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A Survey of Osteoporosis Risk Factors and Practices Among Jordanian Women

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Abstract

The aim of this study was to explore osteoporosis (OP) risk factors among Jordanian women. Osteoporosis (OP) is a chronic complex health problem for millions of women worldwide, 80% of whom are postmenopausal women. Unless prevented or treated, this silent disease will continue to limit both the quantity and quality of life of many older women and significantly add to the health care cost for this group. A sample of Jordanian women in different settings in Jordan (N=192; mean age=43years). The study was descriptive and data were collected over a two month period in 2005 with the use of a self-administered questionnaires. : Although women reported having a diet high in calcium, and did not smoke. The majority (68%) did not exercise and consume a large amount of caffeine. There is an overwhelming need for more public education and for wider dissemination of information about OP prevention, and treatment with special attention in targeting younger women to improve women's health early on and halt the progression of this silent disease.

Keywords: Osteopporosis risk, Jordanian women, women's health

Introduction

Osteoporosis (OP) is a chronic complex health problem for millions of women worldwide, 80% of whom are postmenopausal women. As a woman ages and approaches middle adulthood, she experiences a variety of physiological and psychological changes that can ultimately affect her health and well being. Osteoporosis and related fractures are major cause of disability, institutionalization and death among aging women. Unless prevented or treated, this silent disease will continue to limit both the quantity and quality of life of many older women and significantly add to the health care cost for this group.

Background and Significance

Osteoporosis is a systemic disorder characterized by decreased bone mass and thinning of bone tissue leading to bone fragility and increased susceptibility to fractures of hip, spine, and wrist[1]. The Osteoporosis Society of Canada[2], reported that one in four postmenopausal Canadian women have OP. In Great Britain, it was estimated that 150.555 cases of OP/year that costs about 75 million/year for the resulting fractures of OP. In the United States it was reported that 7 to 8 million individuals already have the OP and 17 million more have low bone mass placing them at increased risk of OP and the fractures it causes[1]. However limited studies have been conducted in Jordan to estimate the prevalence of OP among Jordanian population.

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Jordan is a Middle Eastern Arab Country with a population of approximately 5.3 million people and is has one of the highest fertility rates in the region. It is estimated that 42% of population is under 15 years of age[3]. Forty-six percent of the women are age 15-44 years, and 3% are over the age of 65 years. Eighty two percent of the women are literate, 53% have 12 years of education, and 22% have more than 12 years of education[3].

Deeply rooted social, traditional and behavioral factors are apparent in the Jordanian society despite the technological advances in the country. For instances, women gain status and security by bearing many children[4]. Eighty percent of marriages in Jordan are arranged and approximately 51% are consanguineous[5]. In fact social, cultural and economic factors in Jordan have a substantial effect on the lives of women from infancy to old age, which may negatively impact women's health throughout their lives. In this sense, women's health in the period of menopause is considered to be an accumulation of all the physical and emotional experiences that women faces through their entire lives. For many women, their health has been affected by many factors such as environmental factors, extensive workload at their homes and outside, child bearing, inadequate diet and health care[6,7].

In Jordan, public attention to OP has been affected by several significant factors, such as, the modernization and national development over the past two decades; life style changes such as unhealthy eating pattern, increased stress and low activity, and increased rise in life expectancy[8,9]. The Jordanian health care expenditure has been mostly focused on acute care services. Recently the focus has shifted to services directed toward chronic illnesses such as osteoporosis. Osteoporosis and its related fractures are a major cause of disability and death for both men and women. It is estimated that 25% of women over the age of 60 would suffer an age-related fracture[10]. The National Osteoporosis Foundation reported that one in two American women 50 years and older will experience this type of fractures[11]. This is true for hip fracture among postmenopausal women, one in six will suffer a broken hip [12], one in five will die from related complication, and 33% to 50% of survivors will suffer loss and disability[13]. Many of these survivors will require long term institutional care[14].

Women should not view OP as an inevitable consequences of aging. Making the right life style and nutritional choices during their first three decades can mean stronger bones for a life time. Risk factors for OP includes estrogen deficiency as a result of early menopause; chronic use of certain drugs i.e. corticosteroids; calcium and vitamin D intake deficiency; excessive increase in protein intake; increased alcohol consumption; cigarette smoking; and prolonged immobility[15,16]. In Jordan, the increased sedentary life style, growth of smoking among Jordanian women, and poor diet suggest that the problem of OP is likely to escalate.

Since there is no cure for osteoporosis, medical cost is high[17]. Research has primarily focused on prevention and treatment measures among menopausal and postmenopausal women[18,19,20,21]. These measures are useless if women are not familiar with them and take appropriate step to prevent OP, or even make informed choices about the available treatment. Little is known about the general levels of knowledge regarding OP or associated preventive behaviors. Information is particularly scarce regarding pre and post menopausal women. Therefore, the purpose of this study was to explore the OP risk factors among Jordanian women. Research questions are: (1)What are OP risk

factors that Jordanian women face?; and (2) What osteoporosis prevention behaviors are done by Jordanian women?.

Methodology

Design and Sample

A descriptive cross sectional design with a sample of 200 Jordanian women from different settings in Jordan was used. A convenience non probability sampling snowballing technique was used to achieve the required sample size. Snowballing sampling is a technique for developing a research sample where existing study subjects recruits future subjects from among their acquaintances. Of the 200 questionnaires distributed, 192 were returned fully completed.

Instrument

A self-administered questionnaire was specifically designed for the purpose of the study. The questionnaire was reviewed for comprehensibility and acceptability by a panel of experts. The questionnaire assessed the following dimensions: demographic information i.e., age, marital status, education, income...etc; health problems; life style behaviors i.e., exercise, smoking; and OP factors i.e., diet, medication, hysterectomy, bone fracture, signs and symptoms.

Procedure

The principle investigators collected the data using an interview technique in which participants were asked to complete the study questionnaire. The participants were approached and informed about the purpose of the study before being asked to participant. The voluntary nature of their participation was emphasized and the steps that would be taken to ensure confidentiality and anonymity were detailed. Participants' consent was assured by their willingness to complete and return the questionnaires. The principle investigators explained the study purpose and data collection techniques to the participants. Data were collected over a two month period in the year 2005

Analysis

Statistical Package for the Social Sciences (SPSS) descriptors were used to analyze the data. Descriptive statistics provided information on participants characteristics, life style behaviors, and OP risk factors.

Results

Characteristics of the Sample

One hundred and ninety two women responded to the questionnaire yielding a 96% response rate. This high response rate may be attributed to the fact that the two researchers made direct and personal contact with the participants for the purpose of explaining the importance of this study and in fact inviting women to participate.

The sample (n=192) had a mean age of 43 years (range 18 to 78 years; SD= 11). Eighty one percent were married, and 58% had reached menopause, 44% had formal educational qualifications (23% Baccalaureate degree; 21% diploma), and 47% were employed and 49% were homemaker. The majority of the sample were middle income with a mean of 350 JD/month for the total family income (see Table 1).

Table 1

Sociodemographic Characteristics of the Sample (N= 192) Mean (SD)/ Percentages

Variable	Frequency	%	M(SD)
Age			43(11)
Marital Status			
Single	15	8	
Married	157	81	
Widowed	13	7	
Divorced	7	4	
Menopause	50	27	
Education Level			
Illiterate	41	21	
Less than high school	36	17	
High school	25	13	
Diploma	41	21	
Baccalaureate	44	23	
Graduate Education	5	3	
Religion			
Muslim	176	91	
Christian	16	8	
Place of Residence			
City	192	99	
Type of Residence			
Own Home	134	69	
Rent	56	29	
Other	2	1	
Family Income			
300 JD	21	11	
500 JD	29		

15	
600 JD	15
8	
Working Status	
Working	91
47	
Homemaker	101
53	

The majority of women (76%) reported a medical problem, with hypertension being the most common (23%) followed by diabetes mellitus (22%), and thyroid problem (21%) (see Table 2). Other problems included hypercholesteremia and asthma.

Table 2

Health Problems (N= 192)

Health Problem	Frequency	%
Diabetes Mellitus	45	23
Hypertension	42	22
High Cholesterol	14	7
Renal Disease	5	3
Heparin Use	19	10
Cortisone Use	10	5
Thyroid	41	21
Uterus Cancer	3	2
Breast Cancer	2	1

Risk Factors and Preventive Practices

The risk factors for women frequently reported were: family history of OP (12%); being sedentary (68%); being menopausal or postmenopausal (27%). The majority of participants did engage in risk behaviors (i.e., corticosteroids (5%); smoking (23%); excessive soda and caffeine consumption (72%; 58% respectively) (see Table 3 and Table 4). Seventy-nine percent of the participants reported proper

Table 3

Preventive Practices (N= 192)

Type of preventive Behavior	Frequency	%
High Calcium Foods	154	79
Calcium supplement	37	19
Regular Exercise	61	31
No Exercise	131	68
Caffeine Intake		
Coffee & Tea	112	58
Soda	139	72
Smoking		
Yes	45	23
No	145	74
Sun Exposure		
Continuous	27	14
Intermittent	143	73
No Exposure	22	11
Hormone Replacement Therapy Use		
Yes	52	27
No	140	72

diet high in calcium intake and 31% take calcium supplements. Eighty one percent had never fracture a bone (9% only had wrist fracture), 71% had never taken hormone replacement therapy. With respect to exercise, 68% did not perform any exercise. Of the 192 participants, 31% reported exercising regularly (walking).

Table 4

Osteoporosis Information

Variable	Frequency	%
Osteoporosis in Family		
Yes	23	12
No	167	86
Relative with Osteoporosis		
Mother Side	18	9
Father Side	21	11
Fracture		
Number of Fracture		
Once	31	16
More than once	5	3
Type of Fracture		
Hip	8	4
Wrist	17	9
Other	11	6

Discussion

Findings regarding inadequate preventive practices are a further cause for concern. The large percent (58%) consuming more than three cups of caffeinated drinks per day; (72%) soda drinks, strongly suggest the need to promote better nutritional practices among Jordanian women of all ages. There is need also to encourage more women to exercise also is suggested by the results of this study. A considerable portion of women did not exercise.

In terms of healthy behaviors, the majority of the sample reported having a diet high in calcium, and did not smoke. However, it was not clear whether these behaviors were done by the participants as means for preventing or avoiding the development of OP or for other reasons. In fact, it appears that there is a lack of intentional behaviors carried out by women to improve or maintain their health. This result may be attributed to the fact that the women usually combine work with the responsibility of a family; as a result of this women may not view their own health as a priority.

In conclusion, although OP is recognized as a major public health problem, the focus of attention has remained on medical interventions at the point of fracture rather than on promotion of early preventive measures. There is an urgent need to intensify public education and other health promotion efforts designed to improve women's knowledge and practices regarding OP, its prevention, and treatment. There is an overwhelming need for nurses to carry out future research and to address these issues and to overcome the common misconception that OP is a condition of old age. The

development, evaluation, and dissemination of interventions designed to raise the awareness of OP and health related life style behaviors like exercise will play a major role in preventing the progression of this silent disease.

Limitations

In this study, there *were t*wo major limitations to our data that affect interpretation and generalizations. The first one was the *use of a convenience* non probability snowballing sampling technique, and the second *was* the small sample size. Both of these limitations may affect the generalizability of the study findings to Jordanian women aged 40 to 60 years.

Implications

This study has implications for research, practice and education. The first major implication of this study is the need for nurses to accurately assess menopausal women for the risk factors of osteoporosis. Risk factors of osteoporosis should be taken seriously and should not be ignored. The second major implication is the need for public health awareness and prevention programs. Further research addressing women's risk factors of osteoporosis is essential in improving the quality of life of menopausal women. Results of such research can play a major role in acquiring the support of policy makers to further support research and preventive programs for osteoporosis.

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