Awareness and practice concerning osteoporosis and its prevention among a sample of Kurdish women

Bakhtyar Othman Omer[*]**, Hamdia Mirkhan Ahmad**[**]**, Dara Abdullah Al-Banna**[***]**, Nazar Ali Sherin**[****]

[*] Department of Nursing, College of Nursing, Hawler Medical University, Erbil-Iraq
[**] Department of Midwifery, College of Nursing, Hawler Medical University, Erbil-Iraq
[***] Department of Nursing, College of Nursing, Hawler Medical University, Erbil-Iraq
[****] Department of Nursing, College of Nursing, Hawler Medical University, Erbil-Iraq

Abstract- **Background and objective**

Osteoporosis (OP) is a chronic progressive disease, 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. This study aimed to assess the knowledge of women regarding risk factors and prevention of osteoporosis, to find out the women's practice for osteoporosis prevention and determine the association between their level of knowledge and practice with their Sociodemographic characteristics.

Methods: A cross sectional study was conducted on 220 women at different age group who lived in Erbil cit/ Iraq and attending to Hawler Teaching Hospital for seeking treatment for their complains. Data were collected through interview with them. Frequency, percentage, and chi squire test were used for analyzing and interpreting the data.

Results: The majority of samples were between age group 20-34 years. They had fair to poor knowledge regarding risk factors and prevention methods for osteoporosis and mass media was the main source of information regarding that (85.4 %). Almost half of the study sample (42.7%) had poor practice for prevention from osteoporosis. There was statistically significantly association between age, marital status and educational level with the level of knowledge. Educational level of the study sample had significant association with preventive practice of women regarding osteoporosis.

Conclusion: The Kurdish women have not enough and correct knowledge regarding osteoporosis and its prevention as well as have poor practice for its prevention. Further studies are needed to find out the barriers of preventive osteoporosis practice among Kurdish women.

Index Terms- Osteoporosis; awareness, women, practice

I. INTRODUCTION

Osteoporosis is one of the major quality of life threatening diseases for all women, regardless of race or ethnicity, and is a major public health problem. Osteoporosis has been defined by the WHO[1] as "a disease characterized by low bone mass and bone matrix deterioration leading to increased fragility and risk of fracture". It can be claimed that osteoporosis is called the 'silent disease' because it is an asymptomatic disease and people who have had osteoporosis, remain undiagnosed until fracture occurs. [2-, 3] Osteoporosis is a global health problem which influences many people all over the world. Moreover, it has several complications; one of the most common complications is bone fracture.[4-5] In addition to this, osteoporosis is the main cause of mortality, disability, and impaired quality of life among population especially older people. It also causes of premature death. Similarly, it has a major effect and economic burden on health service; preventing and treating osteoporosis require many billions of dollars annually.[6] It has a substantial causes and harmful effect on individuals physically, psychologically, and quality of life and also health service demand.[7]

Women are more susceptible to osteoporosis than men globally because of hormonal change in women during the menopause. It is argued that less sex hormone in postmenopausal women such as estrogen, is the main cause of osteoporosis. The research showed that the majority of women who suffered from osteoporosis and osteoporotic fracture which were 50% and less in men which were 30% over 50 years of age.[8] Approximately one in every three women and one in every five men had osteoporotic fracture in their life span.[9]

In Iraq, Osteoporosis is recognized as a major health problem and the government has approved guidelines and developed health professional training .There is no data on incidence of osteoporotic fracture but the physicians say that 20 % of vertebral facture, and 40 % of other fractures are managed and treated by doctors. It is expected the cost that expended for treating osteoporotic fracture directly by hospital are 1000-3000 USD while indirect hospital cost are nearly about 500- 1500 USD per hip fracture. The incidence of osteoporosis among population especially women increased from past century, despite of having a high level of sunshine. It may be argued that this is because Iraq does not have enough health resources that provide women and men's information and knowledge about preventing osteoporosis. Moreover, the majority of time, women stay indoors especially elderly women.[10] Therefore, this study aims to assess the knowledge of women regarding risk factors and prevention approaches of osteoporosis and to determine the women's practice for osteoporosis prevention, as well as to find out the association between women's demographic characteristics and their knowledge and practice regarding osteoporosis.

II. METHODS

This cross sectional study was conducted between October 1st, 2015 until May 1st, 2016 in the Hawler Teaching Hospitals in Erbil city of Kurdistan region/ Iraq on 220 women who visited hospital because of different health problem and seeking treatment. Formal administrative approval was obtained from the Scientific and Ethical Committee at the College of Nursing/

Hawler Medical University. Data were collected via face to face interview with women. A questionnaire was designated for the purpose of the study which included the following questions: demographic characteristic of the sample study, women's knowledge and preventive practice about osteoporosis. A convenient sampling was used to select the study sample and the sample selection was according to these inclusion criteria such as adult women who were aged 18 years and above and women who accepted to participate in the study. Verbal consent was taken and the objectives of the study were explained. Researchers were explained that participation in the study was completely voluntary and that the decision to participate or not participate in the study would not have any effect on their job. The answers and information raised from the study were confidentially kept and used only for the purpose of this study. It was provided full opportunity for participant to ask any questions regarding the research questions. Participants had right to withdraw from study without given any reason. Data were entered into the statistical Package for Social Science (SPSS, version 18).frequency, percentage, and chi-square test was used for analyzing and interpreting the data. A P value of <0.05 was considered as statistically significant.

III. RESULTS

Out of 220 participants, 54.1% of participants were aged between 20-34 years, and 61.8 % were married, 32.3 % had a baccalaureate degree, and 54.1% were living outside the Erbil city, in rular area. The majority of the study sample had no knowledge regarding following risk factors of osteoporosis: low body weight (85.9%), corticosteroid therapy (79.5%), drinking alcohol (79.1%), smoking (78.2%), hormonal changes and menopause (76.4%), family history (73.2%). More than half of the study sample had no knowledge regarding other risk factors. The highest percentages of women mentioned that calcium and vitamin D (58.6%), regular exercise (51.8%), fruit and vegetable (40.5%) and sun exposure (48.6%) were the main factor for preventing osteoporosis. However, the highest percentages of women reported that avoiding smoking (78.2%) and avoiding drinking alcohol (80.9%) were not the factor that preventing osteoporosis. Media (51.8%) was the most popular source for getting information about osteoporosis. The lowest percentages (11.8 %) of women took information from friends (Table 1). The highest percentage of the study's sample did not do exercise (62.3%), taking calcium and vitamin D (64.5%), drinking milk (47.7%), and exposure to sun (47.3%) for prevention of osteoporosis (Table 2).

The overall knowledge of women about risk factors of osteoporosis was as following good (14.5%), fair (52.7%) and poor (32.7%). Only 10% of the study sample had good overall prevention practice regarding osteoporosis (Table 3). There was a highly statistically significant association between age group, marital status, and educational levels with overall knowledge and awareness of women regarding osteoporosis. However, there was not statistically significant association between place of residence with overall knowledge and awareness of women about osteoporosis (Table 4). There was not statistically signification association between age, marital status, and place of residence with overall preventive practice of women about osteoporosis. However, there was a highly statistically significant association between level of education and overall preventive practice of women towards osteoporosis (Table 5).

Table 1 Women's knowledge about risk factors and prevention for osteoporosis and information resources

Women's knowledge regarding risk factors	Yes		No	
	F	%	F	%
Aging	88	40.0	132	60.0
being female	74	33.6	146	66.4
low body weight	31	14.1	189	85.9
hormonal change	52	23.6	168	76.4
Menopause	52	23.6	168	76.4
Smoking	48	21.8	172	78.2
drinking alcohol	46	20.9	174	79.1
Corticosteroid therapy	45	20.5	175	79.5
lack of exercise	90	40.9	129	58.6
lack of sun exposure	104	47.3	116	52.7
calcium and vitamin deficiency	105	47.7	115	52.3
family history	59	26.8	161	73.2
Women's knowledge regarding prevention practice				
Taking calcium and vitamin D	129	58.6	91	41.4
Regular exercise	114	51.8	106	48.2
Eating fruit and vegetable	89	40.5	131	59.5
Avoid smoking	48	21.8	172	78.2
Avoid drinking alcohol	42	19.1	178	80.9
Sun exposure	107	48.6	113	51.4
Information sources	Yes		No	
	F	%	F	%
Friends and relatives	26	11.8	194	88.2
Health staff	66	30.0	154	70.0
Media	114	51.8	106	48.2
Others (internet and education)	61	27.7	159	72.3

Table- 2- Women's practice regarding preventing osteoporosis

Items	Done		Not-done	
	F	%	F	%
Doing exercise	83	37.7	137	62.3
Drinking milk	115	52.3	105	47.7
Sun exposure	116	52.7	104	47.3
Taking Calcium and Vitamin D	78	35.5	142	64.5
No Smoking	216	98.2	4	1.8
No drinking alcohol	1	0.5	219	99.5

Table 3 Women's overall knowledge and preventive practice for osteoporosis

Overall Knowledge and preventive practice	F	%
Good	32	14.5
Fair	116	52.7
Poor	72	32.7
Good	22	10
Fair	104	47.3
Poor	94	42.7
Total	**220**	**100**

Table 4 Association between Sociodemographic data and Overall Women's Knowledge regarding Osteoporosis:

Overall Knowledge / Sociodemographic data		Good		Fair		Poor		P-value
		F	%	F	%	F	%	
Age group/years	20-34	19	8.6	69	31.4	31	14.1	**0.003*** **HS**
	35-49	10	4.5	33	15.0	23	10.5	
	50-64	3	1.4	13	5.9	8	3.6	
	65-89	0	0.0	1	0.5	10	4.5	
Marital status	Single	15	6.8	44	20.0	12	5.5	**0.005*** **HS**
	Married	17	7.7	66	30.0	53	24.1	
	Widowed/divorced	0	0.0	6	2.7	7	3.2	
Educational level	Illiterate	4	1.8	19	8.6	32	14.5	**< 0.001*** **VHS**
	Read and write	2	0.9	12	5.5	4	1.8	
	Less than high school	2	0.9	19	8.6	18	8.2	
	High school	2	0.9	10	4.5	8	3.6	
	Diploma	3	1.4	13	5.9	1	0.5	
	Baccalaureate degree	19	8.6	43	19.5	9	4.1	
place of residence	Inside city	14	6.4	54	24.5	33	15.0	**0.961*** **NS**
	Outside city	18	8.2	62	28.2	39	17.7	

*fishers exact test

Table 5- Association between Sociodemographic characteristics and overall women's   preventive practice regarding osteoporosis

Overall Practice / Sociodemographic data		Good		Fair		Poor		P-value
		F	%	F	%	F	%	
Age group/years	20-34	13	5.9	56	25.5	50	22.7	**0.248*** **NS**
	35-49	7	3.2	34	15.5	25	11.4	
	50-64	2	0.9	12	5.5	10	4.5	
	65-89	0	0.0	2	0.9	9	4.1	
Marital status	Single	10	4.5	35	15.9	26	11.8	**0.419*** **NS**
	Married	12	5.5	63	28.6	61	27.7	
	Widowed/divorced	0	0.0	6	2.7	7	3.2	
Educational level	Illiterate	3	1.4	24	10.9	28	12.7	**0.002*** **HS**
	Read and write	4	1.8	8	3.6	6	2.7	
	Less than high school	1	0.5	14	6.4	24	10.9	
	High school	0	0.0	11	5.0	9	4.1	
	Diploma	5	2.3	11	5.0	1	0.5	
	Baccalaureate degree	9	4.1	36	16.4	26	11.8	

| Place of residence | Inside city | 12 | 5.5 | 51 | 23.2 | 38 | 17.3 | **0.331*** |
| | Outside city | 10 | 4.5 | 53 | 24.1 | 56 | 25.5 | **NS** |

*fishers exact test

IV. DISCUSSION

Because there is no cure for osteoporosis, primary prevention of the disease through increased awareness of risk factors and preventative behaviors is potentially important. Therefore, the study was aimed to determine women's awareness and practice regarding osteoporosis. However, our findings suggest that Kurdish women are not well versed in behaviors that would promote and maintain optimal bone mass, and consequently are not practicing lifestyle and dietary habits sufficient to decrease the risk of osteoporosis. The present study indicated that the majority of the participants had no enough and correct knowledge about low body weight, corticosteroid therapy, drinking alcohol, smoking, menopause, as risk factors of osteoporosis. The results of the present study are similar with the results of the study that carried out in Singapore and Greek, women had no knowledge regarding risk factors of osteoporosis.[11-12] However, these results are in disagreement with the study that done in Turkey as showed that the majority of Turkish women agreed that menopause is a risk factor for osteoporosis.[13] Previous studies in Pakistan have also shown the opposite results, which indicated women had good knowledge about the risk factors of osteoporosis.[14] The results of this study showed that the majority of women reported that calcium; vitamin D, regular exercise, fruit and vegetable, and sun exposure were the factors for osteoporosis prevention. These results consist with the results of previous study that carried out in Turkey; it showed the majority of Turkish women aware regarding the methods for preventing osteoporosis.[13]

The results of current study reported that the majority of sample did not perform physical exercise, exposure to sun, take vitamin D and calcium, drinking milk as preventive practice for osteoporosis. A similar result was found in a study from Sri Lanka it showed that practices towards preventing Osteoporosis were inadequate[15]. However, these results are in disagreement with previous study done in Egypt which indicated that majority of the studied sample mentioned exposure to sunlight and doing regular exercise as methods of the preventive measures from osteoporosis but taking calcium and vitamin D was not mentioned as a preventive measure from osteoporosis.[16]

The present study showed that the majority of women got information from media. These results are similar with the finding of the study in Singapore and Egypt reported that the main sources of information about osteoporosis were the mass media and friends.[11-17] However, opposite result was found from a study done in Pakistan.[14]

The results of the current study represented that there was a highly significant association between age group, marital status, and educational level with overall knowledge of women regarding osteoporosis. A similar finding was found in a study from El Salvador, a higher level of education was associated with more knowledge of osteoporosis.[18-19]

The results of this study showed that there was not a statistically signification association between age, marital status, religion, and place of residence with overall preventive practice of women about osteoporosis. However, there was a highly statistically significant association between level of education and overall preventive practice of women towards osteoporosis. So, education has a great effect on knowledge and doing practice regarding prevention for diseases such as osteoporosis.
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V. CONCLUSION

The Kurdish women have not enough and correct knowledge regarding osteoporosis and its prevention as well as have poor practice for its prevention. Improving the quality of health information provided through the mass media as well as motivating health care providers to play a role in providing information regarding osteoporosis is recommended**.** Further studies are needed to find out the barriers of preventive osteoporosis practice among Kurdish women.

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AUTHORS

First Author – Bakhtyar Othman Omer, baktiar1985@yahoo.com, Department of Nursing, College of Nursing, Hawler Medical University, Erbil-Iraq
Second Author – Hamdia Mirkhan Ahmad: hamdia75@gmail.com, Department of Nursing, College of Nursing, Hawler Medical University, Erbil-Iraq
Third Author – Dara Abdullah Al-Banna: Nazar992000@hotmail.com, Department of Nursing, College of Nursing, Hawler Medical University, Erbil-Iraq
Fourth Author – Nazar Ali Sherin: daraaq@yahoo.com, Department of Nursing, College of Nursing, Hawler Medical University, Erbil-Iraq