Knowledge of Osteoporosis among Health Workers Women in Alfalujah Teaching Hospital

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Abstract:

Background: osteoporosis is being reported as a major cause of morbidity among elderly individuals worldwide. Health professionals are the key link in the chain of multidisciplinary approach to the management of this potentially preventable disease and educating patients about the various aspects of its evaluation and management.

Objective: To assess the level of Knowledge among women work at AL-Fallujah Teaching Hospital regarding osteoporosis.

Methodology: This was a descriptive cross sectional study included 359 women working at Al-Fallujah Teaching Hospital using self-administrated questionnaire as well as fact on osteoporosis quiz (FOOQ). All participants were asked to answer the questionnaire without disclosing their identity after their approval to participate in this study. Demographics data and mean score on the Fact On Osteoporosis Quiz (FOOQ) were summarized by using a descriptive measures.

Result: A total of 214 out of 359 women returned the questionnaires (response rate was 60%).
The overall mean score in general among studied group was 13.47out of twenty. The study showed that the health workers have good-moderate in general knowledge as well as for preventive measures, but they have acceptable-poor knowledge regarding risk factors and treatment.

Conclusion: This study highlights the Fact that knowledge about osteoporosis among health workers in Al-Fallujah Teaching Hospital was insufficient.

Key words: Osteoporosis, Knowledge, Fallujah, Health workers , Fact on osteoporosis quiz

Introduction:

According to the WHO. osteoporosis is classified as the 10th most common worldwide disease that linked to the civilization in the modern world [1,2].

Osteoporosis is chronic progressive disease, it is defined as a systemic skeletal disease characterized by reduction of bone mass and structural abnormality of bone tissue with a consequence increase in bone fragility that greatly increased chance of fractures [3].It is a major public health problem; it is estimated to affect 200 million women worldwide and causes more than 8.9 million fractures annually [4; 5]. In 2014 the National Osteoporosis Foundation estimated that a total of 54 million adult aged 50 and older in USA were affected by osteoporosis and low bone mass [6, 7].

In Europe; in 2010, approximately 22million women and 5.5 million men aged between 50 and 84 years were estimated to have osteoporosis [8].

Prevalence of osteoporosis in developing countries is on the increase issue, the identification of osteoporosis in Arabian countries was considering a major health problem. In Egypt a different studies showed that 53.9% of postmenopausal women have osteoporosis, on the other hand, 26%of men have osteopenia and 21.9% have osteoporosis [9].

In Iraq, osteoporosis is recognized as a major health problem and the government has approved guidelines and developed health professional training [10].

Osteoporosis is an underdiagnosed disease [11; 12]; yet prevention is better than treatment as osteoporosis is a preventable disease. The first step in its prevention is to increase awareness of the people about the risk factors [13, 14].

Knowledge of osteoporosis risks, preventive behaviors as well as importance of early diagnosis resulting in good preventive programs and decreasing the prevalence of this silent disease [15; 16].

Several studies in different populations assessed the knowledge and attitudes toward osteoporosis aiming at providing baseline data essential for planning educational interventions in these topics [17; 18].

Health care professionals who are directly involved in delivering the treatment to patients are expected to have better understanding and knowledge about osteoporosis, nursing professionals and doctors are the key link in the management of this potentially preventable diseases [19,20],but there are emerging studies in several countries which have shown lack of adequate knowledge among health workers [21;22;23].

Inadequate data are available about osteoporosis knowledge among women or health workers in Iraq [24]. So the current study was conducted in order to assess the knowledge about osteoporosis and its risk factors among health workers using the Fact On Osteoporosis Quiz (FOOQ) method with some modification.

Method:

In April 2018 we conducted a descriptive cross sectional survey of health workers female staff in teaching hospital attached to Al-Fallujah Medical College using the Facts On Osteoporosis Quiz (FOOQ) method with some modification to adapt with Iraqi culture (namely those related to alcohol consumption which replaced by statements that refer to importance of calcium rich food, sun exposure, dieting effect and some drug effect).

All female workers in hospital were included (medical workers as doctors, nursing staff, laboratory workers and administrative female workers), women were excluded from the study if they are less than secondary school education.

An approval to conduct the study was obtained from ethics committee of the Al-Fallujah Teaching Hospital.

Arabic translation of the FOOQ was done by a licensed translation office. The collection was done by using a self-administration questionnaire composed of two parts:-

The first part included the socio-demographic characters of studied groups as age, marital status, level of education, working site in hospital, duration of work,

their menstrual history and hormonal replacement therapy.

The second part included assessment of the level of knowledge of studied groups regarding general knowledge (first five questions), risk factors (second nine questions), symptoms and treatment knowledge (following three questions) and consequences and prevention of disease (last three questions).

The Quiz composed of 20 true and false questions. Each question had true , false and " do not know " options, the last option was included to avoid guessing. The scoring of the answers was done as follows: one mark was given for every correct answer and zero for every wrong answer as well as for " do not know " response.

The total scoring ranged from zero to twenty. The participation was optional.

Data were analyzed using statistical package for social science (SPSS) version 23. All qualitative variables are described as numbers and percentage, while quantitative variables as mean ± standard deviation (SD).The percent total knowledge score was calculated by Z-test and one way ANOVA were used to compare the means.

Simple correlation was conducted using Pearson correlation test. A p value of less than 0.05 was considered statistically significant.

Result:

A total of 214 out of 359 female health workers returned the questionnaires (response rate was 60%).

The mean age of studied women was 28.35±7.05SD years (range 20-53 years), majority of them were aged below 40 years (91.1%), postmenopausal women represent 0.9% (n=2) only of studied women, most of studied women were either married or single. A large numbers of respondents were nurses 42% and respondents with experience of fewer than 5 years are the greatest group 61.7% (Table 1).

All studied women reported that they are familiar with osteoporosis, but only about three quarter (72.9 %) of them are worried about it, 70.6% of them perceive it as a serious disease and 81.8% were aware of presences of a diagnostic tool for osteoporosis (Table 1).

The overall mean score in general was 13.47. Among doctors, nurses and laboratory workers were 14.68, 13.11, 12.98 respectively and 12.71 for administrative workers. High scores obtained by medical health workers (doctors and nurses) (Table 1).

The mean score showed no significant differences between the age group below and above 40 years, between married and single subjects, among women with below 5years and those with more than 15 years seniority, as well as the studied women's educational level was not statistically significant. On the other hand the difference in mean score among studied women regarding professional status shows statistically significant difference (p=0.002) (Table 1).

The FOOQ total score for studied women ranged from 1-19 out of total score 20, the mean score of participants knowledge was 13.47±2.95, the score in various subsection of knowledge was shown in table 2.

Good knowledge in general awareness achieved 4 scores from 5, preventive measures knowledge 2.5 from 3, but participants shows inadequate knowledge regarding risk factors (5.5 scores from 9) and for symptoms and treatment (1.4 scores from 3) (table 2).

More than 80% of participants were correctly believed that osteoporosis is more common in women than men are and had correct impression about sport and exercise in prevention of osteoporosis. Most of participants (87.4%) know that sardines and other sea fish are rich in calcium.

An excessive dieting, presences of family history of osteoporosis and excessive intake of coffee and cola as a risk factors for osteoporosis were correctly recognized by 73.4%, 72% and 89.7% of participants respectively. while they did not have enough awareness toward the role of early menopause, small size built and smoking (42%, 41.1% and 43.9% respectively) and they had poor awareness 33.2% toward the role of high salt intake.

More than three quarter of respondents (77.6%) were aware that osteoporosis is a silent disease and 66.4% were believed that the disease can be treated.

More than half of the participants (54.7%) believed that hormonal therapy can prevent progression of osteoporosis after menopause.

Low back pain and loss of height and teeth was correctly recognized by 74.3% of studied women, and 82.7% were believed that the chance of subsequent fractures are high after menopause. Rich calcium diet is essential for prevention of osteoporosis was mentioned by most of studied women 91.6%.

Table 3 shows the detailed response to questionnaires. Regarding the total knowledge percent score of the participants was as follow: 11.68% achieved a percent score ranging from 25% to less than 50%, 44.85% achieved a percent score ranging from 5o% to less than 75% and 42.99 % of them obtained a score of 75% or higher, so the overall knowledge of health workers female was as following good in about 43%, moderate in about 45% and poor in about 12% (Table 4).

Table 1:The effect of studied variables on the FOOQ score of studied women

Studied variables	FOOQ total score mean ±SD	Test of significant
.Marital status (n=214): Married n=101 (47.2%) Widows n=5(2.3%) Single n=101(47.2%) Divorced n=7 (3.3%)	 13.9 ±2.80 11.2± 3.42 11.57 ±4.07 11.57 ±4.07	 (F) 0.018 (t) 1.524 (p) 0.129
Age group less than 40 n= 195(91.12%) Age group more than 40 n=19 (8.7%)	13.47 13.47	(F) 0.566 (t)0.003 (p)0.998
Menopause (n=214): Premenopausal n=212 (91.1%) Post menopausal n=2 (0.9%)	 13.47 ± 2.966 13.5 ± 0.707	 (F)2.293 (t)0.013 (p)0.989
Educational Level (n=214) Secondary school n=59 (27.6%) Institute (Diploma) n=45(21%) Higher education (university) n=110 (51.4%)	 13.38 ±3.27 12.87 ±2.86 13.76 ±2.78	 (F)0.578 (t)0.851 (p)3.97 (F)4.433 (t)0.781 (p)0.436
Professional status (n=214): Medical (doctors) n=57 (26.6%) Nurse n=91(42%) Laboratory workers n=52 (24.3%) Administration workers n=14 (6.5%)	 14.68±2.16 13.11±3.34 12.98±2.63 12.71±3.045	 (F)8.508 (t)3.168 *(p)0.002 (F)1.467 (t)0.239 (p)0.811 (F)0.024 (t)1.822 (p)0.070
Duration of work (n=214): Below 5 years n=132 (61.7%) 5-9 years n=60 (28%) 10-14 years n=9 (4.2%) 15-20 years n=13 (6.1%)	 13.31±3.03 13.68±3.03 13.88±0.92 13.76±2.74	 (F)0.268 (t)0.515 (p)0.607
Consider the disease as serious (n=214): Yes n=151 (70.6%) No n=36 (16.8%) Don't know n=27 (12.6%)	 13.57±2.88 13.19±3.21 13.25±3.07	 (F)1.716 (t)0.698 (P)0.486
Mean total score ± SD	13.47±2.95	

***p = significant**

Table 2: Results summary of FOOQ-Total score and score in various subsection of knowledge

Maximum score	Mean score	SD	Range
Total 20	13.47	2.953	1-19
General knowledge 5	3.97	1.oo2	1-5
Risk factors 9	5.58	1.592	0-9
Symptoms and treatment 3	1.43	0.841	0-3
Prevention and consequences 3	2.49	0.792	0-3

Table 3: Women response to the Fact On Osteoporosis Quiz (FOOQ)

Questions	Answer for studied women n=214%		
	Correct answer	Right	Wrong
1-Osteoporosis is characterized by fragile bones.	True	158(73.8%)	56(26.2%)
2-Our bones are strongest between the age 20-40 years.	True	157(73.4%)	57(26.6%)
3-Osteoporosis is more common in men than women	False	176(82.2%)	38(17.8%)
4-Physicial activity increase the risk of osteoporosis.	False	172 (80.4%)	42(19.6%)
5-Sardinesare rich in calcium and vitamin D .	True	187(87.4%)	27(12.6%)
6-An early menopause is not a risk factor for osteoporosis.	False	90(42%)	124(57.9%)
7-Excessive dieting is a risk factor for osteoporosis.	True	157(73.4%)	57(26.6%)
8-Lowe weight women have osteoporosis more than heavy women.	True	88 (41.1%)	126(58.9%)
9-Chance of developing osteoporosis is high in presences of a positive family history of osteoporosis.	True	154 (72%)	60(28%)
10-Smoking doesn't increase the risk of osteoporosis.	False	94(43.9%)	120(56.1%)
11-High caffeine and soft drink (coffee and cola) with low calcium (dairy products) increase the risk of osteoporosis.	True	192(89.7%)	22(10.3%)
12-Sun light exposure is a risk factor for osteoporosis.	False	170(79.4%)	44(20.6%)
13-Some medications maybe a risk factor for osteoporosis.	True	178(83.2%)	36(16.8%)
14-Asalty diet is a risk factor for osteoporosis.	True	71(33.2%)	183(66.8%)
15-Osteoporosis had no symptoms especially during the early stage .	True	48(22.4%)	166(77.6%)
16-Osteoporosis cannot be treated after it develops.	False	142(66.4%)	72(33.6%)
17-Hormone replacing therapy prevent further bone loss at any age after menopause.	True	117(54.7%)	97(45.3%)
18-Low back pain ,loss of height and loss of teeth are complications of osteoporosis.	True	159(74.3%)	55(25.7%)
19-Without preventive measures 20% of old women will have fractures due to osteoporosis.	True	177(82.7%)	37(17.3%)
20-Acalicum rich diet is essential for prevention of osteoporosis.	True	196(91.6%)	18(8.4%)

Table 4: Distribution of studied women (n=214) regarding their percent total knowledge score of FOOQ

Percent total knowledge score	Studied women n =214	n %
0 -	1	(0.46)
25-	25	(11.68)
50-	96	(44.85)
75≤100%	92	(42.99)

Discussion:

Osteoporosis is a substantial health problem, the corn stone of prevention of it is to improve knowledge and awareness among health professionals [25].

Questionnaires has been shown to be of simplest and cost effective mean of collecting data [26].

Although there were many studies describe osteoporosis knowledge in population, only scarce data addressed osteoporosis knowledge among health professionals[26,27].

The mean osteoporosis knowledge score of health workers in general in this study was 13.47 and for nurses was 13.11 , this result was almost identical to that of Hannon C & Murphy K. whose study of a sample for nurses and midwives in northwest Ireland showed a mean score of 13.86 [28]. Also when we compare our finding with results of other studies that have also used health workers as a sample for research, they seem to be close to them as in case of Zhang et al. in Singapore for nurses in general hospital [23] ,Dwidmu the k. et al for nursing staff in tertiary care hospital in India[20]and Park C-H et al. for nurses in Korea[27], where the results of the mean score as follows : 14.55, 14.35 and 12.7 respectively.

Our group under this study obtained higher degree of knowledge on osteoporosis (about 88% of the groups expressed good-moderate knowledge) in comparing with other studies conducted to determine the degree of knowledge for osteoporosis among women in health field[29,30,31].

Although many participants answered correctly the questions about osteoporosis, most responders didn't correctly answer five items which were statements about the effect on early menopause, low weight, smoking and salty diet as a risk factors for osteoporosis (questions 6,8,10 and14), also they had a large gap in knowledge that assess the symptoms of osteoporosis (question 15), hence on planning health educational program for osteoporosis the educational curriculum should emphasize on preventive measures, the different risk factors and symptoms of osteoporosis .

Physical activity as one of preventive measures against osteoporosis [31, 33], was identified by 80.4% of our participant, and this result was close to the results of studies conducted in India & Singapore [20, 23].

The role of hormonal replacing therapy in slow down bone loss after menopause was correctly identified by 54.7% as what was been reported by Zhang et al. (51.8%)[23], although other studies recorded a higher percentage of correct answer among health professionals belong to this item of FOOQ[20,32], the promotion of HRT for prevention of osteoporosis did not appear to be a high priority and there is a myth in our society regarding the risk of developing malignancy with hormonal therapy so educational programs should emphasis on the fact that HRT have a protective effect on bone density [33,34] .

In this study there was no significant association between age groups, length of experience, marital status and level of education in the degree of osteoporosis knowledge among various subgroups of health workers in agreement with Alghamidi M. et al. study in Saudi Arabia [32],although several studies were demonstrated a significant invers relation [35,36], this discrepancy is likely attributed to our small sample ,methodology but could also be linked to the heterogeneity of our study population .

The degree of knowledge among the different health professional's subgroups showed significant differences between doctors and other subgroups. Our result was disagreed with Alghamidi M. et. al study [32]. but agree with Perezs-Edo L et. al study [37], our result was explained by educational variation as result of deference in curriculum of medical and other health professionals' schools.

Conclusion & Recommendation

Although these preliminary findings would have to be validated in a large studies, they still carry serious implications since they suggest that knowledge about osteoporosis in general among health workers may lacking on several fronts such as in a risk factors, prevention and treatment that need to be addressed by adopting educational programs for health care provider to robust patient care and decrease disease burden ,especially nursing schools, to avoid knowledge gaps about this disease .

Study Limitation:

The present study was limited by selecting health workers in hospital only without inclusion of female health workers in primary health centers, as those are more contact with peoples, also there was some other risk factors for osteoporosis not mentioned to assess the knowledge of studied sample.

Acknowledgment:

We would like to thank all the health professionals who participated in the survey, Mr. Ahmed Miklif for collecting data, Mr. Foud Kames in Medical Statistics Department of Al-Fallujah Teaching Hospital for analysis of data and Ms. Basma Abd-Alsamea for her efforts in accomplishing this research.

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