

Research Article

Students' awareness on osteoporosis in Khalkhal city, 2014

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ABSTRACT

Background: Osteoporosis is a “silent killer” that millions of people around the world suffer from. It is estimated that about 9.0 million osteoporotic fractures occurred in 2000 and that many were due to osteoporosis. Awareness about osteoporosis and factors contributing to it is of great benefit and is a major public health challenge. The aim of this study was to assess the knowledge of female university students about osteoporosis through a cross-sectional descriptive analytical study.

Methods: Two hundred female students among Medical Sciences, Payam-e-Noor and Azad universities of Khalkhal city were selected by random sampling based on their type of university and levels of Knowledge. A questionnaire including demographic data and 22 questions on osteoporosis was completed to assess their knowledge. The reliability and validity of the questionnaire was checked by scientific methods. In this study, knowledge means the sum of scores which was classified as desirable, partially desirable and undesirable. Collected data was analyzed by statistical methods in SPSS.19 and proper statistical tests.

Results: The results showed that most knowledge of the students was partially desirable (55.5%). The most resources of knowledge were media (29%). The knowledge scores were not statistically positive associated with educational level ($p=0.568$) and source of information ($p=0.425$), while association was found for age ($p=0.014$), gender ($p=0.0028$) and type of University ($p=0.043$).

Conclusions: On the whole to reduce osteoporosis, it is necessary to concentrate more on intervention programs to increase women's knowledge about this silent disease.

Keywords: Osteoporosis, Knowledge, Student, Khalkhal

INTRODUCTION

Osteoporosis is a “silent killer” that millions of people around the world suffer from.¹ It is a systematic metabolic disease resulting in low bone mass, and deteriorate of bone structure, which increase the risk of fracture.² Osteoporotic fractures are considered a significant cause of morbidity and mortality. It is estimated that about 9.0 million osteoporotic fractures

occurred in 2000 and that many were due to osteoporosis.³ Osteoporosis prevalence in all countries, particularly in Asian countries is growing. There are several risk factors for osteoporosis including: menopause and its age, gender, aging, thinness, inactivity, functional disorders, smoking, coffee consumption, steroid medications, family history of osteoporosis and bone fracture. The most important complication of osteoporosis is fractures in spine and

pelvis region. Prevalence of fractures in Iran is 15.8% and 2.9% for spine and femur bone, respectively. Unfortunately, about 20% of patients die within a year after this complication, and 50% suffer with serious disorders and disabilities.⁴ Studies about this disease are very limited in Iran. Pajouhi and Komylyan confirmed that 70% of women over 50 have osteoporosis or decreased bone density.⁵ A recent study conducted by the Ministry of Health in Iran showed that 47 % of women and 44 % of men over 50 have low bone density, and 4.6 % of people 20 to 70 years suffer from osteoporosis in the spine. Furthermore, among every four Iranian women over 50 years, one person is with osteoporosis.⁴ Awareness about osteoporosis and factors contributing to it is of great benefit and is a major public health challenge. Such knowledge can statistically positive contribute to any community based prevention program and strategy.³ Many studies have looked at the knowledge and awareness about osteoporosis and its risk factors in the world and reported a low degree of knowledge and awareness.⁶⁻⁷ For instance, according to Currey, those who have participated in training programs or trained through media, their osteoporosis prevention skills had increased.⁸ The results of Kassper's et al. in Western University of USA research also showed that women are not aware of the danger of osteoporosis and the beneficial effects of exercise.^{4,9} In this study, we looked at the level of awareness about osteoporosis among Medical Sciences, Payam-e-Noor and Azad universities students in Khalkhal city, Iran.

METHODS

This study is a cross-sectional one aimed at estimating the level of people's awareness of osteoporosis disease in Khalkhal in 2014. For the purposes of the study, 200 individuals were selected through completely random methods, from 3 universities of Khalkhal, from April to July 2014. A consent form signed by the participants and then they were interviewed by the researchers. Exclusion criteria were disability to answer to questions (e.g. deaf, dumb). Information collection process consisted of 2 parts: Part I: demographic characteristics including age, height, weight, level of education, indigenous or non-indigenous, urban and marital status. Part II: 22 questions about osteoporosis among which 15 items were about information about on signs, symptoms and risk factors and prevention factors of osteoporosis. For each question 1 point was assigned. Also for each question with two options 1 point was assigned for each of the options. The score range of the questionnaire was from 0 to 15. After designing the questionnaire, it was reviewed and revised by a nutritionist and the supervisor. To ensure validity, the first version of the questionnaire was handed to 10 university professors in medical faculty on the basis of whose evaluations the necessary modifications were made. At the next stage, to estimate the reliability of the questionnaire The knowledge meant the score that the subjects acquired based on the correct answers to the questions (maximum 15 points). Therefore the subjects'

awareness of osteoporosis were divided as follows: Desirable awareness: acquiring 80-100% of the total points, Partly desirable awareness: acquiring 50-80% of the total points, poor awareness: acquiring 0-50% of the total points. Data analysis was performed using statistical methods in SPSS.19.

RESULTS

The mean and the standard deviation of the age of the patients was 21.3 ± 2.1 . In terms of education, 98/5% were studying in B.A and 1/5% were studying in M.A. Also 59/8% of the students were non-Aboriginal, and 83% urban 83/5% were single (Figures 1 & 2).

Findings related to the osteoporosis awareness of the subjects indicate that osteoporosis awareness of 55.5% (n=111) of the patients were partially favorable, 41% (n=82) favorable and 3.5% (n=7) were unfavorable (Figure 3).

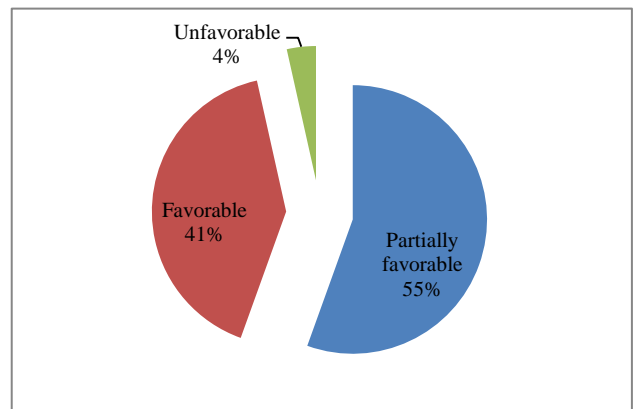


Figure 1: Level of knowledge about osteoporosis among students.

The mean score and the standard deviation of the knowledge of the subjects in terms of their university (Azad, State) are shown in Table 1.

Table 1: Attitude score of participating according to University type.

University type	N (%)	Mean \pm SD
University of medical sciences	80 (40)	12.6 \pm 1.8
Azad University	80 (40)	11.4 \pm 2.1
Payam Noor University	40 (20)	11.4 \pm 1.9
Total	200 (100)	11.9 \pm 2

There is meaningful relationship between the scores of students' knowledge and type of university. The highest score, in terms of favorability, belongs to medical and the lowest awareness scores belong to Azad University students. The results show that the most frequent related to the age group of the 20-23 years with 162 (81%) (Figure 2).

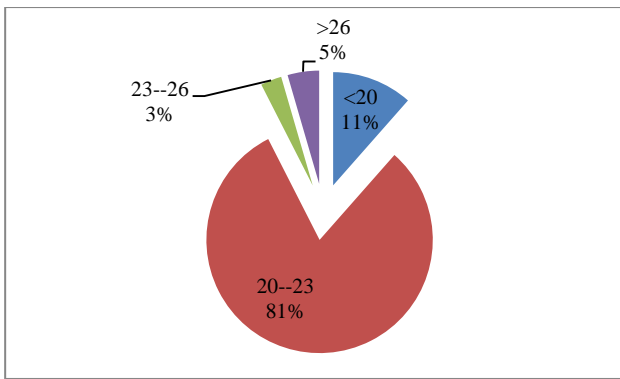


Figure 2: Age of participating students.

As can be seen in Figure 3, most people have gained their information through the media. But a significant relationship was observed between the amount of the knowledge and information resources.

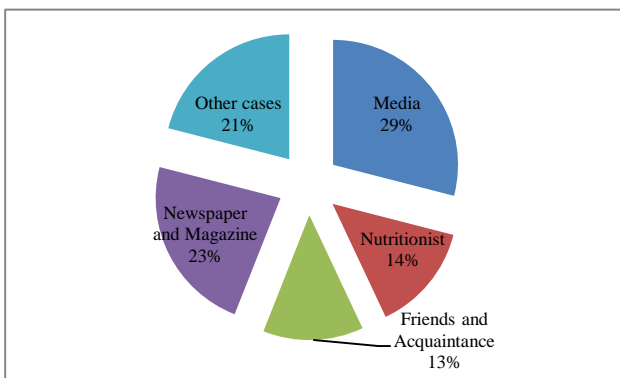


Figure 3: The resource of getting knowledge about osteoporosis.

From students' points of view, the most important factors that could affect the development of osteoporosis include: Soft drinks (91%), old age (82.4%), female sex (73.7%) and high salt intake (69.6%). The most important preventive factors identified by students include: dairy usage (97%), exposure to sunlight (84/1%), avoiding alcohol (91.4%), receiving estrogen after menopause (93/3%), receiving calcium (96.5%) and taking vitamin D (89.4%). 73.4% of the cases had knowledge about the method of the exact diagnosis of the illness (146 cases), but this knowledge did not meaningfully related to any of demographic factors (age, level of education, school). Only 15 percent of students were aware of the protective effect of replacement therapy of estrogen.

DISCUSSION

This study investigated the level of awareness about osteoporosis among universities students in Khalkhal city-Iran, as described above. Osteoporosis is considered a global public health problem and is most prevalent among postmenopausal Women.¹⁰ University students are considered as the youngest part of any community.

Therefore, knowing about osteoporosis among university students will help in adopting living and nutritional standards that will help to avoid such bone thinning disease. Furthermore, university students who have good knowledge about osteoporosis are key factors in raising the community awareness about this disease. More than three quarters of university students showed a high osteoporosis knowledge level. So that the awareness of 41% (n=82) of the participants were desirable, 55.5% (n=111) partly desirable and 3.5 percent non desirable (n=7). In a similar study conducted by Amani et al. in Ardebil (Iran) the general level of individuals' awareness of osteoporosis disease and factors affecting it was 13.3 ± 2.9 , and 73.6% of participants had a moderate level of awareness.¹¹ In Yeap's study, in Malaysia, 87.1% of individuals had heard the word osteoporosis.¹² Also in a study conducted by Shine, average awareness of people was 9.1 ± 1.7 out of 10.¹³

According to the present study Medical science university students were more knowledgeable about osteoporosis than Payam-e-Noor and Azad universities students. This result can be due to being in a position in which there is access to appropriate necessary information and the importance of this issue has been understood well.

In this study, there was a significant positive correlation among the level of knowledge and age ($p=0.014$) and marital status ($p=0.028$). In a related study also significant relation between the knowledge, age and marital status have been observed. While in the study conducted by Hatmi such a significant correlation was not found.¹⁴ Regular intake of fruits and vegetables can improve bone mass and prevent osteoporosis in all age ranges.¹⁵ In the present research, 89.4% of the cases were of the opinion that vitamin D is useful in osteoporosis prevention. This is not in concordance with that of Hazavahi and Saeedi's who reported that only 38% of subjects pointed to the benefit of vitamin D in better absorption of calcium and negative effects of sour foods.¹⁶

In this study, 73/4% of the students were aware of the most accurate ways to diagnose and 15% of the students were aware of methods of treatment. Also in a related study conducted by Rachon et al. 20% of the women in the study had the knowledge that estrogen replacement therapy reduces the risk of osteoporosis developing.¹⁷

In the present study, the greatest risk factor identified by students was carbonated beverages (91%). In a similar study conducted by Gurryet et al. identified the premature menopause and race as biggest risk factors that do not correspond with our findings.¹⁸ In study conducted by Mahmoud et al., on 275 school and college students in Daubi, where results proofed that soda drinking was associated with higher risk of obesity, and decreasing levels of blood calcium and increasing urinary calcium excretion which may lead osteoporosis. Further evidence

also supports an association between soft drinks consumption and decreased bone mineral density.¹⁹ In a study done on 270 women in Turkey by Tumer and et al., it was revealed that more than 40% of women did not know the risk factors for the disease. Which was not in line with the results of this study.²⁰ The source of information for the majority of people (29%) was through the media and only 13% of information was from friends and acquaintances. In a study conducted by Galili et al, media was the first source followed by friends and relatives (40% and 34.4% respectively). In a study conducted by Filip et al. the main sources of information have been mentioned television and radio. In a study conducted by Saw the main sources of information have been mentioned the media and friends. This reflects the important role of media in society.²¹⁻²³

CONCLUSION

On the whole to reduce osteoporosis, it is necessary to concentrate more on intervention programs to increase women's knowledge about this silent disease. As a conclusion, raising the knowledge about osteoporosis is an important and effective tool in preventing osteoporosis.

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Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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