

Knowledge regarding osteoporosis among female college students: a sample from Nursing and Technical College of Health and Medicine

المعارف حول هشاشة العظام لدى طالبات الكليات: عينة من طالبات كلية التمريض وكلية التقنيات الطبية و الصحية/بغداد

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Abstract

Osteoporosis has emerged as one of the most significant public health problem in the world especially in developing countries. To evaluate the knowledge regarding osteoporosis among a sample of female Nursing and Technical College of Health and Medicine students. A cross-sectional study including 150 female students from Nursing College, Technical College of Health and Medicine/ Baghdad, during November and December 2014, they were subjected to previously structured questionnaire covering many aspects of osteoporosis distributed in 4 main domains and the students responses were analysed by frequency, percentages and percent score for each question and mean percent score for each domain. Mean percent scores (77% and 60%) for aetiological factor and medical reason domains while (82% and 79%) for complications, and ways of prevention and treatment domains. Satisfactory knowledge level regarding oosteoporosis among study sample.

Key wards: knowledge, female, college students, osteoporosis.

المستخلص

طرات هشاشة العظام كاحد مشاكل الصحة العامة في العالم الاكثر اهمية خصوصا في البلدان النامية. لتقييم المعارف بخصوص هشاشة العظام من خلال عينة من طالبات كلية التمريض وكلية التقنيات الطبية و الصحية/بغداد. دراسة مقطعية شملت (150) طالبة من كلية التقنيات الطبية والصحية وكلية التمريض/ بغداد خلال شهر تشرين الثاني وكانون الاول 2014 ، تم عرض عليهن استماره استبيان معدة مسبقا تغطي جوانب متعدده لهشاشة العظام في اربعة محاور رئيسيه ومن ثم تم تحليل البيانات باستخدام التكرار والنسب المئوية للاجابات لكل سؤال ومعدل النسبة المئوية لكل محور. معدل النسب المئوية كان (77%، 60%) لمحوري عوامل خطورة المرض والاسباب الطبيه للمرض بينما كان معدل النسب المئوية (82%، 79%) لمضاعفات المرض وطرق الوقايه والعلاج. مستوى المعارف كان مقنعا بالنسبه لهشاشه العظام عند عينه البحث.

Introduction

Osteoporosis is characterized by decreased bone density leading to higher susceptibility to strains (^{1, 2}), fractures (legs , vertebra , proximal femur , distal radius , humerus and tibia) .Compression of mid thoracic vertebrae and upper lumbar vertebrae , progressive deformation of spinal column , reduced height and radical apathies (³). Osteoporotic fracture can lead to pain, disfigurement, disability, depression, location depend on and death (^{4,5}).

Osteoporosis includes several controllable and uncontrollable risk factors. The controllable risk factors (environmental) include low activity level , sedentary life style over many years , smoking ,alcohol abuse and inadequate diet including eating disorder , low calcium intake , low vitamin D intake , and excessive consumption of soft drinks , whilst the uncontrollable risk factors include gender , family history , ethnicity and race , advancing age , post-menopausal statue and body frame size (⁶) .

Osteoporosis is a major and growing public health problem in both sexes but particularly in women and one of the risk factors for osteoporosis had been identified. is female sex (3). Although it is preventable disease , Osteoporosis affect an estimated 25 million people world-wide leading to one million fractures , 40,000 annual deaths and health costs of billions of dollars (7) . There is evidence supporting that knowledge on osteoporosis is a major contributor to osteoporosis preventive behavior (8).

Osteoporosis prevention programmes for the young women have the potential to reduce osteoporosis risk and thus prevent or delay the development of the disease. The rationale for early primary intervention is that attaining and maintaining strong, dense bone as a young adult is a critical factor in the prevention of osteoporosis in later life (3).

This study aims to evaluate the knowledge regarding osteoporosis among female college students of Nursing and Technical College of Health and Medicine/Baghdad.

Materials and Methods

A cross sectional descriptive study included (150) female, college students (Nursing College and Technical College of Health and Medicine), Baghdad, during November and December 2014.

They were selected randomly by simple random sampling technique and invited to participate after clarifying the purpose behind the study, assuring high confidentiality and willing participants gave verbal consents and they completed a comprehensive previously prepared self-structured close ended questionnaire in designated areas of the included colleges.

The questionnaire consists of socio- demographic characteristics and different questions covering the knowledge regarding osteoporosis .Descriptive data analysis (frequency and percentages) are used for each question responses and a score of (3) was given for each yes answer , (2) for answering don't know and (1) for answering (No) .

The percent score for patients' responses in each specific item was calculated according to the following equation:

Total scores for all participants in the item X 100 / maximum possible score for all participants in the same item. Where total scores for all participants in the item= [(No. of no x 1) + (No. of don't know x 2) + (No. of yes x 3)]. And maximum possible scores for all participants in the same item=

[No. of total patients x 3], based on Triple Likert Scale and also overall percent score was calculated for each domain (mean percent score for all responses for each domain) and after approximation, the percent score categorized as students who had score less than 60% considered as poor, 60% to 69% as fair, while those with 70% to 79% were considered as good and 80% to 89% as very good (9).

Results

The total number of the included female students was 150 with age range 18-28 years. The highest percentage 54.7% stated that the source of their information regarding osteoporosis was the medical and health personnel followed by internet 20% as shown in table (1).

Table (1) Source of information regarding osteoporosis (N=150)

Source of information	n	%
TV - Radio	20	13.4
Internet	30	20
Medical and Health personnel	82	54.7
Mothers, Friends , and relatives	11	7.4
Others(journals and magazines)	14	9.5

The knowledge regarding risk factors of osteoporosis with highest proportion of correct responses (84.7%, 78.7%, 70%) with percent score (91.5%, 88.5%, 87%) regarding decreased vitamin D and calcium intake, advanced age, decreased physical exercise respectively, while the lowest proportion of correct responses (16%, 19.3%) with percent score (55.5%, 59.5%) regarding decreased exposure to sun light, increased fibre diet intake. The mean percent score for this domain was 77% as shown in table (2)

Table (2): Distribution of the knowledge of the students regarding risk factors of osteoporosis. (N=150)

Risk factors of Osteoporosis	yes		no		don't know		Percent score
	no	%	no	%	no	%	
Females are exposed more than males	79	52.7	23	15.3	48	32	79 %
Advanced age	118	78.7	20	13.3	12	8	89%
Early menopause	89	59.3	15	10	46	30.7	83%
Smoking	90	60	30	20	30	20	80%
Excessive alcohol drinking	105	70	18	12	27	18	86%
Excessive, coffee, tea, and soda drink	108	72	20	13.3	22	14.7	86%
Family history of Osteoporosis	87	58	35	23.3	28	18.7	78%
Decrease physical exercise	105	70	14	9.3	31	20.7	87%
Decrease Vitamin D and calcium	127	84.7	15	10	8	5.3	92
Increase salt intake	48	32	42	28	60	40	68%
Decrease exposure to sun	24	16	74	49.3	52	34.7	56%
Increase fibre diet	29	19.3	61	40.7	60	40	60%
No breast feeding and no pregnancy	45	30	49	32.7	56	37.3	71%
Sever thinnest	58	38.7	39	26	53	35.3	66%
Multiple pregnancies	84	56	27	18	39	26	79%
Mean score=77%							

The knowledge responses regarding the medical reasons of osteoporosis was disappointing but the highest proportion of correct responses 28.7% with percent score 64% regarding psychological diseases while the lowest proportion of correct responses 11.3% with percent score 55% regarding excessive cortisone and heparin use.

The mean percent score of this domain was 60% as shown in table 3.

Table 3: Students responses regarding medical reasons of Osteoporosis (N=150)

Medical reasons of osteoporosis	Yes		no		don't know		Percent score
	no	%	No	%	No	%	
Gastro-intestinal disease	33	22	68	45.3	49	32.7	59%
Renal failure	34	22.7	60	40	56	37.3	61%
Thyrotoxicosis	29	19.3	64	42.7	57	38	59%
Excessive cortisone and heparin use	17	11.3	68	45.4	65	43.3	55%
Psychological disease	43	28.7	56	37.3	51	34	64%
Surgical removal of ovaries	29	19.3	45	30	76	50.7	63%

Mean percent score = 60

In respect to students responses regarding complications of osteoporosis , the highest proportions of correct responses 74.7% and 73.3% with percent score 84% and 87% regarding inability to walk and exposure to fracture, the lowest proportion of correct responses 38% with percent score 68% regarding decreased height. The mean percent score= 82% as shown in table 4.

Table (4): knowledge of students regarding complications of osteoporosis (N=150)

Complications of osteoporosis	Yes		no		don't know		Percent score
	no	%	No	%	No	%	
Backache and arching	109	72.7	13	8.6	28	18.6	88
Decreased height	57	38	51	34	42	28	68
Inability to walk	112	74.7	19	12.6	19	12.6	84%
Exposed to fracture	110	73.3	17	11.3	23	15.3	87%

Mean score= 82%

The knowledge responses regarding the ways of prevention and treatment of osteoporosis was very encouraging. The highest percentage of correct responses (84.7%, 80.7% and 77.3%) with percent score 93%, 91.5% and 90%) for regular follow up with doctors, enough exposure to sun light and increase calcium and vitamin D intake respectively while the lowest proportion of correct responses for hormonal treatment 20.6% with percent score 60%. The mean percent score for this domain was 79% as shown in table 5.

Table (5): knowledge of students regarding prevention and treatment of osteoporosis(N=150)

osteoporosis	Prevention and treatment of				don't know	Percent	
	Yes	score		No			
Increase calcium and vitamin D intake	116	77.3	12	8	22	14.7	90%
Regular physical exercise	104	69.3	18	12	28	18.7	86%
Stop smoking and alcohol intake	104	69.3	15	10	31	20.6	87%
Enough exposure to sun light	121	80.7	9	6	20	13.3	92%
Decrease coffee, tea and soda drink	106	70.6	19	17.6	25	16.6	86%
Enough rest	37	24.6	66	44	47	31.3	60%
Hormonal treatment	31	20.6	59	39.3	60	40	60%
Regular, follow up with doctors	127	84.7	10	6.6	13	8.6	93%
Encourage breast feeding	101	67.3	17	11.3	32	21.3	85%
Surgical treatment	10	49	15	10	86	57.6	48%
Mean score=79.							

Discussion

Osteoporosis is a growing concern among women now days as the number of those inflicted is on the rise ⁽¹⁰⁾. Prevention is recognized as an ideal approach to reduce the burden of osteoporosis. Knowledge is considered as an important component in any preventive program ^(11, 12).

In the current study, 54.7% of the included students stated that health and medical personnel were the main source of information regarding osteoporosis followed by internet 20% while in Malaysia ⁽¹³⁾, 28.8% of students identified friends and relatives, followed by television 23.6% while only 6.7% identified health care professional as the source of information and in Egypt ⁽¹⁴⁾ in a study conducted among female college adolescents, the main source of information was television 34% followed by mothers and relatives 27.1%.while at India, 32% stated that they came to know about it from friends, 24% from physicians and 21% from magazines and newspapers ⁽¹⁵⁾.

In respect to disease aetiology, the percentage of correct responses were high regarding decreased vitamin D and calcium intake 84.7% and advanced age 78.7% while the lowest correct responses 16% regarding decreased exposure to sun light this is consistent with the results of KAP survey in Malaysia ⁽¹³⁾, 78.8% identified lack of milk and dairy products, lack of exercise 67.7% and being a female 58.6% and only risk factor that a majority 50.1% answered ‘don’t know’ was avoidance of sunlight.

In Egypt ⁽¹⁴⁾ osteoporosis knowledge among female adolescent students revealed that being a female and advanced age as the most common identified risk factors (48.4% and 29.8% respectively). Low calcium intake and early menopause was answered by 5.7% and 5.4% as risk factors also excessive in drinking of soft drinks were recognized by 1.8% of the responses.

Student’s perception in Cairo University showed 45%, 21.6% and 6.3% for high consumption of soft drinks, low milk consumption and not practicing any sort of exercise respectively ⁽¹⁶⁾.

A high percentage of all responses of osteoporosis knowledge among white American female students 89.1% were able to identify the risk factor of family history, low calcium intake 86.1% and about 2/3 of responses were able to identify that female gender was as risk factor of osteoporosis ⁽¹⁷⁾.

Regarding the medical reasons of osteoporosis, high percentage of correct responses 28.7% regarding psychological diseases, while the lowest percentage 11.3% regarding excessive heparin

and cortisone use, while 16% of participants of ⁽¹⁰⁾ stated that taking cortisone for long time were likely to get osteoporosis also having ovaries surgically removed, most likely to get osteoporosis.

In Malaysia ,the results of (KAP) survey of osteoporosis among students of a tertiary institution , worry or anxiety was identified as a needed cause of osteoporosis by 44.4% of the respondents, taking cortisone 42.1%, and early surgically induced menopause 41.1% ⁽¹³⁾.

The responses of the study participants regarding complications of osteoporosis was highly correct 74.7%, 73.3% for exposure to fracture and inability to walk while 38% stated decreased height, this is consistent with the findings of ⁽¹³⁾ In Malaysia,84.4% identified bone fracture, slouched body posture 38% Among the Turkish women ⁽¹⁸⁾, 65% were unaware that the disease is directly responsible for disability, hip fracture.

The opinion of 42% of Indian students as osteoporosis was responsible for bone fracture that osteoporosis cause loss of height was mentioned by only 13 students, 2% responded to the fact that the disease caused hunched back ⁽¹⁵⁾.

In respect to ways of prevention and treatment of osteoporosis, the highest correct responses 84.7%, 80.7% and 77.3% regarding regular follow up with doctor, enough exposure to sun light and increase calcium and vitamin D intake while the lowest correct responses proportion 20.6% ,24.6% for hormonal treatment and enough rest.

In a study conducted at India ⁽¹⁵⁾, diet and exercise can prevent osteoporosis was stated by 78% of the participants and 35% marked that it can be prevented by hormone use and76% stated the role of sun light in vitamin D synthesis .

In Egypt ⁽¹⁴⁾, the participants stated regular exercise and exposure to sun light as preventive measures for osteoporosis (94.6% and 90.2 %.) while in another Egyptian female students. 59.1% and 24.3% identified regular exercise and healthy intake of food rich in calcium as preventive measures for osteoporosis ⁽¹⁶⁾.

- The main source of information regarding osteoporosis was health and medical personnel followed by internet.
- The knowledge responses regarding osteoporosis in the study 4 domains distributed as follows.
- Good mean percent score for aetiology,prevention and treatment domains and fair for medical reasons domain.
- Very good mean percent score for complications of osteoporosis domain.
- The study could serve as a stimulant for further researches to assess knowledge with various samples and different age groups.
- There in continuous need of a targeted education and awareness program for university students belonging to different age groups.
- Ministry of Higher education and Scientific Research should be involved in health education about osteoporosis in colleges could provide educational progress via their curriculum and thus in serving that they receive accurate information.

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