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Knowledge on Osteoporosis among Greek women: Internet-based survey in 2018

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Abstract: **We aimed to evaluate the knowledge of osteoporosis in a sample of Greek women. A group of 646 women were enrolled in this cross-sectional study in the period from April 2018 to May 2018 using Google Form. The participants completed a questionnaire composed of 19 questions about osteoporosis which covering the main domains of knowledge on osteoporosis. Each correct answer carried 1 point whereas incorrect or "don't know" carried 0 points. This gave a total score range of 0-19. A cut-off level of < 10 points was considered as poor knowledge while ≥ 10 was regarded as good knowledge. Out of 646 respondents, 570 (88.2%) had good knowledge and (11.8%) had poor knowledge. Our study revealed that Greek women have a good of knowledge about osteoporosis and no significant difference in osteoporosis knowledge between the age groups, education level, and location area.**

Keywords: **Osteoporosis, Knowledge, Greece.**

1. INTRODUCTION

In the rapidly developing societies of new world, there is no denying over the increase in life expectancy due to improved everyday life standards. However, there is an increased risk of every individual suffering from a metabolic disease. Osteoporosis is a metabolic bone disease that comes with advancing age affecting about 75 million people world-wide, with huge socio-economic implications. (1)

The World Health Organization definiens osteoporosis as "systemic bone disease characterized by decreased bone mass and deterioration of micro-architecture of bone tissue leading to increased risk of fracture". Moreover, it is a progressive disease, as in its early stages, it is usually asymptomatic. (2)

Osteoporosis can be classified into two categories: primary and secondary. Primary osteoporosis includes: after menopausal osteoporosis, age-related osteoporosis, idiopathic juvenile osteoporosis, as well as osteogenesis imperfecta. Under the category of secondary osteoporosis fall diseases such as Cushing disease, Sudeck's disease, diabetes, hyperthyroidism, use of corticosteroid, sickle cell anemia, multiple myeloma or immobilized body parts for a prolonged period of time. (3)

As far as risk factors are concerned, the primary factors are often attributed to decrease bone mass and increase rhythm of bone loss. But also, they can be ascribed to secondary factors such as menopause, insufficient diet, lack of exercise, excessive protein uptake, smoking, alcohol abuse, stimulant abuse, gender, race, heritage, constitution. (3)

In the United States, surveys show that 29% of women and 18% of men, aged 45-79 years old, suffer from osteoporosis. In Greece though, surveys show that 19% of women and 11% of men suffer from osteoporosis, aged above 60. There is only one way to forestall osteoporosis and that is, prevention. An early diagnosis and treatment methods are key in successfully preventing falls and fractures. (4)

The aim of this study is to evaluate the knowledge and awareness of osteoporosis in Greek women.

2. METHODS

A cross-sectional Web based survey was conducted for this study. Data were collected between April 2018 and May 2018 using Google Form. We obtained a convenience sample (N=646) via a social media website (Facebook). No ethical approval was required. Inclusion criteria were women self-reported age over 30 years. After entering the Web-based survey, participants were provided with the study information. According to GDPR, for non-sensitive data, you need "clear consent", not "explicit" consent. Therefore, we placed a completely uncontested notice before starting the questionnaire. Next, they were asked socio-demographic and a questionnaire about osteoporosis.

Participants were required to bestow some of their personal information such as: age, education level and location area. The questionnaire also included 19 questions on osteoporosis knowledge, which include the definition, risk factors, management, prevention and complications of osteoporosis. Each question was given a 'Yes', 'No' or 'Don't Know' option. The latter option was designed to avoid guessing. Each correct answer granted 1 point whereas incorrect or "don't know" granted 0 points. This gave a total score range of 0-19. A cut-off level of <10 points was considered as poor knowledge while ≥10 was regarded as good knowledge.

Statistical analysis was conducted using SPSS (version 22). Descriptive statistics were used to demonstrate the characteristics of the study population. Continuous variables were expressed as mean ± standard deviation whereas categorical variables were measured as frequency and percentages. Statistical significance is considered as $P < 0.05$.

3. RESULTS

The mean age of the participants was 38.17 ± 9.6 years. Responses to osteoporosis questions are shown in Table 1. Out of 646 respondents, 570 (88.2%) had good knowledge and (11.8%) had poor knowledge - p-value < 0.01. There was no significant difference in the level of knowledge on osteoporosis among the subgroups (age, education level, and location area).

Table 1: Responses to the questionnaire questions

Question	Correct	Incorrect	Don't know
Pain is common in individual with osteoporosis	38.7%	57.0%	4.3%
Osteoporosis is a condition characterized by fragile bones	90.1%	8.1%	1.8%
Osteoporosis and osteomalacia are different conditions	87.9%	7.6%	4.5%
Osteoporosis is common in women than men	97.2%	2.4%	0.4%
Bones are strongest between the ages of 20 to 50 years	89.2%	8.3%	2.5%
Early menopause is a risk factor for osteoporosis	96.5%	2.1%	1.4%
Excessive alcohol intake is a risk factor for osteoporosis	88.6%	3.1%	8.3%
Sun light reduces the risk of getting osteoporosis	92.1%	7.1%	0.8%
Lack of exercise is a risk factor for osteoporosis	85.4%	8.1%	6.5%
Awareness of HRT in prevention of osteoporosis	94.2%	1.7%	4.1%
High chance of sustaining a fracture if the previous history of fragility fractures	92.0%	2.5%	5.5%
Family history predisposes to osteoporosis	75.4%	15.4%	9.2%
Low BMI is risk factor for osteoporosis	63.8%	29.1%	7.1%
Osteoporosis increases risk of fractures	94.3%	4.4%	1.3%
Physical activity is beneficial for osteoporosis	84.2%	10.7%	5.1%
If you have osteoporosis, you become shorter due to bent spine	75.0%	15.0%	10.0%
Osteoporosis is treatable disease	72.3%	22.2%	5.5%
There are no effective treatments for osteoporosis available	52.6%	37.2%	10.2%
Calcium supplements and Vitamin D can prevent osteoporosis	93.1%	5.2%	1.7%

4. DISCUSSION

This study explored the knowledge of Greek women, aged 30 years and more. Almost ninety per cent of the study group expressed good knowledge on osteoporosis which is significantly high. About age, education level, and location area, no statistically significant differences in the degree of osteoporosis knowledge between the various groups

Concerning the questions about osteoporosis, the majority of the respondents demonstrated a good level of knowledge; however, a large gap in knowledge of osteoporosis was detected in two questions assessing symptoms and treatment of osteoporosis with correct answers only of 57% and 37.2% respectively.

Of note, our study has several limitations; the cross-sectional design decreased the power of the study and outcome bias cannot be excluded due to the convenience sample. A randomized sample would have led to a better conclusion.

5. CONCLUSION

In conclusion, this present study showed that Greek women have a good knowledge about osteoporosis, but there is no significant difference in osteoporosis knowledge between the age groups, education level, and location area. However, there are a few gaps in knowledge that need to be addressed by adopting educational programs to the general population for the decrease disease burden.

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