

A study of knowledge and awareness among postmenopausal women regarding osteoporosis.

Dr. Ankush Mohabey , Dr. Prajakta Warjekar, Dr. Suvarn Gupta,

1 Assistant Professor, Dept. of Orthopaedics, Datta Meghe Medical College, Nagpur.

2 Assistant Professor, Dept. of Biochemistry, Datta Meghe Medical College, Nagpur.

3 Assistant Professor, Dept. of Orthopaedics, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences Sawangi (Meghe), Wardha

Abstract:

There have been few studies conducted on the knowledge, attitude and practice among the osteoporotic patients in few Arab countries and abroad but very few studies have been conducted in India especially central India on the same topic hence with our research we aim to identify the knowledge gap among the post menopausal women in central India.

Materials and methods: This was a cross-

sectional observational study which was carried out on the postmenopausal women, 50 years or older between January 2020 and December 2020 in a tertiary hospital in Central India. A total of 792 women finally took part in the study out of the 1000 approached. These women came to OPD for various complaints and after taking their valid consent, the study was carried out by a pre formed questionnaire which tested the knowledge and awareness of the women about osteoporosis.

Results: Nearly 87% women were fearful of falling and having a fracture. 75% women said that osteoporosis was a disease while 44% agreed that it's a serious disease. 30% said that it could happen to women only. About 60% women agreed that most important time to build bone strength early on. Nearly 80% women said that if they have osteoporosis, they can have a fracture. 80% women said that diet rich in calcium protects from osteoporosis. 80% said that less vitamin D means more risk of osteoporosis and 85% patients had an idea that vitamin D can be obtained by exposure to sunlight.

Conclusion

The knowledge, perception and awareness is still lacking in the post menopausal women and health policies have to be implemented in this direction.

Keywords: Osteoporosis, knowledge, awareness.

Introduction:

Osteoporosis means porous bone. It implies that either the bone is not forming or is losing more. Inside a microscope it appears as a honeycomb structure. The bones in the body are in a continuous state of formation and destruction. When we are young the new bone formation is a faster process and as age advances it becomes slower and slower causing slower new bone formation and faster old bone destruction. There are various reasons for osteoporosis like female sex, age, Asian and white race among the non modifiable ones and among the modifiable

risk factors are sedentary life style, low calcium and vitamin d intake, alcohol, smoking, overweight etc. Over the years, due to the epidemiological transition, more and more ppl are getting osteoporosis than before which is indeed a great cause of concern. Women especially post menopausal women due to loss of estrogen are at a far greater risk of having fractures after trivial falls due to this osteoporosis and then begins this vicious cycle which impairs the quality of life. Despite it being so common, the awareness and knowledge about it is found to be too scarce among the general population. Most patients only realise the osteoporosis after sustaining a fracture themselves or their relatives. Due to increased use of steroid in Covid in recent times, we can be sure of getting far greater number of people presenting with fractures due to osteoporosis. The principle of health education needs to be applied in this disease as its indeed becoming a public health problem.

Osteoporosis as per World Health Organization is the tenth most common worldwide disease. [1]. In an economically weak country like India, disease such as osteoporosis can have deleterious effects on the economy and hence importance towards it by the public health department is the need of the hour. There needs to be proper legislations and policies so as to prevent the causes like alcohol, smoking, too much steroid use which will result in lowering the incidence of osteoporosis.

Despite the fractures being so common in older women, the proper awareness regarding it is lacking. Many people still don't know what is osteoporosis and how does it occur and how can we prevent it and hence the proportion of osteoporotic patients keeps on increasing day by day and we can't do anything about it.

There have been few studies conducted on the knowledge, attitude and practice among the osteoporotic patients in few Arab countries and abroad but very few studies have been conducted in India especially central India on the same topic hence with our research we aim to indentify the knowledge gap among the post menopausal women in central India which may help in formulating policies for better implementation of the health education programs for creating awareness against Osteoporosis and which will eventually help in reducing the burden of osteoporosis and will strengthen our women and hence our economy. This study though conducted in a tertiary hospital in central india, the findings will apply to majority of the population especially the vulnerable and the needy population.

Methodology

This was a cross-sectional observational study done on post-menopausal women aged more than 50 years from January 2020 to December 2020 in a tertiary hospital in Central India. A total of 792 women finally took part in the study out of the 1000 approached. These women came to OPD for various complaints and after taking their valid consent, the study was carried out by a pre formed questionnaire which tested the knowledge and awareness of the women about osteoporosis. The answers given by the women to on the osteoporosis risk factors, diagnosis and management were reclassified as "strongly agree", "agree", "neutral", "disagree", "strongly disagree".

Statistical analysis was done using SPSS 17 and Microsoft Excel. P value of <0.05 was considered as statistically significant. Appropriate tests like chi square tests were applied for qualitative variables and t test etc were applied for quantitative variables. Tables were made and inferences were written.

Results:

Out of a total of 1000 women approached in a year, a total of 792 women finally were selected for the study. The mean age of participants was found to be 58.5 ± 6.8 years. Most of the women were found to be unemployed and married. (Table 1 comes here)

When perception of women about osteoporosis definition was checked, it was found to be too low and only 46% could define it correctly (soft and brittle bones). The most common source of getting this health information about osteoporosis were medical staff and TV. 60% told that they were advised about it before.

(Table 2, Table 3, Table 4 comes here).

The most important component was the knowledge about osteoporosis. Nearly 87% women were fearful of falling and having a fracture. 75% women said that osteoporosis was a disease while 44% agreed that it's a serious disease. 30% said that it could happen to women only. About 60% women agreed that most important time to build bone strength is early on. Nearly 80% women said that if they have osteoporosis, they can have fractures. 80% women said that diet rich in calcium is good against osteoporosis. 80% said that less vitamin D increases the osteoporosis risk and that 85% knew that Vitamin D can be obtained naturally from sunlight exposure. 38% said that osteoporosis risk increases with lack of physical activity. 36% women said that women with less weight are at greater risk of having osteoporosis risk.

(table 5a and 5b comes here)

Discussion:

Osteoporosis incidence is increasing day by day and fractures caused by it such as hip fractures can increase both the morbidity and the mortality in general population [2]. And the frequent hospital visits, admissions and physiotherapy and medications further impair the quality of life of such patients. [3]. Our study aimed at assessing the knowledge gaps in the most susceptible women population so that appropriate policies can be formed based on the observations and could help prevent this almost incurable disease.

There are various reasons for osteoporosis like female sex, age, Asian and white race among the non-modifiable ones and among the modifiable risk factors are sedentary life style, low calcium and vitamin D intake, alcohol, smoking, overweight etc. Over the years, due to the epidemiological transition, more and more ppl are getting osteoporosis than before which is indeed a great cause of concern. Women especially post-menopausal women due to loss of estrogen are at a far greater risk of having fractures after trivial falls due to this osteoporosis and then begins this vicious cycle which impairs the quality of life. Despite it being so common, the awareness and knowledge about it is found to be too scarce among the general population.

Most patients only realise the osteoporosis after sustaining a fracture themselves or their relatives. Due to increased use of steroid in Covid in recent times, we can be sure of getting far greater number of people presenting with fractures due to osteoporosis.

Women above 50 years were chosen as majority women already achieve menopause by that age. And also because osteoporosis was found to be associated with menopausal women. Our study had 37% women in the age group of 50-55 years and 20% women above 65 years of age. Also majority of women i.e. 49% had a BMI between 26-30 while 12.2% had a BMI above 30. Increased weight and increased age are further associated with increased risk of fractures due to osteoporosis.

A majority of women i.e. 77% were married while 7% were single. Also, 3.7% were divorced and 12.3% were widowed. About 21.4% were illiterate, 25% were educated upto primary school, 26.5% upto upper primary school, 21.8% were graduates while 5% were post graduates.

46.2% women could give the correct answer about the definition of osteoporosis which was weak and brittle bones while 38.4% women labelled it as calcium deficiency and 14% as soft bones due to vitamin D deficiency. Its impressive that most women knew the right answer despite being not so highly educated. Also 62% told that they knew about it from their doctors. Among the sources, doctors invariably ranked highest followed by television.

As per our results, the medical staff were the main health education providers. A study done in Qatar however showed that the media devices such as television and radio were more common sources 40%. [4]. It could be that most women in our study don't indulge too much time watching television and reading magazines like those women.

Nearly 87% women were fearful of falling and having a fracture. 75% women said that osteoporosis was a disease while 44% agreed that it's a serious disease. 30% said that it could happen to women only. About 60% women agreed that most important time to build bone strength is early on. Nearly 80% women said that if they have osteoporosis, they can have fractures. 80% women said that diet rich in calcium is good against osteoporosis. 80% said that less vitamin D increases the osteoporosis risk and that 85% knew that Vitamin D can be obtained naturally from sunlight exposure. 38% said that osteoporosis risk increases with lack of physical activity. 36% women said that women with less weight are at greater risk of having osteoporosis risk. In a study done in Turkey and Qatar, the findings were similar to ours [5, 6].

The risk factors as agreed upon by the National osteoporosis foundation (2011) [7] were included in the study.

Majority of women did household work but some had no exercise in their daily routine. 38% said that lack of physical activity increases osteoporosis risk. A study in Saudi Arabia had similar findings [8].

A study in Taiwan and Egypt showed that about 86.6% named vitamin D insufficiency to be a risk factor for osteoporosis [9, 10] which was similar to our findings in the study

63% and 40% women said that high caffeine and smoking raises the risk of getting osteoporosis respectively.

This study was unique in various ways as there are hardly any studies to test the awareness, perception and knowledge among post menopausal women about osteoporosis which increases

the likelihood of getting fractures. Our study was an observational study so definitely it will have its limitations with respect to the extrapolation of the study findings to the general population is considered but still if same study was done over a large period of time with a much bigger sample size then surely we would have got a far convincing and policy changing results still hope that this study will continue to help other doctors to take care of their patients and strive hard for it and get the expected desired results for them as in their welfare and service alone, we have sacrificed our youth and life.

Conclusion

Women above the age of 50 years need to be given better health education regarding prevention of osteoporosis and the knowledge gap needs to be filled in by the concerned health authorities.

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Tables:

Table 1 General characteristics of the study participants.

Characteristics N (%)	Post-menopausal	Pre-menopausal	Total
Age in years:			
50-55	176	114	290 (37%)
56-60	190	2	192 (24%)
61-65	150	2	152 (19%)
>65	158	0	158 (20%)
Body mass index			
<18	8	2	10 (1.2%)
19-25	254	44	298 (37.6%)
26-30	330	58	388 (49%)
>30	82	14	96 (12.2%)
Marital status			
Single	46	10	56 (7%)
Married	514	104	618 (78%)
Divorced	84	6	90 (11%)
Widowed	30	8	38 (4%)
Educational level			
Primary school	142	16	158 (20%)
Upper primary	196	12	208 (27%)
Graduate	144	28	172 (21%)
Post graduate	120	62	182 (23%)

Table 2 showing the Knowledge by the correct Definition of Osteoporosis.

	Definition of Osteoporosis			
	Soft bones (due to vitamin D deficiency)	Calcium Deficiency	Weak and Brittle Bones	Calcium Deficiency and Weak and Brittle Bones
Total	112 (14.1%)	304 (38.4%)	366 (46.2%)	10 (1.3%)

Table 3

Source of information on Osteoporosis.

	Source of Information on osteoporosis						
	Television	Internet	Magazine	Doctors	Family	Friends	Others
Total	190 (24%)	40 (5.1%)	42 (5.3%)	238 (30.1%)	94 (11.9%)	46 (5.8%)	142 (17.9%)

Table 4

Education about Osteoporosis.

Ever received education from your physician about osteoporosis	
Yes	No
496 (62%)	296 (38%)

Table 5a

Knowledge about Osteoporosis disease.

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Do you have any fears related to falling and having a fracture?	366 (46.3%)	326 (41.1%)	42 (5.2%)	48 (6.2%)	10 (1.2)
Do you think osteoporosis is a disease?	226 (28.4%)	372 (47%)	82 (10.5%)	102 (12.8%)	10 (1.3%)
Osteoporosis is a serious disease	112 (14.1%)	238 (30.1%)	300 (37.9%)	134 (16.9%)	8 (1%)
Osteoporosis affects women only.	66 (8.2%)	178 (22.5%)	182 (23%)	278 (35.2%)	88 (11.1%)
Most important time to build bone strength is between the age of 9 & 30.	144 (18.1%)	332 (41.8%)	224 (28.4%)	86 (10.8%)	6 (0.9%)
If you suffer from osteoporosis, you are more like to have a spine hip fracture or other fragility fracture.	190 (24%)	434 (54.7%)	128 (16.3%)	40 (5%)	0 (0%)
Having a fragility fracture would increase your risk of having another one.	204 (25.7%)	368 (46.6%)	164 (20.6%)	52 (6.7%)	4 (0.4%)
The ideal time to make bones strong and increase bone mass is before the age of 25 years.	128 (16.1%)	336 (42.6%)	230 (29.1%)	92 (11.8%)	4 (0.4%)

Table 5b Knowledge about risk factors of Osteoporosis.

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
A calcium-rich diet has a protective effect on osteoporosis	410 (26.4%)	438 (55.4%)	112 (14.1%)	28 (3.5%)	4 (0.6%)
Children 9–17 years of age get enough calcium from one glass of milk each day to prevent osteoporosis.	168 (21.3%)	380 (48%)	118 (14.8%)	100 (12.7%)	26 (3.2%)
Physical activity increases osteoporosis risk.	88 (11.2%)	212 (26.7%)	136 (17.3%)	274 (34.5%)	82 (10.3%)
Lean women have higher osteoporosis risk compared to overweight or obese.	58 (7.4%)	228 (28.7%)	236 (29.9%)	218 (27.4%)	52 (6.6%)
High caffeine intake increases the risk of osteoporosis.	172 (21.6%)	334 (42.3%)	170 (21.6%)	104 (13.1%)	12 (1.4%)
Low vitamin D level results from decreased sun exposure time.	270 (34.1%)	400 (50.5%)	88 (11.2%)	32 (4.2%)	0 (0%)
Low vitamin D level increases the risk of osteoporosis.	180 (22.7%)	446 (56.6%)	124 (15.8%)	38 (4.7%)	2 (0.2%)
Smoking increases the risk of osteoporosis.	46 (5.9%)	268 (33.7%)	202 (25.5%)	198 (25%)	78 (9.9%)
Aging is a risk factor for osteoporosis	212 (26.7%)	430 (54.4%)	116 (14.7%)	30 (3.7%)	4 (0.5%)
Heredity is a risk factor for osteoporosis.	136 (17.1%)	312 (39.5%)	174 (22%)	148 (18.6%)	22 (2.9%)