

A Study of Knowledge and Health Habits among Patients with Osteoporosis

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Abstract Background: Osteoporosis (OP) affects around 200 million females in the world, and it has become major health burden for healthcare providers. Aim of the Study: The aim of this study is to determine the knowledge level and health habits among patient with osteoporosis. Subjects and Methods: A total of 120 samples were collected from Mansoura Hospital University Outpatient clinic of Rheumatology. Sample includes both male and female osteoporosis. Results: Univariate analysis was performed to know the baseline knowledge level, and t-test, ANOVA was used to find the significant knowledge and lifestyle habits which revealed stress induced osteoporosis were high among individuals 92%, lowest in checking Vitamin D 2%. The Magnitude of impact of healthy lifestyle behaviors and education level on Osteoporosis is very significant. Conclusion and Recommendation: Osteoporosis is a preventable disease. Through appropriate education and lifestyle changes, the incidence of osteoporosis can be reduced. Public health leaders should perform community-based public health programs for osteoporosis protection and incorporate osteoporosis exercise based on successful evidence-based researches, however giving support for more research that is a requirement to further examine and advance the effectiveness of various programs in various public.

Keywords: osteoporosis, health habits, preventable disease, male and female

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1. Introduction

Osteoporosis (OP) affects around 200 million females in the world, and it has become major health burden for healthcare providers. It is more common among women than men at a 4:1 ratio, it is estimated that 53.9% of postmenopausal an adult human female have osteopenia and 28.4% have OP. Moreover, 26% of men have osteopenia and 21.9% have OP [1] in Egypt. The highlight of study to create importance of community's awareness especially in target groups is the beneficial way to reduce the prevalence [2].

Osteoporosis is a chronic progressive systemic skeletal disease described by low bone density and micro-architectural deterioration of the bone tissue with a resultant increase in bone fragility that increases the danger of fracture [1,3]. Osteoporosis "literally means "porous bones." when a person is in their late 20s the bone density peaks and also bone starts to become weaker after the age of around 35 years. As we age, bone breaks down faster than it builds. If this occurs inordinately, osteoporosis results. Osteoporosis is known as silent disease, most affected individuals are not diagnosed and treated until it was identified and become fractured,

however symptoms like back pain, Loss of height over time, stooped posture are early warning signs of osteoporosis [4]. Despite Alarming statistics, early intervention and life style modification can prevent disease progression, evidence suggests some lifestyle modification can prevent or delay development of osteoporosis. (OP) is influenced by such agents such as genetic influence, certain environmental agents and lifestyle such as smoking and alcohol consumption are well-known causes of osteoporosis. However some risk factors for osteoporosis include, sedentary lifestyle, before age 45 years menopause has happened may be due to prolonged lactation, a diet low in calcium and vitamin D [1,5,6]. Inadequate physical activity and several studies evaluated that high drinking of coffee (more than 4 cups per day) was considerably connected with the increase of hip danger of break-in males and females. The greatest danger of falling connected with aging leads to break of the wrist, backbone, and hip. In addition, those with balance troubles are most at danger. Removal of obstacles and baggy carpets in the living environment may be the lowest falls [7,8]. Although various factors causing Osteoporosis, protein plays a significant function in the bone mass acquisition. Meanwhile, through the growth, weakening caloric and protein intake can impair bone development. Low protein intake lowers is to increase

bone formation. Therefore, a positive correlation can be shown among protein intake and bone mass gain in children [4,9].

The residual life expectancy was 18.2 years for men beginning osteoporosis treatment at age 50 years and 26.4 years for women and 7.5 years for men beginning treatment at age 75 years and also 13.5 years for women. [5]. A study conducted in 2008 by Egyptian Osteoporosis Prevention Society (EOP) and incidentally noted lack of awareness about osteoporosis were high among population in Egypt. Therefore, education and awareness can really make difference in disease progression among affected individuals [6].

2. History and Prevalence in Egypt

The contact among age-related lowering in bone density and break danger goes back at least to Astley Cooper, and the term "osteoporosis" and recognition of its pathological manifestation is mostly attributed to the French pathologist Jean Lobstein [3,10]. Osteoporosis is a very old disease, a study reveals that it was previously found in ancient Egyptians (2687-2191 BC)! Zaki et al examined 74 skeletons and carry out a DEXA scan on these ancient Egyptians [11]. Prevalence of OP is rising steadily and becoming a major public health issue with the universal increasing life expectancy; in particular more rapidly in the developing countries. It is projected that by 2050, Egypt will be close to 130 million inhabitants, and more than 30% of its people was 50 years old [12].

The Objectives of the study are to:

- Assess the baseline knowledge about osteoporosis among affected both male and female.
- Compare knowledge and health habits regarding osteoporosis among both male and female.

3. Materials and Method

3.1. Materials

Design: The present study follows a cross-sectional descriptive design.

Setting: The study was conducted in Mansoura Hospital University Outpatient clinic of rheumatology.

Sample: The sampling frame for the study were include 120 patients with osteoporosis (male and female), willing to participate were enrolled in the study.

Data collection tools: Two tools were used to collect data of this study:

Tool I: structured health habit questionnaire, developed by researcher according to the review of literature. It has divided into 6 parts:

Part 1: It will include the Sociodemographic characteristics.

It was developed by the researchers to collect information about participants' which include age, gender, marital status, educational level, medical history, ...etc.

Part 2: health habit questioners which includes 55 closed ended questionnaire

It was developed by researcher based on review of literature it will divided into 7 section

Section 1: Includes closed ended questionnaire evaluated by items related to exercise history (items 9 - 12).

Section 2: Includes closed ended questionnaire evaluated by items related to dietary history (items 13- 33).

Section 3: Includes closed ended questionnaire evaluated by items related to menstrual history (items 34- 39).

Section 4: Includes closed ended questionnaire evaluated by items related to medical history (items 40- 55).

Section 5: Includes closed ended questionnaire evaluated by items related to medication (items 56- 61).

Section 6: Includes closed ended questionnaire evaluated by items related to sun exposure in daily routine (items 62- 63).

Tool 2: Self-administered knowledge questionnaire

Knowledge about osteoporosis prevention and risk factors was estimated by a questionnaire which had contained 10 items. Each question had one true answer. The total record of the questionnaire was 10; equal to 100%. The results under 50%, among from 50 to 75%, and >75 were categorized as low, moderate and high information level; respectively.

3.2. Methods

The ethical committee of Mansoura Hospital University approved the study protocol. Informed oral consent was obtained from all subjects. Tool I, II, These tools were tested for translation and content validity by a group of experts in the field of community health nursing and medical surgical nursing. Finally, required corrections were done accordingly. Reliability was done for both tools on ten patient in mentioned health care settings to investigate the stability of self-administered knowledge questionnaires "Cronbachs' alpha" was done and it yielded $\alpha = 0.82$. A pilot study was carried out on ten patient not included the study in health care setting to ensure the clarity of the study tools. These were excluded from the study subjects.

3.3. Data Collection

An intended questionnaire survey was conducted on subject and informed about the aim of the study and assured about the confidentiality of his/ her response. Each subject was contact on an individual basis, and was interviewed in a private place by the researchers used the three study tools. The average time needed to complete the tools ranged between 15 to 20 minutes. Data for this study was collected during a period of 4 months, January-April 2018.

All persistent results were represented by average with standard deviation, and categorical results were presented by the frequency with a percentage. Independent t-test and ANOVA technique was used to measure the significant difference among the demographic variables related to total knowledge score. All the analysis was complemented using SPSS 21.0 version. A P value of less than 0.05 was significant.

3.4. Statistical Analysis

All persistent results were represented by average with standard deviation, and categorical results were presented

by the frequency with a percentage. Independent t-test and ANOVA technique was used to measure the significant difference among the demographic variables related to total knowledge score. All the analysis was done by using SPSS 21.0 version. A P value less than 0.05 was considered as significant.

3.5. Ethical Considerations

The ethical committee of Mansoura Hospital University approved the study protocol. In- formed oral consent was obtained from all subjects.

4. Results

The participant demographic characteristics are shown in [Table 1](#). The mean age of participants was 48.6 years with a standard deviation of 9.9. Majority of respondents were female (94.2%), and mostly from urban residence (63.3%). Majority of the participants were married (84.6%). Majority of subjects had only basic education level (45.8%), and only 38.1% of respondents were professionals.

Table 1. Socio-demographic characteristics (N= 120)

Variables	n, (%)
Age in years Mean ± SD	48.6 ± 9.9
Gender	
Male	7(5.8%)
Female	113(94.2%)
Original residence	
Urban	76 (63.3%)
Rural	31(25.8%)
Semi-urban	13(10.8%)
Marital status	
Single	6(5.1%)
Married	99(84.6%)
Widow	12(10.2%)
Education	
Illiterate	5(4.2%)
Read & write	55(45.8%)
Primary	5(4.2%)
Intermediate	42(35.0%)
Secondary	13(10.8%)
Occupation	
Manual	43(40.9%)
Semiskilled	12(11.4%)
Skilled	6(5.7%)
Semiprofessional	40(38.1%)

Table 2. Summarizes distribution of subjects based on history of dietary

	n.(%)
Food preference	
Vegetarian	72 (60.0%)
Non-vegetarian	42 (35.0%)
Do you have milk in your diet?	
Yes	90(75.0%)
Is there cheese in your diet?	
Yes	115(95.8%)
Is there yogurt in your diet?	
Yes	109(90.8%)
Do you eat all food?	
Yes	101(84.2%)
Do you have a history of eating disorders?	
Yes	47(39.2%)
Do you smoke?	
Yes	3(2.5%)

Dietary history reveals people who are taking cheese highest in 95.5% and smoking history 2.5% which shows food habits carries higher value than lifestyle habits. Respondents medical history are shown in [Table 3](#)

Overall 112 respondents agreed that they have stress 93.2 % which is significant. This may due post osteoporotic stress induced depression which aggravate further damage of, cells and bones by alters physical metabolism therefore patient suffering from osteoporosis need lot of pshyco-counselling and education

Respondents knowledge level with different categories were shown in ([Figure 1](#)).

Table 3. Medical history (N =120)

	n.(%)
Have you ever suffered from excessive stress?	
Yes	112(93.3%)
Did you check the level of vitamin D routinely?	
Yes	13(10.8%)
Did you check the amount of calcium routinely?	
Yes	18(15.0%)
Are you currently taking any multivitamin supplements?	
Yes	48(40.0%)
Type of consuming supplement	
Syrup	12(10.0%)
Drops	51(42.5%)
Tablets	2(1.7%)
Family history of osteoporosis	
Yes	100(83.3%)
Family history of any other bone disorder	
Yes	89(74.2%)
Personal history of any other bone disorder	
Yes	95(79.2%)
Have you ever sustained ant fractures	
Yes	33(27.5%)
Low trauma	
Yes	16(13.3%)
Recent fall	
Yes	18(15.0%)
Lost weight recently	
Yes	53(44.2%)

This study reveals overall knowledge level is high among Osteoporosis however there is a positive correlation between Knowledge and education is proven. It is so important to develop in depth knowledge about OP and relevant information on help centers by continues education. At this point community level involvement is very much required.

Most interviewed subjects (76.7%) had high knowledge about osteoporosis regarding the concept of the disorder and its risk factors ([Figure 2](#)).

There were positive relationship between education level and total knowledge score (p <0.001) ([Figure 3](#)), i.e., when the education level is increases then the knowledge level also will increase. Therefore the knowledge level is totally depending on their education. No significant relationship was found with other demographic variables and also with other history.

Total scores of exercise history, dietary history, medical history, medication and sun exposure were measured from all participants and it is shown in [Table 4](#). Almost all the participants has no exercise history, mostly (55.8%) has moderate level of dietary habit, 69.2% of participants has normal medical history, most of the participants (54.2%)

has taking moderate level of medication, and also half of the participants has no sun exposure. No significant

relationship was found between those above variables and with demographics.

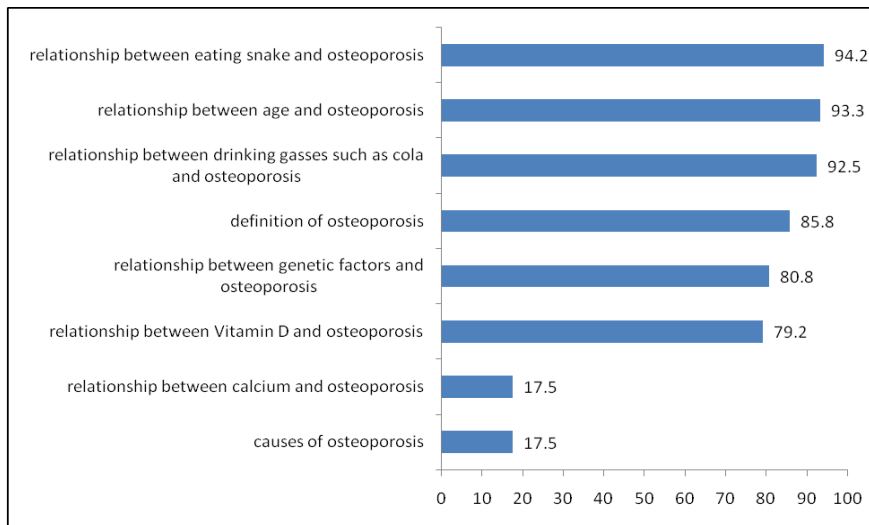


Figure 1. Respondents Knowledge about Osteoporosis

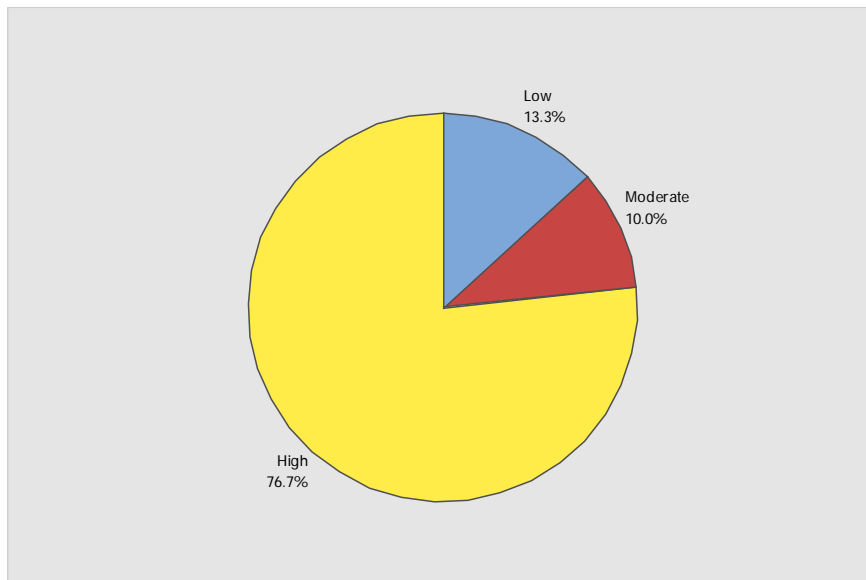


Figure 2. Respondents overall knowledge level

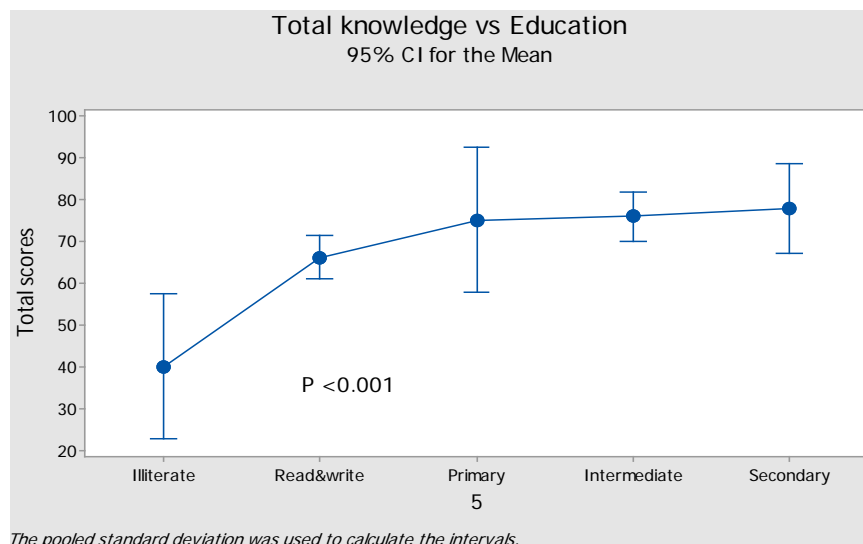


Figure 3. Respondents knowledge level related to education



Figure 4. Respondents knowledge level related to Gender

Table 4. Distribution of subjects based on exercise history, dietary history, medical history, medication and sun exposure

exercise history		dietary history		medical history		medication		sun exposure	
	n (%)		n (%)		n (%)		n (%)		n (%)
Nil	120(100%)	Nil	0%	Nil	0%	Nil	0%	Nil	14(11.7%)
Low	0	Poor	24(20%)	Poor	14(11.7%)	low	32(26.6%)	Low	23(19.2%)
Moderate	0	Moderate	67(55.8%)	Moderate	23(19.2%)	Moderate	65(54.2%)	Moderate	56(46.6%)
High	0	High	29(24.2%)	Normal	83(69.2%)	High	23(19.2%)	High	27(22.5%)

5. Discussion

Osteoporosis has newly been identified as a large generally health problem and also it has implications for all age groups. Hence becoming information of osteoporosis should be an advantage for future intervention programs in order to elevate particular behavioral strategies for osteoporosis high knowledge prevention [13,14]. Two important preventive habits had contained appropriate levels of calcium and vitamin D and exercise. Moreover, to obtain the wanted behavioral alterations connected to health and alimentation it will demand the realization of enough information, situation, cleverness, and self-efficacy [12,15]. As the results proved that the respondent’s knowledge of relationship between eating and drinking alcohol were high, on contrast knowledge about causes of osteoporosis and calcium intake very low 17.5 %.

This study was conducted recommendations for nutrition, physical activity, and other lifestyle practices that can assist to obtain that the target. Meanwhile, it could be suggested that the activities and practices participate not only to bone health but also to overall health and the state of being strong and active. Actually, bone-specific recommendations appropriate well within an overall program of good diet and physical activity that should be followed because prohibit the beginning of much of the greatest chronic diseases [16,17]. From our results in Table 2, it could be observed that the majority of women had high-level information about osteoporosis danger agents and preventive behaviors. This information predominantly does not translate to suitable alterations in healthy living habits as it has been shown meanwhile no considerable connection among total information results and calcium intake or physical activity level. Low or

moderate levels of information around this disease in women of other countries are reported by some studies. It appears that osteoporosis information is not well internalized between studied women. To make estimated lifestyle alterations such as promoting weight-bearing physical activity. Educational programs are suggested to give support to primary health care providers to consult with women additional effectively about osteoporosis preventions. We must not neglect the Emotional Aspects of Osteoporosis. It’s important to administer anxiety and not allow osteoporosis to intervene with regular activities. [8,13]. It is unfortunate that the people who have previously broken a bone may be due to osteoporosis are additional possible to break bones in the future. For the majority of people, that second break can lead to depression. Different studies observed a connect among bone loss and depression. Symptoms of depression may be involved a loss of appetite, having a problem sleeping, feelings of uselessness, helplessness and hopelessness and even thoughts of suicide. The WHO Regional Office for the Eastern Mediterranean has classified the cases of health of the elderly for over a decade and has specified a requirement for suitable diet and nutrition care for the elderly [18,19]. Meanwhile, the greatest of osteoporotic patients inform what to do, but they are not completely certain about something that lifestyle changes will play a significant function in the lowering of osteoporotic break danger [7,17]. Our results illustrated that in spite of a large deal of proof showed that the significance of life style changes for Osteoporosis women at danger are not aware of and do not adopt healthy habits may be caused avoid or minimize bone loss [13,20]. Moreover, the highest hesitation of osteoporosis showed in the female may be due to a sedentary life in contrast with female workers

who practiced some activity. Meanwhile, the results suggested that the lifestyle agents may affect osteoporosis in females by affecting peak bone mass and/or the rate of bone loss following the menopause [21,22].

6. Conclusion

Osteoporosis is a preventable disease. Through appropriate education and lifestyle changes, the incidence of osteoporosis can be reduced. Public health leaders should perform community-based public health programs for osteoporosis protection and incorporate osteoporosis exercise based on successful evidence-based researches, however giving support for more research that is a requirement to further examine and advance the effectiveness of various programs in various public.

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