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Research Article

**EVALUATION OF KNOWLEDGE ABOUT OSTEOPOROSIS  
AMONG FEMALE MEDICAL STUDENTS IN SAUDI ARABIA****Othman Mohammed Almousa<sup>1\*</sup>, Abdulrahman Mohammed Alruwaili<sup>2</sup>, Hashem  
Abdulwhab Jaml Allil<sup>3</sup>, Walla Sadiq Alhassan<sup>4</sup>**<sup>1</sup> Prince Sultan Bin Abdulaziz Medical City, Riyadh, Saudi Arabia, <sup>2</sup> Al-Qurayyat General Hospital, Saudi Arabia, <sup>3</sup> Ibn Sina National College, Jeddah, Saudi Arabia, <sup>4</sup> King Faisal University, Riyadh, Saudi Arabia**Abstract:**

**Background:** Osteoporosis is a common disease that is characterized by low bone mass and skeletal fragility, leading to higher risk of fracture. The disease is medically diagnosed as having reduced bone mineral density that is 2.5 standard deviations below the adult peak mean. Approximately 34 % of Saudi female are osteoporotic, to treat and prevent osteoporosis our health care providers should have adequate level of knowledge about osteoporosis.

**Methods:** This study was carried out among medical interns in Saudi Arabia. A pre-tested self-administered questionnaire was used to assess knowledge, beliefs, and practices towards osteoporosis. Osteoporosis Knowledge Assessment Tool (OKAT), a validated tool was used. This consists of 20 questions to assess knowledge.

**Results:** Rate was 100 % with a total 81 female students. A 45.6 % of the participants were medical interns, 32% were fifth year medical students and 22.4% were sixth year medical students. 83.9% of the participants correctly identify the relation between the age and osteoporosis, 67.9% knew that smoking is one of osteoporosis risk factors, and 46.9% correctly consider present of family history of osteoporosis as a risk factor. 55.9% participants felt eating calcium rich food was difficult. 87.7% felt that if they had osteoporosis that it would change their whole life.

**Conclusion:** Majority of participants had a acceptable level of knowledge on osteoporosis, Steps such as education about osteoporosis risk factors and preventing methods are required to improve the health states of the community.

**Keywords:** Osteoporosis, Postmenopausal, Tabuk, Saudi Arabia.

**Corresponding author:****Othman Mohammed Almousa,**

Prince Sultan Bin Abdulaziz Medical City, Riyadh, Saudi Arabia.

E-mail; [Dr.othman.1439@gmail.com](mailto:Dr.othman.1439@gmail.com)

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**INTRODUCTION:**

Osteoporosis, a chronic, progressive disease of multifactorial etiology. It has been most frequently recognized in elderly white postmenopausal women. Osteoporosis is a common disease that is characterized by low bone mass and skeletal fragility, leading to higher risk of fracture, specially at the spine, hip, wrist, humerus and pelvis [1]. The World Health Organization has defined diagnostic thresholds for low bone mass and osteoporosis based upon bone mineral density (BMD) measurements compared with a young adult reference population (T-score). The disease is medically diagnosed as having reduced bone mineral density that is 2.5 standard deviations below the adult peak mean [2]. They may be diagnosed as an incidental finding on chest or abdominal radiographs. The clinical manifestations of symptomatic vertebral fractures include pain and height loss. Men may also have symptoms of disorders that are known to cause osteoporosis, such as hypogonadism, malabsorption, and hyperparathyroidism.

An estimated prevalence of osteoporosis showed that about 34% of healthy Saudi women, and 30.7% of men, aged between 50-79 years are osteoporotic, which expected to increase further [3].

For the prevention and treatment of osteoporosis, it is vital that health care providers have adequate knowledge about osteoporosis to ensure that they can effectively treat individuals with this disease.

The awareness of medical students about osteoporosis were studied in many studies, a lot of studies shown that medical students know the definition of osteoporosis, but lack knowledge of its complications and preventive measures [4]. In this study we are aiming to assess the level of medical student's awareness about osteoporosis.

**METHODOLOGY:**

This study was carried out among medical interns in Saudi Arabia. A pre-tested self-administered questionnaire was used to assess knowledge, beliefs,

and practices towards osteoporosis. Osteoporosis Knowledge Assessment Tool (OKAT), a validated tool was used 5. This consists of 20 questions to assess knowledge about osteoporosis. Study was explained to participants and informed consent was taken from the participant.

**Statistical Analysis**

The collected Data were entered and analyzed using the Statistical Package for Social Sciences (SPSS) statistical program version 19.

**RESULTS:**

The response rate was 100 % with a total 81 female students. A 45.6 % of the participants were medical interns, 32% were fifth year medical students and 22.4% were sixth year medical students. 97.5% were non-smoker, 1.2% smoker and 1.2% ex-smoker. (Table 1)

The results showed 83.9% of the participants correctly identify the relation between the age and osteoporosis, 67.9% knew that smoking is one of osteoporosis risk factors, and 46.9% correctly consider present of family history of osteoporosis as a risk factor. Fifth year medical students mostly identified age and family history of osteoporosis, where smoking mostly identified by sixth year medical students.

Perceptions, towards benefits of calcium intake revealed that 55.9% participants felt eating calcium rich food was difficult, and 9.8% felt that calcium rich foods are too expensive.

On assessing the perceived seriousness of osteoporosis, 87.7% felt that if they had osteoporosis that it would change their whole life and would make daily activities more difficult.

As shown in Table 2, approximately 50% and more of female medical students and interns belief that osteoporosis usually causes symptoms. Only 18.9% and 26.9% of medical interns and 5th year medical students aware that fracture is one of osteoporosis complication. (Table 3)

**Table1: Descriptive characteristics of the participants**

		Number	Percentage
<b>Gender</b>	<b>Female</b>	81	100%
<b>Smoking</b>	<b>Non Smoker</b>	1	1.2%
	<b>Smoker</b>	1	1.2%
	<b>Ex-Smoker</b>	79	97.5%

**Table 2: Assessment knowledge about osteoporosis symptoms.**

<b>Osteoporosis usually causes symptoms ( e.g. pain) before fractures occur.</b>			
	<b>Agree</b>	<b>Disagree</b>	<b>Don not know</b>
<b>Interns</b>	48.6%	45.9%	5.4%
<b>6<sup>th</sup> year</b>	55.5%	33.3%	11.1%
<b>5<sup>th</sup> year</b>	61.5%	23%	15.3%

**Table 3: Assessment knowledge about osteoporosis fracture risk.**

<b>Osteoporosis leads to an increased risk of bone fractures.</b>			
	<b>Agree</b>	<b>Disagree</b>	<b>Don not know</b>
<b>Interns</b>	18.9%	45.9%	35.1%
<b>6<sup>th</sup> year</b>	55.5%	10.8%	10.8%
<b>5<sup>th</sup> year</b>	26.9%	42.3%	30.7%

**DISCUSSION:**

The aim of the study was to assess knowledge, beliefs and practices regarding osteoporosis among female medical interns and students. Knowledge about osteoporosis preventive and its risk factors are important in preventing and minimizing its complication. However, most of study participants truly identify most of osteoporosis risk factors, including and not limited to advanced age, smoking and present of family history of osteoporosis. Low calcium intake is associated with increased osteoporosis risk. Optimal calcium intake is important to reach optimal peak bone mass, which is protective against osteoporosis and its complication, 44.1% of our study participants believe that eating calcium rich food is difficult [6].

**CONCLUSIONS:**

Majority of participants had an acceptable level of knowledge on osteoporosis, Steps such as education about osteoporosis risk factors and preventing methods are required to improve the health states of the community.

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