower the burden of disease in society.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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