

Family Physicians and Osteoporosis in Babylon Governorate

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ABSTRACT

Background: Osteoporosis is a metabolic bone illness that occurs in males and females and is widely disturbed around the world. Research show that females are more affected after menopause than males due to decreased estrogen secretion. The aim of this research is to evaluate the knowledge, attitude, and practice of family physicians concerning osteoporosis.

Patients and Methods: A cross-sectional study started from May to July 2020 in Babylon region. Almost all family physicians work in rural and urban areas in Babylon governorate have been included in the current study. A self-administered questionnaire was collected after taking verbal consent from all participants, with no exclusion criteria. The first part focused on demographic and specialized practice information data, while the second part contained a Knowledge, Attitude, and Practices (KAP) survey.

Results: Out of 97 family physicians, 59% scored moderate, 34% poor, and 6% good in awareness response. Regarding attitude response, 76% were good, 22% moderate, and 2% poor. In practice response, 53% were moderate, 33% good, and 13% poor. There was a significant association between place of work and attitude, source of experience and practice, practice and osteoporosis-training course, practice and use of guidelines, and the years of work and practice.

Conclusions: Most family physicians in Babylon province had moderate awareness, good attitude, and moderate practice towards osteoporosis. Family doctors working in hospitals had poor attitude towards osteoporosis. Therefore, all family doctors can benefit from training courses, especially family doctors who work in a hospital. Further, the current osteoporosis guidelines must be revised for any mistakes.

Keywords: Knowledge, Attitude, Practice, Family Physicians, Osteoporosis, Babylon City.

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INTRODUCTION

Osteoporosis is a metabolic bone illness that occurs in males and females and is widely disturbed around the world. Research shows that females are more affected after menopause than males due to decreased estrogen secretion.¹ According to the World Health Organization (WHO), around 9 million bone fractures occur due to osteoporosis as the bone mineral density decreases, leading to bone brittleness and increased risk of fractures.^{2,3} “Osteoporosis is defined, according to the WHO, as a bone mineral density (BMD) of 2.5 standard deviations or more below the peak bone mass as measured by dual-energy X-ray absorptiometry.”³ In addition, it is considered a debilitating disease that could have adverse life effects on patients. It also leads to psychological problems such as depression and social separation, as well as issues such as pain, costly rehabilitation, and premature death.⁴ Hip fracture is the most severe result of osteoporosis and is associated with high mortality. Up to 50% of patients experience permanently reduced movement; therefore, the primary goal of the intervention is to prevent fractures.⁵ Postmenopausal lowering of BMD and increase in bone fragility, which occur as outcomes of old age and menopause, are the main dangers in osteoporotic variations that cause bone fracture. In addition, decreased body mass index (BMI), low calcium intake, decreased physical movement, and smoking cigarettes can affect BMD, leading to osteoporosis.⁶ The effect of gynecologic history (parity, lactation, oral contraceptive use, and age of menarche) on BMD is indeterminate. Also, there are other

risk factors that can lead to osteoporosis like a parental history of hip fracture, cystic fibrosis, endocrine disorders (e.g., hyperparathyroidism, diabetes mellitus), gastrointestinal disorders (e.g., celiac disease, cirrhosis), hematologic disorders, and cancers.⁶ Calcium/vitamin D supplementation has been used to prevent osteoporosis and subsequent fractures. Currently, studies show that calcium supplementation may be harmful, so some patients and health care providers are unwilling to use calcium supplements.⁷ The diagnosing of osteoporosis and evaluating the danger of bone fracture is done through a DEXA scan, which assesses the BMD at the spine and hip.⁸ The aim of this research is to thus evaluate the knowledge, attitude, and practice of family physicians concerning osteoporosis.

MATERIALS AND METHODS

A cross-sectional study was conducted from May to July 2020 in Babylon region. Almost all family physicians working in rural and urban areas in Babylon governorate were included in the current study. After verbal consent, a self-administered questionnaire was distributed among all the identified participants, with no exclusion criteria. The first part of the questionnaire focused on self-reported data, demographic, and specialized practice information. The second part contained KAP questions. The awareness was assessed from 15 questions that were scored using a 3-point scale (2 = accurate; 1 = don't know; 0 = inappropriate). The sum of the scores was used as the awareness score, and the entire score fluctuated between 0 and

30. Attitude questions (3 items) were categorized from 1–5 Likert scale (1 = strongly disagree; 5 = strongly agree). Members' scores for each question fluctuated from 1–5, and the entire attitudes score fluctuated between 3 and 15. The six practice questions were about the referral and follow-up of patients; two responses were likely (0 = improper, 1 = accurate). The total practice score ranged from 0–6. The KAP scores were 80–100% of all accurate replies considered: good awareness, positive attitude, and good practice. A score of 60–79% put a scorer in a moderate level, and a poor level was for respondents with a score <60% of the entire accurate responses".⁸⁻¹⁰ The ethical approval was taken via a verbal agreement by each patient before starting the study, and a complete explanation was provided about the nature and target of this study. The study was approved by the Research Ethics Committee, College of Medicine Research, University of Babylon (in No. 135/20-5-2020). The **Statistical analysis** was done using Statistics Package for the Social Sciences (SPSS), version 22; frequency and percentage were used for categorical data; and mean and Standard Deviation (SD) were used for continuous data. A chi-square test was used to assess the association between categorical variables. A p-value less or equal to 0.05 was considered significant.

RESULTS

A cross-sectional study was conducted on 97 family physicians. The sociodemographic data was arranged as follows: females' gender represented 90.60%, academic

achievement (bachelor 41.60%), place of work (PHC 82.30%), the PHC location (urban 81.20%), source of practice (governorate health foundation 59.4%), doctors' exposure to training on osteoporosis (no training course 84.40%), family doctors who used guidelines when treating patients (54.20%), and of family doctors using internet access at work as source of information about osteoporosis (45.80%), as shown in (Table 1).

In the current study, there is no significant relationship between sociodemographic variables; (gender, place of work, site of PHC, source of experience, Osteoporosis training course, Use of guidelines, Source of information) and awareness of doctors toward osteoporosis, as shown in (Table 2).

The current study has a significant relationship between the place of work and attitude of family doctors; 58.8% of the family doctors who work in the hospital have a good level of attitude. Moreover, 79.9% of the family doctors those who work in the PHC have a good level of attitude (Table 3). In the current study, there is a significant association between the quality of practice of family doctors and place of PHC; 78% of the family doctors in rural area have a good level of practice. Further, there is a significant association between the source of experience of family doctors and their practice; 52.6% of the family doctors have a good level of experience from both the public institute and clinic. There is a significant association between practices of family doctors as they use guidelines of osteoporosis; 63.5% of the family physicians used osteoporosis

guidelines and had good practice. In the current study, there is a significant association between practice of family doctors and attending an osteoporosis training course; 60% of the family physicians who have completed an osteoporosis training

course have good practice. Moreover, there is a significant association between the years of experience and practice of family doctors; 41% of the family doctors were experienced six years and more, as show in (Table 4).

Table 1: Demographic Data.

Variables		Frequency	Percentage
Gender	Female	87	90.60
	Male	9	9.40
Academic achievement	Board	16	16.70
	Diploma	40	41.70
	Bachelor	40	41.60
Place of work	Hospital	17	17.70
	PHC	79	82.30
PHC location	Rural	18	18.80
	Urban	78	81.20
Source of your practical experience	Both	38	39.60
	Clinic	1	1.00
	Public	57	59.40
Osteoporosis training course	No	81	84.40
	Yes	15	15.60
Use of guidelines when treating the patients?	No	44	45.80
	Yes	52	54.20
Source of information about osteoporosis?	From higher education study	38	39.60
	Internet access at work	44	45.80
	Osteoporosis national guideline availability	14	14.60
Years of experience	Five years and less	57	59.40
	6–10 years	36	37.50
	More than ten years	3	3.10

PHC = primary health care.

Table 2: Association between sociodemographic variables and awareness of doctors toward osteoporosis.

Variables		Awareness			P-Value
		Poor No. (%)	moderate No. (%)	Good No. (%)	
Gender	Female	30 (34.3)	53 (60.9)	4 (4.6)	0.10
	Male	3 (33.3)	4 (44.4)	2 (22.3)	
Academic achievement	Board	1 (6.3)	13 (81.3)	2 (12.4)	0.088
	Diploma	15 (37.5)	22 (55)	3 (7.5)	
	Bachelor	17 (42.5)	22 (55)	1 (2.5)	
Place of work	Hospital	6 (35.5)	10 (58.8)	1 (5.9)	0.90
	PHC	27 (34.2)	47 (59.5)	5 (6.3)	
Site of PHC	Rural	5 (27.8)	12 (66.7)	1 (5.6)	0.80
	Urban	28 (35.9)	45 (57.7)	5 (6.4)	
Source of experience	Public Institute	24 (42.1)	31 (54.4)	2 (3.5)	0.30
	Clinic	0 (0)	1 (100)	0 (0)	
	Both	9 (23.7)	25 (65.8)	4 (10.5)	
Osteoporosis training course	Yes	4 (26.7)	9 (60)	2 (13.3)	0.40
	No	29 (35.8)	48 (59.3)	4 (4.9)	
Use of guidelines	Yes	18 (34.6)	30 (57.7)	4 (7.7)	0.80
	No	15 (34.1)	27 (61.4)	2 (4.5)	
Source of information's	From higher education study	9 (23.7)	26 (68.4)	3 (7.9)	0.30
	Internet access at work	17 (38.6)	24 (54.5)	3 (6.8)	
	Osteoporosis national guideline availability	7 (50)	7 (50)	0 (0)	
Years of experience	Five years and less	21 (36.8)	33 (57.9)	3 (5.3)	0.35
	Six years and more	12 (31.6)	24 (63.1)	2 (5.3)	

p-value less than 0.05 (significant). PHC = primary health care.

Table 3: Association between sociodemographic variables and attitude of doctors toward osteoporosis.

Variables		Attitude			P_ Value
		Poor	Moderate	Good	
Gender	Male	0 (0)	1 (11.1)	8 (88.9)	0.60
	Female	2 (2.3)	20 (23)	65 (74.7)	
Academic achievement	Board	0 (0)	0 (0)	16 (100)	0.062
	Diploma	0 (0)	12 (30)	28 (70)	
	Bachelor	2 (5)	9 (22.5)	29 (72.5)	
Place of work	Hospital	2 (11.8)	5 (29.4)	10 (58.8)	0.005
	PHC	0 (0)	16 (20.3)	63 (79.7)	
Site of work	Rural	0 (0)	3 (16.7)	15 (83.3)	0.64
	Urban	2 (2.6)	18 (23.1)	58 (74.4)	
Source of experience	public	2 (3.5)	17 (29.8)	38 (66.7)	0.13
	Clinic	0 (0)	0 (0)	1 (100)	
	Both	0 (0)	4 (10.5)	34 (89.5)	
Osteoporosis training course	Yes	2 (2.5)	19 (23.5)	60 (86.7)	0.54
	No	0 (0)	2 (13.3)	13 (86.7)	
Use of guidelines	Yes	2 (3.8)	11 (21.2)	39 (75)	0.42
	No	0 (0)	10 (22.7)	34 (77.3)	
Source of information's	From higher education study	1 (2.6)	8 (21.1)	29 (76.3)	0.29
	Internet access at work	0 (0)	12 (27.3)	32 (72.7)	
	Osteoporosis national guideline availability	1 (7.1)	1 (7.1)	12 (85.8)	
Years of experience	Five years and less	2 (3.5)	13 (22.8)	42 (73.7)	0.67
	Six years and more	0 (0)	8 (11.1)	31 (88.9)	

p-value less than 0.05 (significant). PHC = primary health care.

Table 4: Association between sociodemographic variables and practice of doctors toward osteoporosis.

Variables		Practice			Value
		Poor	Moderate	Good	
Gender	Female	12 (13.8)	47 (54)	28 (32.2)	0.760
	Male	1 (11.2)	4 (44.4)	4 (44.4)	
Academic achievement	Board	3 (18.8)	7 (43.8)	6 (37.4)	0.080
	Diploma	4 (10)	28 (70)	8 (20)	
Place of work	Bachelor	6 (15)	16 (40)	18 (45)	0.080
	Hospital	4 (23.5)	11 (64.7)	2 (11.8)	
Site of work	PHC	9 (11.4)	40 (50.6)	30 (38)	0.0001
	Rural	0 (0)	4 (22.2)	14 (78.8)	
Source of experience	Urban	13 (16.7)	47 (60.3)	18 (23)	0.02
	public	10 (17.5)	35 (61.4)	12 (21.1)	
Use of guidelines	Clinic	0 (0)	1 (100)	0 (0)	0.006
	Both	3 (7.9)	15 (39.5)	20 (52.6)	
Osteoporosis training course	Yes	9 (17.3)	33 (63.5)	10 (19.2)	0.05
	No	4 (9.1)	18 (40.9)	22 (50)	
Source of information's	Yes	1 (6.7)	5 (33.3)	9 (60)	0.08
	No	12 (14.8)	46 (56.8)	23 (28.4)	
Years of experience	From higher education study	6 (15.8)	23 (60.5)	9 (23.7)	0.04
	Internet access at work	4 (9.1)	19 (43.2)	21 (47.7)	
Osteoporosis national guideline availability	Osteoporosis national guideline availability	3 (21.4)	9 (64.3)	2 (14.3)	0.04
	Five years and less	8 (14)	33 (57.9)	16 (28.1)	
	Six years and more	5 (12.8)	18 (46.2)	16 (41)	

p-value less than 0.05 (significant).

PHC = primary health care.

DISCUSSION

Osteoporosis, a preventable bone disorder, is considered one of the main causes of disability and death in geriatric patients.¹¹ The Primary Health Care (PHC) centers represent the corner stone for the diagnosis and management of osteoporosis.¹² In the current study, 59% of the family doctors have moderate awareness towards diagnosis and management osteoporosis, while 6% have good awareness. These results agreed with Mahdaviyazad et al. who show that 72% of family doctors have moderate level of awareness and 14% of them have good level of awareness,⁸ in contrast with Alshareef et al.,¹³ who found that 74% of family doctors have a good level of awareness and 26% of them have poor level of awareness towards

diagnosis and management of osteoporosis. A study conducted in Pakistan agrees with the current study and states that only 8% of doctors have good awareness and 49% of doctors have poor awareness towards osteoporosis.¹⁴ In the current study, 76% of the family doctors have a good attitude, 22% of them have a moderate attitude, and just 2% of them have a poor attitude. This result agrees with an Iranian study stating that 64% of family doctors have a good attitude towards osteoporosis.⁸ Another study states a high to moderate/acceptable level of attitude of family doctors towards osteoporosis.¹⁵ Moreover, in the present study, the practice of family doctors towards osteoporosis shows that 33% of them have good practice and 13% have poor practice. Mahdaviyazad et al. agrees

with these results, stating that 38% of the studied doctors have good practice.⁸ However, Elnaem et al. disagrees with this results, showing that the total mean score for the practice of the participants indicates poor practice regarding prevention of osteoporosis.¹⁵ In the current study, there is no significant relationship between gender, place of work, site of PHC, source of experience, osteoporosis training course, use of guidelines, source of information, years of practice, and awareness of family physicians towards osteoporosis. A study by Chenot et al. agrees with this and shows no significant association between gender, years of practice, and osteoporosis training course.¹² Another study agrees and shows no significant association between gender of family doctors and awareness towards osteoporosis.⁸ On the other hand, some studies disagree with the current study and indicate that female family doctors showed better knowledge towards osteoporosis than males.^{12,15,16} In the current study, no significant association was found between place of health institute and awareness of family doctors. Saeedi et al. disagree with this result and shows high responsiveness among doctors of PHC between 36–92%.¹¹ These results also agree with a survey in Abha, which shows the same outcomes: the level of awareness of PHC doctors is 67%.¹⁷ In the current study, there is a significant relationship between the place of work (health institute) and attitude of family physicians towards osteoporosis, with most doctors working in a hospital showing poor attitude, compared to those working in PHC,

who show good attitude. This explains that family physician are not well trained on osteoporosis guidelines, which agrees with another study in which PHC participants' attitude towards osteoporosis avoidance and managing was high. This agrees with a German study, which states that only 11 % of family doctors did not consider osteoporosis problematic.¹² In the present study, there is a significant relationship between the source of experience and practice that family doctors have, with most of them having poor level of experience from work, which agrees with other studies stating there is a significant association between practice of family doctors for osteoporosis management and the source of their practice.⁸ In the current study, there is a significant association between the practice of family doctors and osteoporosis training course, with most of them having poor level of practice due to non- completion of osteoporosis training course or because these courses were not adequate scientifically. Other studies agree with the present study in that there is no significant association between the practice of family doctors and the training course.⁸ Our study shows a significant association between the years of experience and practice of family doctors, with most of them showing moderate level of practice with five years and less. This result is similar to Elnaem et al. who state a significant association between family doctors' practice and experience years.¹⁵ Regarding the use of guidelines by the family doctors, most of them have moderate practice and use guidelines on osteoporosis well. This

could mean that there might be some problems in these guidelines.

CONCLUSIONS

Most family physicians in Babylon province have moderate awareness, good attitude, and moderate practice towards osteoporosis. The family doctors who work in the hospital have poor attitude towards osteoporosis. Therefore, all family doctors need training courses, especially those who work in the hospital. Also, there is a need to revise the current osteoporosis guidelines for any mistakes.

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