



A STUDY OF OSTEOPOROSIS THROUGH RADIOLOGICAL METHODS AMONG MIDDLE AGED FEMALES ATTENDING A DIAGNOSTIC CENTRE IN RAIPUR

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ABSTRACT

Introduction: Osteoporosis is fast becoming a major public health problem in this part. The objective of this study was to determine the magnitude of Osteoporosis among Middle Aged Women and to associate this with Osteoporosis among Middle Aged Women with their demographic and Clinical variables.

Methods: Descriptive research design was used. The data collection included into parts. Demographic variables, Clinical Variables & Standardized rating scale to assess bone mineral density. Sample size comes out A total of 131 middle aged women who fulfilled the inclusion criteria were chosen as samples by using non-probability purposive sampling technique. The study was conducted at Diagnostic centre of Raipur

Results: The data were analyzed and interpreted based on the objectives using descriptive and inferential statistics. Among 131 clients, 22% have normal T-score (< -1.0); 51% have osteopenia (-1.0 to -2.5); 36.28% have osteoporosis (-2.6 to -4.0) and there is a statistical significant association on prevalence of osteoporosis among middle aged women with their demographic variables like age and type of family with T-score levels at 95% ($P < 0.05$).

Conclusion: Osteoporosis is an important public health problem leading to an increased risk of developing spontaneous and traumatic fractures. Because of the morbid consequences of osteoporosis, the prevention of this disease and its associated fractures is considered essential to the maintenance of health, quality of life, and independence in the elderly population. Hence this study

KEYWORDS : Osteoporosis, BMD, Middle aged females

INTRODUCTION

Osteoporosis is a major cause of disability in the community and imposes significant economic costs upon society. Before a woman reaches 30 years of age her body gains more bone than it loses. Around age 30, this process balances out. However, the onset of menopause around 50 years of age may speed up the rate of bone loss. If bone loss becomes severe, a woman may develop osteoporosis. The condition can be prevented by exercising regularly and making some other lifestyle changes¹. Osteoporosis has been operationally defined on the basis of bone mineral density (BMD) assessment. According to the WHO criteria, osteoporosis is defined as a BMD that lies 2.5 standard deviations or more below the average value for young healthy women (a T-score of < -2.5 SD)². In India osteoporotic fractures occur more commonly in both sexes, and may occur at a younger age than in the western countries. Although exact numbers are not available, based on available data and clinical experience, 36 million Indians may be affected by osteoporosis by 2013². According to estimates, there are about 300 million people with osteoporosis in India and suspect it may be more over double the population of Australia. The evidence based on ageing population indicates that there may be a 50 per cent increase in the number of people with osteoporosis in India in the next 10 years. So, this is a huge problem in India³. The World Health organization reveals that one out of three adult females in India suffers from osteoporosis, making India one of the worst affected countries in the world. The Arthritis Foundation of India says there has been an estimated 200 per thousand cases across Asia in 10 years. In India at the end of 2000, there were an estimated 9 million new osteoporotic fractures, of which 1.6 million were at the hip, 1.7 million were at the forearm and 1.4 million were clinical vertebral fractures. By 2050, the worldwide incidence of hip fracture in men is projected to increase. The combined lifetime risk for hip, forearm and vertebral fractures coming to clinical attention is around 40%, equivalent to the risk for cardiovascular disease⁴. Osteoporosis is not usually diagnosed because it remains asymptomatic until fracture occurs with advancing age, giving rise to significant morbidity and some mortality. Once a

fracture occurs due to osteoporosis, 20% of the patients meet with death and 50% of them do not regain their normal movement again. The current WHO estimates that over 270 million people are likely to suffer osteoporosis by the year 2020 AD in India

METHODOLOGY

After local ethical committee approval. Patients coming to outpatient department or admitted in the hospital satisfying the criteria were included in the study. A total of 131 middle aged women who fulfilled the inclusion criteria were chosen as samples by using non-probability purposive sampling technique. The data was collected into parts. Demographic variables, Clinical Variables, Standardized rating scale to assess the bone mineral density. The Study variable was Prevalence Of Osteoporosis among Middle aged Women and the Demographic variables were Age, gender, religion, education, occupation, family monthly income, socio economic status, type of family, type of diet, Clinical variables were Height, Weight, BMI. Statistical analysis was conducted using Statistical Package for Social Sciences-20. Mean, percentage, and standard deviation were used to explain the demographic variables, Clinical variables and Chi-square test was used to associate the demographic and Clinical variables with prevalence of Osteoporosis. The samples was chosen through non probability purposive sampling technique. A total number of 131 clients who met the inclusion criteria were selected. The investigator explained the purpose of conducting the study and reassured the client that the collection will be kept confidential.

RESULTS

131 samples were assessed for the demographic, Clinical variables and it reveals that among 131 clients 59% are in between 35 – 40 years of age; 41% are in between 41 – 45 years of age. Considering the religion of the clients 87% are Hindu religion; 13% were Christians. Considering the educational status of the client 2% are under graduate or post graduate; 18% are under high school certificate; 22% are under middle school certificate; 29% are under primary

school certificate ;29% are under illiterate .Regarding occupation of the clients 81 % are under unskilled worker ; 20 % are unemployed. Regarding type of family of clients 69.2% are under nuclear family ;31% are under joint family Among 131 samples ,6 % were vegetarian ; 94 % were non-vegetarian Regarding the Clinical Variables, 53% were between (140 – 150)cm ; 36% were between (151 – 160)cm ; 11% were between (161-170)cm .Considering the weight of the client 25% were below 45 kg ; 37% were (46 – 55) kg ; 22% were (56– 65) kg ; 17% were above 65kg .Regarding BMI of the client 14% were < 18.50 (underweight); 43% were 18.50 -24.99 (normal); 1% were 25.00 (overweight) ; 28% were 25.00- 29.99 (pre-obese) ; 12% were 30.00- 34.99 (obese classification - I) ; 2% were 35.00-39.99 (obese classification - II) Table 3 reveals that there is a significant association between age and type of family with T – score levels at 95% % (P < 0.05). There is no association with respect to other variables .

DISCUSSION

Osteoporosis is an age related disease of bone that leads to an increased risk of fracture. In osteoporosis, the bone mineral density (BMD) is reduced, bone micro architecture is disrupted and the amount and variety of protein in bone is altered⁵. Osteoporosis is one of the major disorders of our time and is increasing at an alarming rate. It affects over 10 million women in the United States and is expected to affect 14 million by the year 2020⁶ . The number of osteoporosis patients reported in India is approximately 26 million; the numbers increased to 36 million by 2013. It is revealed that 4,895 patients in various cities of India, 80% of women and 50% of men of them, suffer from low bone mass, 73.9% of women and 26.2% of men of above 60 years of age among them have been suffering from osteoporosis. Almost all osteoporosis fractures the person's risk of death doubles compared to that of a non-osteoporosis person of the same age and similar circumstances. So the current situation is alarming⁷

Osteoporosis is a disease that threatens the people slowly and insidiously over many years. Bones can eventually become so fragile that they cannot with stand normal mechanical stress. Osteoporosis is 8 times more common in women than in men for several reasons such as lower calcium intake, early bone resorption, pregnancy and breast feeding also increases the likelihood of osteoporosis⁸ . Another research which was carried out by Ethel S.Siris, et al (2002) to describe the occurrence of low bone mineral density (BMD) in postmenopausal women, its risk factors, and fracture incidence. A total of 200160 ambulatory postmenopausal women aged 50 years or older with no previous osteoporosis diagnosis derived from 4236 primary care practices in 34 states. Baseline BMD T scores, obtained from peripheral bone densitometry performed at the heel, finger, or forearm ; risk factors for low BMD, derived from questionnaire responses; and clinical fracture rates at 12-month follow-up. The findings shows that almost half of this population had previously undetected low BMD, including 7% with osteoporosis. Peripheral BMD results were highly predictive of fracture risk⁹

CONCLUSION

Over 300 million people suffer from osteoporosis in India. More women die of osteoporosis fractures than of breast and ovarian cancers. Osteoporosis fractures occur 10-20 years earlier in Indians compared to people in Western countries. India shows the highest prevalence of osteoporosis. One in two Indian women above the age of 35- 45 suffers from osteoporosis. In India, six out of 10 fractures and bone injuries are caused by osteoporosis. Unfortunately, osteoporosis shows no symptom and is often diagnosed only after a fracture, by which time the patient may have suffered considerable bone loss. Assessing the prevalence of osteoporosis among middle aged will be helpful to health professionals to carry out health awareness campaigns to

enhance the health related knowledge to the public in general and specifically to the women.

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