Assessment of Osteoporosis Knowledge Test among Community Population in Abha City, KSA

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ABSTRACT
Background: there is a high prevalence of osteoporosis in KSA indicating a low preventive measures and a lack of knowledge about radiological investigations importance and hazards.
Objectives: assessing the general knowledge of osteoporosis risks, screening, treatment and physical activity as well as evaluating the awareness about radiological investigations timing and effects.
Methods: a community survey study based on a reliable questionnaire that was distributed among general community in Abha city from March 2017 to June 2017.
Results: most of subjects were young, females and have college degree. Only 17% of subjects reported having osteoporosis. Most of participants (52%) have good overall general knowledge but only 42% had good knowledge regarding the calcium recommendations and 21% have good knowledge about importance of physical activity in prevention of osteoporosis. 60% of subject shave good knowledge about the risk factors of osteoporosis and 75% had good knowledge regarding the symptoms and radiological investigations.
Conclusion: The overall knowledge in Abha City was good in 52% of subjects however, the levels of knowledge about preventive measures were poor while the majority had adequate knowledge regarding the risk factors, symptoms and radiological investigations. Although, a moderate prevalence of good knowledge, educational programs must be adopted by health authorities to motivate healthy behaviors for prevention of osteoporosis in our community.
Keywords: Osteoporosis, Awareness, Radiology, Abha.

INTRODUCTION

According to the WHO, osteoporosis is classified as the 10th most common worldwide disease that linked to civilization in the modern world (1,2). The entire population is at risk of osteoporosis at any age but post-menopausal women and old people are more susceptible to development of this disease (3, 4).

Falling is a major symptom for osteoporosis as the disease may remain silent till the first fracture occur after even minor falls (5). The process of osteoporosis is complex as it takes long time and in early stages the patients many had no symptoms or little pain of bones, then the bones become fragile, lost its architecture and make the bones easily fractured (6, 7).

The knowledge of osteoporosis risks, preventive behaviors as well as importance of early diagnosis is the focus of many studies in KSA resulting in good preventive programs and decreasing the prevalence of this silent disease (8);although many studies in KSA revealed a poor knowledge about osteoporosis (9-11). Thus the assessment of

knowledge could aid in prevention of the disease and increasing the concern of KSA health authorities about the educational campaigns of osteoporosis (3, 12).

AIM OF THE STUDY

This study aimed at exploring the awareness of Saudi population about osteoporosis risks, physical activities and preventive measures as well as assessing the general knowledge about importance of routine radiological investigations.

METHODS

- *Study design and setting:*
    This was a community survey study conducted among general adult population during the period from January 2017 to April 2017.
- *Sample size and population*
    This study included 300 Saudi adult subjects aged 20-60 years old living in Abha city. Non-Saudi subjects and adolescents were excluded from the study. The study population were selected using multi-stratified randomizing technique from

different parts in Abha city as subjects were interviewed in malls, Masjd, Primary Health Care centers.

Study tools

A questionnaire was adopted from the Osteoporosis Knowledge Test (OKT) of Gendler *et al.*[13] and the scores were based on correct answers were given 1 and incorrect answers will take 0. The original questionnaire included 42 questions but this questionnaire was modified to contain 2 aspects the 1st included demographics of included subjects and the 2nd part consisted of a 18 questions about the risks, exercise and treatments. The collected data were analysed using SPSS version 22.0 and the significant level was set at P. value ≤0.05.

Ethical approval

A written consent is obtained from all participants who are enrolled on the present study. An ethical approval from the Faculty of medicine ethical committee is done for conducing the research.

RESULTS

Demographics of the included respondents:

Most of included subjects (43%) aged 21-35 years old, 32% aged from 46-50 years old and only 25% aged from 36-45 years old. 53% of subjects were female and 47% were males. The majority of subjects (52%) had college degree, 37% had high school degree and 11% had post graduate degree (Table 1).

Table (1): Demographics of Saudi females (n = 300)

	N.	Percentage (%)
Age (Year)		
21 - 35	129	43%
36 - 45	75	25%
46-60	96	32%
Gender		
Male	141	47%
Female	159	53%
Level of education		
High School	111	37%
College degree	156	52%
Post-graduate	33	11%

Prevalence of osteoporosis

The prevalence of osteoporosis showed that 51 (17%) of subjects answered that they had osteoporosis and 249 (83%) said that they don't have osteoporosis (Figure. 1).
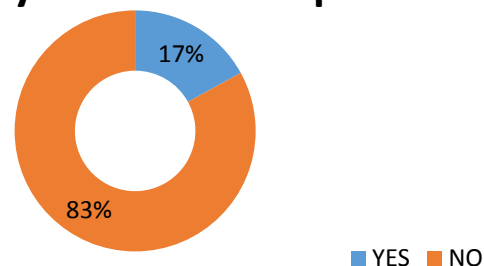

Do you have osteoporosis?

17%

83%

■ YES ■ NO

Figure1: Prevalence of osteoporosis in included subjects

Awareness about osteoporosis in included subjects

As for the awareness of included subjects about osteoporosis risk factors, most of subjects answered correct questions about the importance of dairy products in diet. Also, 77% of them had correct answers regarding the effect of alcohol consuming and eating disorders in predisposing of osteoporosis. 80% of subjects had correct answer regarding the adverse effects of smoking on osteoporosis. However, most of participants had incorrect answers regarding the effect of age and postmenopausal period as well as the effect of genetics and being Asian on higher susceptibility to osteoporosis. The knowledge about calcium recommendation showed that most of subjects answered true questions about the importance of drinking 3 cups or more (67%) as well as viable effects of sunlight (63%) to prevent osteoporosis. On the other hand, the majority had wrong answered regarding the importance of Cheese, broccoli, sardines and yogurt 62(%) as sources of calcium and using calcium supplementation for those not having enough calcium in diet (55%).

Regarding the physical activities, 71% and 68% of subjects answered wrong questions about importance of 5 days of exercise per week, running and aerobic dancing in prevention of osteoporosis,

respectively. Most of participants answered true answered about the symptoms (88%)and treatments of osteoporosis (90%). The knowledge about radiological investigations should that most of subjects answered wrong questions regarding using DXA for diagnosis of osteoporosis (52%) and 77%

had no true knowledge about importance of advising old aged and postmenopausal women to do radiological investigations. However, 64% had good knowledge about importance of routine radiological investigations and 87% knows about the harmful effects of excessive exposure to radiation (Table. 2).

Table. (2): Level of awareness about osteoporosis in included subjects

Risk factors for osteoporosis	True	False
1. Low dairy products in diet could lead to osteoporosis?	210 (70%)	90 (30%)
2. Being old or in post-menopausal women are risk factors for osteoporosis?	93(31%)	207(69%)
3. Genetics and being Asian makes people more susceptible to osteoporosis?	57 (19%)	243 (81%)
4. Eating disorders and consuming alcohol are risk factors for osteoporosis?	231 (77%)	69 (23%)
5. Daily smoking habit, more likely to have osteoporosis?	240 (80%)	60 (20%)
Knowledge about Calcium recommendations	**True**	**FALSE**
6. Is drinking three or more cups of milk daily could prevent from osteoporosis?	201 (67%)	99 (33%)
7. Cheese, broccoli, sardines and yogurt are the best sources of calcium?	114 (38%)	186 (62%)
8. Sunlight is a must for viable absorption of calcium?	189 (63%)	111(37%)
9. Is calcium supplementation for people not having enough calcium from food?	135 (45%)	165 (55%)

Knowledge about physical activities	True	FALSE
10. Five days of exercise per week could strength bones and prevent osteoporosis?	87 (29%)	213(71%)
11. Running and aerobic dancing are the best activities for decreasing osteoporosis?	96 (32%)	207 (68 %)
12. Routine physical activity is recommended for prevention of osteoporosis?	234 (78%)	66 (22%)
Knowledge about symptoms and treatments		
13. Osteoporosis had no symptoms especially during the early stages?	264 (88%)	36 (12%)
14. Osteoporosis can be treated after diagnosis?	270 (90%)	30 (10%)
Knowledge about radiological investigations		
15. Osteoporosis must be diagnosed using DXA scan.	144 (48%)	156 (52%)
16. Routine radiological investigations should be done for early assessment of osteoporosis?	192 (64%)	108 (36%)
17. Doctors should advice old aged and postmenopausal subjects to do radiological investigations?	69 (23%)	231 (77%)
18. Excessive exposure to radiation could cause harmful effects?	261 (87%)	39 (13%)

Knowledge score

Table. 3 showed 52% of subjects had good general knowledge about osteoporosis while 48% had poor knowledge. The majority of participants (60%) have good knowledge about the risk factors of osteoporosis, while only 42% had good knowledge about calcium recommendations for prevention of osteoporosis. Also, only 21% of subjects had good knowledge about the importance of physical activities in prevention of osteoporosis. The knowledge about the symptoms and radiological investigations was good in 75% of subjects (Table. 3).

Table (3): Knowledge of osteoporosis score

General knowledge score	Knowledge Score
Good Knowledge	156 (52%)
Poor knowledge	144 (48%)
Knowledge about risk factors	
Good Knowledge	180 (60%)
Poor knowledge	120 (40%)
Knowledge about calcium recommendations	**Knowledge Score**
Good Knowledge	126 (42%)
Poor knowledge	174 (58%)

Knowledge about physical activates	Knowledge Score
Good Knowledge	63 (21%)
Poor knowledge	237 (79%)
Knowledge about symptoms and radiological investigations	**Knowledge Score**
Good Knowledge	225 (75%)
Poor knowledge	75 (25%)

DISCUSSION

This study showed that the level of knowledge among included subjects about osteoporosis is insufficient. A significance difference concerning the knowledge was found between this study and other studies conducted in KSA. This study showed that

52% of subjects have good knowledge other studies in KSA showed higher levels of knowledge [3, 14-16].

As for the knowledge about radiological investigations, most of subjects had good knowledge. Although, doctors don't provide subjects about the importance of DXA scan in diagnosis of osteoporosis as well as the importance of routine radiological investigations in old aged people and postmenopausal women. Thus doctors should provide people with the necessary information about osteoporosis and its radiological investigations as it is a responsibility of health care providers.

However, there is a high level of knowledge regarding the osteoporosis, it is highly prevalent in KSA. The prevalence of osteoporosis in the present study was only 18% and this could be attributed to small sample size. On the other hand, an epidemiological studyfound a high prevalence of osteoporosis in 34% of healthy Saudi women, and 30.7% of men[17], and is expected to increase with increasing age [18].

The present study has some limitations including that most of subjects are educated and don't resemble the whole population in Abha. Also, the sample size was small due to limitations of time and transportations.

CONCLUSION

The overall knowledge in Abha City was good in 52% of subjects however, the levels of knowledge about preventive measures were poor while the majority had adequate knowledge regarding the risk factors, symptoms and radiological investigations. Although, a moderate prevalence of good knowledge, educational programs must be adopted by health authorities to motivate healthy behaviors for prevention of osteoporosis in our community.

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