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Research Article

Female students' awareness of osteoporosis in Ardabil city

Fariba Kahnamouei-aghdam[1], Firouz Amani[2], Esmaeil Farzaneh[3]*, Marjan Vejdani[4]

[1]Department of Obstetrics and Gynecology, Ardabil University of Medical Sciences, Ardabil, Iran
[2]Department of Biostatistics, Ardabil University of medical sciences, Ardabil, Iran
[3]Department of Drug Poisoning, Ardabil University of Medical Science, Ardabil, Iran
[4]Department of medical and health services management, Iranian Research Center on Healthy Aging, Sabzevar University of Medical Sciences, Sabzevar, Iran

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***Correspondence:**
Dr. Esmaeil Farzaneh,
E-mail: e.farzaneh@arums.ac.ir

ABSTRACT

Background: Osteoporosis is the most prevalent bone metabolic disease and a common disease in the population. Considering the high prevalence of osteoporosis in women, this study is conducted to assess female students' awareness of osteoporosis in Ardabil.
Methods: This study was a descriptive-analytical study which was conducted by a questionnaire with 27 questions. By simple random sampling, 150 female students (including medical and non-medical students) were selected from Ardabil universities and then collected data were analyzed by statistical methods in SPSS.16.
Results: Overall 10.7% of students (16 people) had a good, 60.7% (91 people) had moderate and 28.7% (43 people) a poor awareness of osteoporosis.
Conclusions: Results showed that students do not have a proper awareness about osteoporosis. Therefore it seems necessary to provide some educational interventions to promote community awareness for osteoporosis prevention, especially in young girls.

Keywords: Osteoporosis, Awareness, Educational interventions, Student, Bone metabolic disease

INTRODUCTION

Osteoporosis is a serious health problem in both developed and developing countries.[1] This is one of the most prevalent musculoskeletal system problems which usually doesn't have any symptom but suddenly shows itself with some complications like unexplained bone fractures.[2] Osteoporosis is reported in women more than men which may be related to hormonal changes in women after menopause.[3] In people over 50 years old, one in three women and one in 12 men have osteoporosis.[1] About 10% of men and women in America have osteoporosis.[4] Also, in Iran this disease is prevalent and according to a study in Tehran, about 9.4% of men and 32.4% of women aged 20 to 69 years had spinal osteoporosis.[5]

In terms of general and clinical health of the society, the importance of osteoporosis lies in the rate of related fractures.[6] According to the studies, 10% increase in the bone mass would reduce the risk of osteoporotic fractures up to 50% in older ages. Therefore one of the effective methods of osteoporosis prevention is strengthening body bones during adolescence.[1] In European societies, every 30 minutes one person gets bone fracture due to osteoporosis. In many parts of the world, osteoporotic fractures are one of the most common causes of disability and the main reasons of hospitalization costs.[1,7,8]

In England, osteoporosis-related fractures cost was more than 1.7 billion pounds and in America it was more than 14 million dollars.[9]

Risk factors for osteoporosis include age, gender (female), low weight, genetic, inadequate physical activity, smoking and alcohol consumption, poor diet (low vitamin D and calcium intake), high or low protein intake and high absorption of sodium and phosphorus.[1,10]

From childhood to the age of 20 years, ossification is more than bone loss, after age of 30 years, due to some unknown reasons, bone loss is faster than ossification.[1,11] Other studies have shown that bone mass density and amount of it is the most important factor in the development or prevention of osteoporosis. Because peak bone mass is formed in early years up to late adolescence and early third decade of the life, the best time for osteoporosis prevention is before age of 30 years. Education is the foundation of primary prevention and awareness is the base of action.[1] Due to the importance and high prevalence of osteoporosis in women and regarding osteoporosis is a preventable disease,[12] we want to assess female students' awareness of osteoporosis in medical and non-medical university students in Ardabil city.

METHODS

In this descriptive-analytical study, 150 female students were selected by simple random sampling from medical and non-medical universities in Ardabil. The data collection tool was a questionnaire with 27 questions including 4 questions about demographic information and 23 questions about participants' awareness. Demographic information, awareness questions about knowing the disease and some effective factors were included in the questionnaire. Questionnaire validity was assessed by content validity method and getting the feedback from professionals. Its reliability was also verified by test-retest method (r= 0.8).

In order to assess the awareness level, after summing the obtained scores from each questionnaire, we considered the top 25% scores as a proper awareness, the middle 50% as moderate awareness and the rest as poor awareness. The questionnaires were anonymous and they were completed after explanation about objectives of the study and obtaining verbal consent. Collected data analyzed by descriptive statistics (frequency, percentage, mean and standard deviation) and Spearman correlation tests using SPSS.16 software.

RESULTS

The mean age of students was 21.4 ± 1.7 years. 47% of the subjects (72 people) were studying in medical and 52% (78 people) in non-medical university. Father's education level of 46% and Mother's education level of 19% of students were above bachelor's degree.

The obtained score from each question were summed to assess the awareness level. Totally 10.7% of students (16 people) had a good awareness, 60.7% (91 people) had moderate and 28.7% (43 people) had a poor awareness. Students' answer to each question is summarized in Table 1.

There was no statistically significant association between students' awareness level and the university in which they were studying. No relationship between parents' education level and awareness level was observed also (p> 0.05).

Table 1: Students' answer to each question.

	Question	Yes	No	I don't know
		Number (percentage)		
1	Have you ever heard the name of osteoporosis?	143 (95.3)	5 (3.3)	2 (1.3)
2	Did anyone close to you has been diagnosed with osteoporosis?	48 (32)	81 (54)	21 (14)
3	Osteoporosis is a common disease in Iran	122 (81.3)	6 (4)	22 (14.7)
4	Increased bone mass during adolescence is the main factor in primary prevention of osteoporosis	110 (73.3)	11 (7.3)	29 (19.3)
5	The main clinical manifestation of osteoporosis is vertebrae and hip fractures	72 (48)	33 (22)	45 (30)
6	Osteoporosis may lead to death	41 (27.3)	65 (43.3)	44 (29.3)
7	The elderly get osteoporosis more than young people	132 (88)	10 (6.7)	8 (5.3)
8	Osteoporosis is more common in men	12 (8)	104 (69.3)	34 (22.7)
9	Osteoporosis is more common in some races	101 (67.3)	8 (5.3)	41 (27.3)
10	Smoking may lead to osteoporosis	81 (54)	18 (12)	51 (34)
11	Exposure to the sunlight may lead to osteoporosis	12 (8)	110 (73.3)	28 (18.7)
12	Drinking tea and coffee cannot prevent osteoporosis	28 (18.7)	62 (41.3)	60 (40)
13	Osteoporosis may be hereditary	70 (46.7)	32 (21.3)	48 (32)
14	Diary consumption	141	5	4

	will prevent osteoporosis	(94)	(3.3)	(2.7)
15	Lack of sufficient physical activity leads to osteoporosis	91 (60.7)	29 (19.3)	30 (20)
16	People with osteoporosis should not participate in vigorous physical activities	107 (71.3)	21 (14)	22 (14.7)
17	Menopause increases the risk of osteoporosis	116 (77.3)	7 (4.7)	27 (18)
18	Some medicines may lead to osteoporosis	124 (82.7)	3 (2)	23 (15.3)
19	Vitamin D intake is recommended to prevent osteoporosis	135 (90)	4 (2.7)	11 (7.3)
20	Vitamin K is essential for osteoporosis prevention	57 (38)	28 (18.7)	65 (43.3)
21	Taking female hormones after menopause would prevent osteoporosis	81 (54)	21 (14)	48 (32)
22	In women, bone density test should be done until age of 65 years	79 (52.7)	13 (8.7)	58 (38.7)
23	Hyperthyroidism may increase the risk of osteoporosis	75 (50)	15 (10)	60 (40)

DISCUSSION

In this study only 10.7% of students had a proper awareness of osteoporosis. Aghaei et al. also reported that the female high school students' awareness of osteoporosis was poor (40.8%).[5] Since students are considered as the educated and productive group for the future, it was expected that they have a higher awareness of this disease. Perhaps due to the silent nature of this disease, it is presumed to be like other diseases. In Kasper et al.'s study, women's awareness of osteoporosis was poor as well. It is because the studied women did not know that osteoporosis is a dangerous disease and believed that this disease, unlike heart diseases and cancers has not a high mortality.[13] Results of studies conducted by Martin et al.[14], Chang et al.[15], Vakili et al.[16], Kasper et al.[17] and Ghaffari et al. is consistent with results of the present study.

Actually one of the main ways of osteoporosis prevention in societies is applying community-based intervention strategies which requires knowledge of people's awareness, attitude and practice.[19]

95.3% of students had heard the name of osteoporosis. Results of Aghaei et al.'s study (97.9%)[5] And also Kasper and Gaber's studies (97.7%) approves this finding.[20]

In the present study, 94% of students believed that dairy consumption may prevent osteoporosis. In a study conducted by Azizzadeh et al. following osteoporosis preventive diet got the highest score (98.4%). It is probably due to parents' permanent emphasis from childhood and also the impact of mass media.[21] Results of the studies by Manshadi et al.[22], Tumer and Ungan [23] confirms this finding.

43.3% of students were not aware of the danger of osteoporosis. In Hazavahi and Saeedi's study, 50.2% of students believed that this disease is dangerous.[2] In study of Manshadi et al.[22] and Kasper et al.[17], the same results were obtained.

In this research, 60.8% of students mentioned adequate physical activity as a preventive factor for osteoporosis. Studies have shown that everyday physical activity of children and adolescents has a beneficial role in their growth and development and also in their health status of present and future.[2]

69.3% of students said that men are not at risk of osteoporosis more than women. While in Chang's study, most of the subjects believed that women are at a higher risk of osteoporosis[24], only 9.9% of students in Aghaei's research, believed that women are more prone to osteoporosis.[5]

In this study, 73.3% of students said that sunlight exposure does not lead to osteoporosis. This finding is not consistent with study of Azizzadeh et al. results.[21] The effect of sunlight on the daily supply of vitamin D and its role in calcium absorption is obvious.

While 67.3% of students believed that osteoporosis is more common in some races, results of Ghaffari et al.'s study revealed that only 8% of students mentioned that osteoporosis is more common in Caucasians[18]. In Aghaei et al.'s study also, 24.8% of high school students were aware of the role of race in osteoporosis.[5]

In this research, 54% of subjects said that smoking will lead to osteoporosis. This number in study of Hazavahi and Saeedi[2] and Manshadi et al.[22] was 63.8% and 42% respectively.

77.3% of the subjects were aware of the impact of menopause on osteoporosis which is much more than the number of people who were aware of that in Aghaei's study (28.8%).[5] The reason of this difference lies in the nature of these two studied communities.

In the present study, there was no statistically significant association between parents' education level and student's awareness of osteoporosis. Results of Aghaei et

al.'s study also showed that there is no relationship between parents' education level and student's awareness of osteoporosis.

There was no significant association between subjects' awareness and type of university they were studying in. In study of Vakili et al., no significant difference between awareness of students who were studying in various colleges and various degrees was observed as well.[16] Meanwhile results of Ziccardi et al. on nursing students indicated that senior students had a higher awareness of osteoporosis in comparison with junior students.[25]

CONCLUSION

Results showed that students had not a proper awareness of osteoporosis. It seems necessary to provide some educational interventions to promote awareness of all people especially young girls in prevention of osteoporosis and representation educational programs for people about healthy diet, changing lifestyle and having proper physical activity as some effective factors in osteoporosis prevention is recommended. Since osteoporosis is one of the most prevalent skeletal diseases in the world and in Iran, and it imposes substantial costs on governments and families, it is suggested that the government pay a close attention to this subject in its health policies and make more efforts to inform people especially women about this disease.

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