A study of knowledge on osteoporosis among peri – menopausal women in an urban slum area of Berhampur

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Abstract

Background: Osteoporosis, a condition characterized by decreased bone strength, is prevalent among perimenopausal women as a major risk factors. world wide it causes more than 8.9 million fractures annually. **Aims and Objectives:** aimed to assess the knowledge on osteoporosis among peri menopausal women in urban slum area of southern Odisha **Material and Methods:** It was a cross-sectional study carried out in slum area of Berhampur, Odisha between September 2013 to February 2014. The study population include all the peri-menopausal women in the slum area. Sample size taken as 369. data was collected from a structured pre tested and pre designed questionnaire. The data was analysed SPSS version 16.0. p value less than 0.05 was taken to be statistically significant. **Results and Conclusion:** majority of the women (75%) were in the age group 51-60yr and (42%) of women had no formal education. By occupation 32% were daily labourer. As per average family income, 24% belonged to the income group of more than Rs.5000/- per month. regarding source 36% had known about osteoporosis from health personnel. About 48% opined that osteoporosis is a disease of bone. 72% women agreed old age to be a risk factor for it. 44% knew that back pain as a major symptom of the disease. Only 28% knew that calcium rich foods can prevent osteoporosis. The study shows limited knowledge on understanding of osteoporosis and it's preventive measures suggested this as a evidence to be used for future correspondence. In the community : knowledge on osteoporosis among peri-menopausal women is very low and it is significantly associated with factors like age, occupation. The symptoms of osteoporosis submerged in the population like a tip of ice berg which is expressed only in the form of fracture or serious complications. Also the literacy does not make any difference as per our observation

Keywords: Osteoporosis, peri- menopausal women, knowledge.

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Access this article online	
Quick Response Code:	
	Website: www.statperson.com
	DOI: 01 August 2015

INTRODUCTION

Osteoporosis, a condition characterized by decreased bone strength, is prevalent among postmenopausal women and major risk factors associated with bone demineralization. Osteoporosis is defined as a reduction in the strength of bone that leads to an increased risk of fractures. Loss of bone tissue is associated with deterioration in skeletal micro architecture. More than 50% of fractures among postmenopausal women, including hip fractures, occur in this group with low bone density.[1] Worldwide, osteoporosis causes more than 8.9 million fractures annually, resulting in a fracture every 3 second.[2] About half of all women above the age fifty develop fracture of hip, wrist or vertebra during their life time. It affects 200 million women worldwide - approximately one-tenth of women aged 60, one-fifth of women aged 70, two-fifths of women aged 80 and two-thirds of women aged 90.[3] After menopause, 54% of females are considered to have osteopenia, and 30% of them could develop osteoporosis in the future. Prevalence

of osteoporosis increases with age; it can range from some 5% in women of 50 years old to about 50% in women over 85 years.[4] In India the number of osteoporosis patients is approximately 28 million in 2011 among which 80% are women and is expected to increase another 5million in just 12-14 month.[5] In a study among Indian women aged 30-60 years from low income groups, bone mineral density at all the skeletal sites were much lower than values reported from developed countries, with a high prevalence of osteopenia (52%) and osteoporosis (29%) thought to be due to inadequate nutrition.[6] According 2011 census in India the total slum population is 65.5 million out of which 31.5 million are female.[7] Despite the tremendous need, healthcare services are generally difficult to access in these areas.[8] With this background, this study was aimed to assess the knowledge on osteoporosis among peri- menopausal women in urban slum area of southern Odisha.

MATERIALS AND METHODS
Study design and study setting
It was a cross-sectional study carried out in slum area of Ankuli village which is the field practice area of Department of Community Medicine, M.K.C.G. Medical College, Berhampur, Odisha between September 2013 to February 2014. The study population include all the peri-menopausal women in the said slum area.

Sample size and sampling technique
Ankuli village has 5 wards (No.35-39 of Berhampur Town) out of which 2 wards (No.35,36) selected randomly and the entire sample drawn from the selected wards. Assuming a knowledge proportion of female population 40% with precision 5 at 95% CI sample size calculated as 369.[9] The two wards had about 2838 households.[10] From the result of our own pilot survey we found one peri-menopausal women per household. The sampling interval calculated to be 8. So every 8th household was selected for inclusion in study by applying systematic random sampling. The first house to be included in the survey was selected by simple random sampling. Inclusion criteria consist of peri-menopausal women who were present during the data collection and were willing to participate voluntarily. Sick, bedridden, woman unwilling to participate were excluded from the study. All the communications was in local language Odia.

Study instrument
A structured pre tested and pre designed questionnaire consisting of two parts A and B was used as the study tool. Part A included information on socio-demographic characteristics and Part B had 32 items pertaining to knowledge on osteoporosis i.e. on concept or meaning of osteoporosis(7 questions), on its risk factor(7 questions), knowledge on sign, symptoms and complications of osteoporosis (7 questions), on its management and prevention(11 questions). For each correct response "one" and for a wrong response "zero" score was given. For each participant the score was calculated and the level of knowledge was categorized as poor, average or good. The score 0-10, 11-20 and 21-32 were taken as poor, average and good respectively. Data was collected with the assistance of female paramedical staff of the Urban Health Centre attached to the Department of Community Medicine, M.K.C.G Medical College, Berhampur on informed consent. The data was analysed by descriptive statistics. The degree of association of the various parameters like age, education level, occupation, income level and the level of knowledge on osteoporosis was found out by chi-square test using SPSS version 16.0. p value less than 0.05 was taken to be statistically significant.

Ethical consideration
The study was approved by Institutional Ethics Committee of the M.K.C.G Medical College ensuring not to harm physically, psychologically, emotionally, maintaining privacy, self respect and confidentiality.

OBSERVATIONS AND RESULTS
In the study among the 369 participants 75% were in the age group 51-60 years and 42% had no formal education. By occupation 32% were daily labourer. As per average family income, 24% belonged to the income group of more than Rs.5000/- per month. (Table-1) 36% had known about osteoporosis from health personnel, an equal number from friends and relatives.(Figure-1) 48% opined that osteoporosis is a disease of bone, 28% understood the meaning of osteoporosis. 72% women agreed that old age was a risk factor for osteoporosis. 28% knew that deformity or fracture occurs in osteoporosis and 44% knew that back pain as a major symptom of the disease. Only 28% knew that calcium rich foods can prevent osteoporosis. Nearly 40% subjects interviewed were aware about the source of calcium rich foods and vitamin D but none was aware that life style had a role in osteoporosis. (Table-2) The mean knowledge score among women in our study shows that highest mean score was in the area of preventive aspect of osteoporosis (2.21±1.42) followed by knowledge on signs and symptoms (1.43±1.05). (Table -3) Also considering score level of 0-10 as poor it was found that 74% women had poor knowledge and 7% had good knowledge (score 21-32) where as only 19% were found to have an average knowledge (score 11-20). Level of knowledge about osteoporosis had a significant association with age and occupation. (p <0.05)

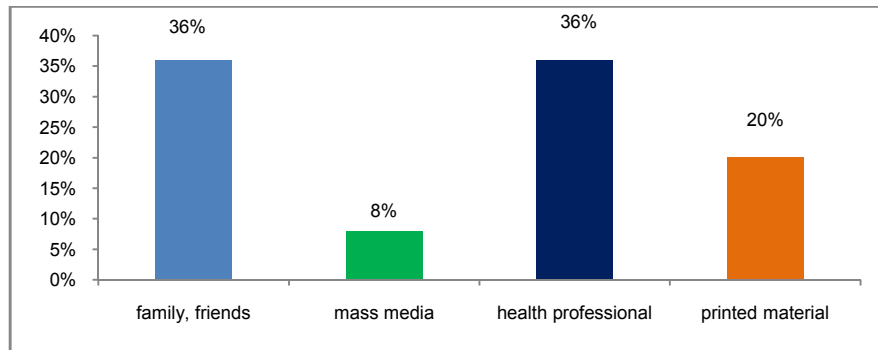**Table 1:** Socio demographic distribution and association with level of knowledge

Socio-demographic parameter	Respondents (%)	Level of knowledge			Chi-square, p-value
Age group		Poor	Average	Good	
41-50yr	101 (17)	72	17	12	
51-60yr	198(75)	159	28	11	11.7, 0.01
>60yr	70(8)	45	20	5	
Education					
No formal education	157(42)	124	25	8	
Primary education	98(27)	69	22	7	6.13, 0.18
High school and above	114(31)	75	30	9	
Occupation					
Daily labourer	119(32)	98	13	8	
Business/service	88(24)	70	11	7	12.94, 0.01
House wife	162(44)	110	42	10	
Income					
>5000	90(24)	64	17	9	
3000-5000	97(27)	72	20	5	2.24, 0.65
<3000	182(49)	139	32	11	

Table 2: Questionnaire to test the knowledge on osteoporosis and the response

Sl No.	Item: Concept/meaning of osteoporosis	Correct Response (%)	n
1	Is Osteoporosis is a disorder of bone ?	48	177
2	Do you know what means osteoporosis ?	28	103
3	Is Osteoporosis common in old age ?	28	103
4	Can you say what percentage post menopausal women suffer osteoporosis ?	0	0
5	Is Osteoporosis common in women than men ?	12	44
6	Do you know it is a silent risk factor for fracture ?	24	88
7	Do you know the total number of bone in human body ?	28	103
	Item: Risk factors/cause of osteoporosis		
1	Do you know peak bone growth occure in adolescence ?	35	129
2	Do you know the age of attending max. bone Strength ?	0	0
3	Is there any chance of osteoporosis in women with menopause ?	12	44
4	Is there any role of hormone in osteoporosis ?	8	29
5	Can you say there is a role of weight bearing exercises in osteoporosis ?	8	29
6	Do you know that regular exercise affect bone density ?	8	29
7	Is there any effect of drinks on osteoporosis ?	16	59
	Item: sign/symptoms of osteoporosis		
1	Is back pain a common symptom in osteoporosis ?	44	162
2	Is osteoporosis cause general weakness ?	36	133
3	Do you know there occure repeated falling in osteoporosis ?	4	15
4	Do you know any commonly affected bone ?	8	29
5	Is there any deformity / fracture occure?	28	103
6	Any common site of fracture have you known ?	8	29
7	Do you know any complication due to osteoporosis ?	16	59
	Item: preventive measures in osteoporosis		
1	Do you know any Ideal age for prevention of osteoporosis ?	16	59
2	Is there any mineral needed for bone growth ?	16	59
3	Do you know that calcium rich food can prevent osteoporosis ?	28	103
4	Do you know any dietary source of calcium ?	40	148
5	Do you know about any cheap source of calcium ?	36	133
6	Do you know anything known as source of vitamin D ?	24	88
7	Have you know about any vitamin rich foods ?	40	148
8	can exercise prevent osteoporosis ?	11	41
9	Is there any ideal exercise for bone strength ?	0	0
10	Can any medication can prevent osteoporosis ?	11	41
11	Is there any life style change for prevention of osteoporosis	0	0

Table 3: Item wise distribution of score with mean and SD

Sl. No.	Item	Maximum score	Mean	SD
1	Concept/meaning of osteoporosis	7	1.68	1.02
2	Risk factors and cause	7	0.864	0.67
3	Sign, symptoms and complications	7	1.43	1.05
4	Preventive aspects of osteoporosis	11	2.21	1.42

Figure 1: Source of knowledge on osteoporosis in urban slum women

DISCUSSION

There are few studies conducted in our country on this issue. In our study poor level of knowledge on osteoporosis was found in 80% of the participants which coincides with another study conducted by *Mohmed et al*[11] in Egypt where the nutritional knowledge among slum women was found to be very poor (53%). Another study conducted by *Ungan et al*[12] in 2001 in Turkey, 33% women had told that, osteoporosis was the direct cause of fracture which is similar to the findings of our study (24%). In our study, 12% agreed that menopausal women get osteoporosis, where as in a study done by *Ford et al* in USA on chinese students 21% had a similar opinion.[13] In a study by *Admonds et al* 23% agreed that calcium rich food can prevent osteoporosis,[14] but in our study also 28% agreed positively to the question. Another study conducted by *Abusikha et al* in 2009 [15] on female school students revealed that 90% aware that pain is the commonest symptoms of osteoporosis, which is only 44% in our study. The source of knowledge on osteoporosis was family and friends as opined by 36% participants, similar to the finding of another study done by *Puttapitakpomg et al* in Bangkok.[16]

CONCLUSION

Knowledge of osteoporosis and its prevention was limited among the peri-menopausal women living in urban slums and the level of the knowledge is significantly associated with factors like age and occupation. Though it is not a common cause of mortality but it contributes to high morbidity among this age group of women. The symptoms of osteoporosis submerged in the population like a tip of ice berg which is expressed only in the form of fracture or serious complications. Also the literacy does not make any difference as per our observation. Making the vulnerable aware of the disease will bring about a reduction in the risk factors of osteoporosis and there by enhance the quality of life of women in old age. Public seminars, leaflet distribution, television programme, so also a pro-active role by health policy planners, medical associations and other non-government organisations will be useful in this regard. Information on osteoporosis should be included in study curriculum so that at early stage people can be aware about this condition.

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Source of Support: None Declared
Conflict of Interest: None Declared