



## Osteoporosis Preventive Behavior Among Female Healthcare Students in Da Nang, Vietnam

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**Background:** Osteoporosis prevention at young ages is crucial to diminish the risk of the disease and its complication in later years of life. Having good osteoporosis knowledge and positive health belief may lead to better preventive behavior which then contributes to build and maintain bone health throughout life.

**Objective:** To investigate knowledge, health belief, and behavior of osteoporosis prevention among female healthcare students.

**Methods:** The descriptive cross-sectional study was conducted in a public medical university in Da Nang of Vietnam. Four hundred participants were selected by applying the multistage sampling technique. Data were collected from May 2020 to June 2020 through the questionnaire that consists of 4 parts including the demographic data form, the osteoporosis knowledge assessment tool, the osteoporosis health belief scale, and the exercise and calcium behaviors scale. Data were analyzed using descriptive statistics and Pearson correlation test.

**Results:** Participants had poor osteoporosis knowledge (mean [SD], 37.8 [16.0]; range, 0 - 75) and low preventive behavior (mean [SD], 5.7 [3.5]; range, 0 - 25). Osteoporosis health belief was found at a moderate level with a mean (SD) of 126.7 (12.9) (range, 84 - 187). There were positive significant correlations between knowledge and health belief, knowledge and behavior of osteoporosis prevention ( $P < .05$ ).

**Conclusions:** Osteoporosis preventive behavior of female healthcare students was low. Osteoporosis education programs should be developed for female healthcare students to improve their knowledge and health belief that would then lead to their better preventive behavior.

**Keywords:** Osteoporosis preventive behavior, Osteoporosis knowledge, Health belief, Female healthcare student

Rama Med J: doi:10.33165/rmj.2021.44.3.249920

Received: March 22, 2021 Revised: July 8, 2021 Accepted: August 31, 2021

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## Introduction

Osteoporosis is a metabolic bone disorder that has been referred to as a silent disease until the patients suffer serious complications such as fractures.<sup>1</sup> Women are more susceptible to osteoporosis compared to men because of hormone changes after menopause.<sup>2</sup> This disease is becoming an important health concern in many countries around the world.<sup>2</sup> In some developed countries such as France or Germany, approximately 15% of women had been diagnosed with osteoporosis.<sup>2</sup> Similarly, the percentage of osteoporosis was found at 14% among women aged 50 years and older in Vietnam.<sup>3</sup> It has been documented that osteoporosis negatively affects the patients' life. Osteoporosis-related fractures not only increase mortality and reduce the quality of life but also impose an enormous economic burden on both patients and society.<sup>1,4</sup>

As the young age is a critical stage for skeletal growth and development, achievement of peak bone mass during this period can reduce the risk of osteoporosis in later years of life.<sup>5</sup> One of the comprehensive strategies for osteoporosis prevention is nutrition that must have an adequate daily intake of calcium, vitamin D, and protein.<sup>6</sup> Properly physical activity is another preventive strategy for osteoporosis.<sup>6</sup> Resistance exercise and weight-bearing training have been recommended to young people to increase bone mass and strength.<sup>6</sup>

It was believed that osteoporosis knowledge could have an influence on preventive behavior; therefore, various studies have been carried out to examine the knowledge towards osteoporosis prevention among female students.<sup>7</sup> According to the studies in Pakistan and Malaysia, most of the female students had moderate or poor osteoporosis knowledge.<sup>8,9</sup> Whereas the majority of the Malaysian students knew the risk factors and consequences of osteoporosis,<sup>9</sup> only 36.0% and 15.0% of the female medical students in Pakistan identified family history and smoking as the risk factors, respectively.<sup>8</sup> Additionally, 45.0% of the Pakistani participants were aware of dietary sources of calcium while only 16.0% of the Malaysian participants understood the benefit of daily intake of calcium

and vitamin D for osteoporosis prevention.<sup>8,9</sup> Although the findings varied across the studies, the majority of the researchers concluded that young people such as female students had poor osteoporosis knowledge.<sup>7</sup>

Previous studies investigated not only knowledge but also attitude regarding osteoporosis because the researchers believed that understanding the attitude of young women towards osteoporosis is necessary for designing and implementing effective health promotion programs.<sup>10</sup> Numerous studies were conducted among young people such as female students reported that their perceived susceptibility of osteoporosis was low but perceived seriousness was higher.<sup>7-9</sup> Only 14.0% of female medical students in Pakistan perceived that they have a higher risk of osteoporosis whereas more than half of them believed that osteoporosis is a scary illness that badly affects the patients' life.<sup>8</sup> In terms of osteoporosis prevention, participants had positive perceived benefits of calcium and vitamin D intake; however, their perceived barriers to calcium intake were also high.<sup>7-9</sup> The most concerned barriers were the difficulties of eating calcium-rich foods and its high cost.<sup>7,8</sup> Regarding exercise, more than one-third of the Malaysian female students did not believe in the preventive impact of adequate exercise on osteoporosis.<sup>9</sup> Besides having low perceived benefits of exercise, female students also had poor motivation to exercise as only 22.8% of participants at 2 universities of Pakistan expressed their motivation towards regular exercise.<sup>8</sup> Conversely, their motivation to nutrition was higher with approximately 61.0% of them stated that they were motivated to follow a balanced diet.<sup>8</sup>

As preventive behavior of young people would result in peak bone mass in their older age, numerous studies have investigated behaviors of osteoporosis prevention among young people in order to provide understanding for the development of effective interventions. The majority of the previous studies reported poor behavior regarding osteoporosis prevention among young people particularly female students.<sup>7</sup> According to the study in Pakistan, only 29.0% of female medical students achieved calcium daily intake as recommended.<sup>8</sup> Approximately one-third of female



medical students used dairy products.<sup>11</sup> A similar result was also found in another study conducted in Malaysia in which 38.7% of the health sciences students (both genders) took vitamin D supplements while only 13.3% of them drank milk.<sup>9</sup> In terms of exercise, it was evidenced that a few female students had regular exercise or adequate physical activity.<sup>8,9,11</sup>

From the literature review, knowledge, attitude, and behavior of osteoporosis prevention were low among female students. In Vietnam, the number of studies investigating this topic was limited and not specific in the group of female healthcare students who can convey their knowledge to the community.<sup>12</sup>

Therefore, this study aimed to examine osteoporosis knowledge, health belief, and preventive behaviors among female healthcare students at Da Nang in order to provide evidence for the development of health promotion interventions towards osteoporosis.

## Methods

### Participants

This study was descriptive cross-sectional design. Eligible participants of the study were female students of a public medical university in Da Nang, Vietnam. Those who had diagnosed with osteoporosis before were eliminated from the study.

The sample size was calculated using the formula:  $n = z^2 p(1-p)/d^2$ ; where  $z = 1.96$  with 95% confidence interval,  $d = 0.05$ , and  $p = 0.49$ , according to the study conducted by Nguyen et al<sup>12</sup> in 2015.

The calculated sample size was 385 individuals. To minimize missing data, an attrition rate of 10% was added. However, 24 participants did not respond to the questionnaire, thus, the final sample size of 400 was used for analysis.

Participants were selected by the multistage sampling technique. Proportional and random sampling methods were applied to select the year of study, the field of study, and the class. After that, participants were conveniently selected from female students of each class based on inclusion criteria.

### Ethics

This study was approved by ethical review committee of Da Nang University of Medical Technology and Pharmacy (No. 631/QD-DHKTYDDN). All participants received a full explanation about the study, confidentiality, and the right to refuse or withdraw from the study.

### Instruments

Data were collected through a questionnaire that consists of 4 parts. Except for part A, the remaining parts are instruments developed in English. These instruments were forward translated from English to Vietnamese and then back-translated by 2 bilingual translators after achieving permission from the developers. Five experts including 2 physicians, 2 nursing lecturers, and 1 registered nurse verified the content validity of the Vietnamese version of the instruments. The content validity index (CVI) and reliability of the instruments with 30 participants and 400 participants were performed (Table 1).

Part A was developed by the researchers to obtain information about year of study, field of study, family history of osteoporosis, and participation in osteoporosis education programs.

Part B was the osteoporosis knowledge assessment tool (OKAT) developed by Winzenberg et al<sup>13</sup> that was used to measure osteoporosis knowledge of participants. This tool consisted of 20 items with true, false, and don't know responses. Each correct answer got a score of 1,

**Table 1. Content Validity Index and Reliability of the Instruments**

Instrument	CVI	KR-20		Cronbach' Alpha	
		Pilot Study	Actual Study	Pilot Study	Actual Study
OAKT	0.99	0.66	0.67	-	-
OHBS	0.95	-	-	0.83	0.86
ECBS	1.00	-	-	0.70	0.63

Abbreviations: CVI, content validity index; KR-20, Kuder-Richardson's method; OKAT, osteoporosis knowledge assessment tool; OHBS, osteoporosis health belief scale; ECBS, exercise and calcium behaviors scale.



while a score of 0 was given for an incorrect or don't know answer. The total score of 20 items was multiplied by 5 to get a score of 100. Osteoporosis knowledge was classified into 5 categories, including very good (score over 86), good (score 61 - 85), moderate (score 41 - 60), poor (score 20 - 40), and very poor (score less than 20).

Part C was the questions measuring osteoporosis health belief that was modified from the osteoporosis health belief scale (OHBS) developed by Kim et al.<sup>14</sup> There are 40 items covering perceived susceptibility, perceived seriousness, perceived benefits of exercise, perceived benefits of calcium intake, perceived barriers to exercise, perceived barriers to calcium intake, and health motivation. The response to positive items followed a 5-point Likert-rating scale ranging from 1 (strongly disagree) to 5 (strongly agree) while scores for the 12 negative items of perceived barriers to exercise and calcium intake were reversed. The total scores were from 40 to 200 with a higher score representing more positive health belief of osteoporosis. The score of the scale and domains were interpreted by comparing the mean score with the mid possible score and the results from the previous study.<sup>15</sup>

Part D was the exercise and calcium behaviors scale (ECBS) that was developed by Nguyen<sup>15</sup> to examine osteoporosis preventive behaviors. This scale had 8 items with 2 items measuring 2 types of exercise and 6 items evaluating calcium consumption from 6 different sources. The first 2 items were scored from 0 (never) to 5 (5 or more times a week). The last 6 items were rated using a 9-point Likert-type scale ranging from 0 (never or less than once a month) to 4 (4 or more times a day). A higher total score reflected better osteoporosis preventive behavior. In this study, the score of the whole scale was interpreted by comparing the mean score with the mid possible score.

### Data Collection

Data were collected from May 2020 to June 2020. The researchers reached the eligible participants at the classroom after classes ended; explained the purpose

of the study, benefits, and protection of confidentiality. Once they agreed to join the study, the researchers distributed the structured questionnaire to participants and required them to fill in the form. The researcher used the code numbers to differentiate participants on the form. After completing, all questionnaires were kept in brown envelopes which only the researchers were able to access. Data was concealed in a locked file in order to assure confidentiality of the participant's information.

### Data Analysis

Data were entered by the researchers and then double-checked for completeness of data before starting data analysis. The SPSS software version 20.0 was conducted to analyze data (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp; 2011). Descriptive statistics were used to describe demographic characteristics and all study variables. The normality of the 3 study variables was checked by looking at the histograms of standardized residuals and all the histograms had a normal distribution. Because all variables met the statistical assumptions, Pearson product moment correlation coefficient ( $r$ ) was calculated to examine the correlation between knowledge, health belief, and preventive behavior of osteoporosis at a significance level of .05 ( $P < .05$ ).

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## Results

### Participant Characteristics

Four hundred female students participated in the study. The highest percentage was the 3rd year students (25.5%) followed by the 1st year students (24.3%). Regarding the field of study, approximately a quarter of participants (25.3%) were pharmacy students while general nursing students accounted for 19.8%. A few of medicine students (1.8%) participated in this study. Most of participants (84.5%) did not have family history of osteoporosis. Nearly all participants (98.2%) had not yet participated in any osteoporosis education programs (Table 2).

**Table 2. Participant Characteristics**

Characteristic	No (%)
Year of study	
1st year	97 (24.3)
2nd year	80 (20.0)
3rd year	102 (25.5)
4th year	77 (19.2)
5th year	44 (11.0)
Field of study	
Pharmacy	101 (25.3)
General nursing	79 (19.8)
Dental nursing	73 (18.2)
Medical laboratory technology	73 (18.2)
Anesthetist nursing	29 (7.2)
Rehabilitation technique	20 (5.0)
Medical imaging technique	18 (4.5)
Medicine	7 (1.8)
Family history of osteoporosis	
No	338 (84.5)
Yes	62 (15.5)
Participation in osteoporosis education programs	
No	393 (98.2)
Yes	7 (1.8)

### Osteoporosis Knowledge

The mean of osteoporosis knowledge was 37.8 (standard deviation [SD], 16.0; range, 0 - 75), reflecting a poor level (Table 3). Specifically, only 6.0% of participants had good osteoporosis knowledge whereas the majority of them (60.5%) had osteoporosis knowledge at poor and very poor level. Most participants (87.5%) knew that osteoporosis increases the risk of bone fractures. However, 83.2% of participants still thought that osteoporosis usually brings about symptoms before fractures happen. Aged 80 years and over, family history of osteoporosis, and smoking are the risk factors that were identified by 69.0%, 43.5%, and 42.8% of participants, respectively. Regarding prevention, nearly three-quarters of participants recognized sardines and broccoli as good sources of calcium for people who cannot take dairy products.

Additionally, about half of participants understood that calcium supplements alone are not enough to prevent bone loss whereas only 17.0% of them realized that an adequate calcium intake can be attained with 2 glasses of milk a day.

### Osteoporosis Health Belief

In this study, the actual scores of osteoporosis health belief were from 84 to 187, and the mean (SD) score was 126.7 (12.9), indicating a moderate level. In view of the domains of the osteoporosis health belief, the mean score and standard deviation of each domain were determined (Table 3).

### Osteoporosis Preventive Behavior

Osteoporosis preventive behavior among female medical students was low (mean [SD], 5.7 [3.5]; range, 0 - 25). Regarding exercise, approximately two-thirds of participants (69.8%) did exercise at least twice a week (such as weight-bearing or jumping) whereas 73.5% of them seldom or never did resistance exercise. In terms of calcium behavior, about 60% of the students ate weekly dairy products, broccoli and/or leafy greens (at least twice per week). Similarly, nearly three-quarters of participants ate tofu and calcium-fortified foods (ie, nuts, almonds) from 1 to 3 times a month. However, only 31.5% of them ate sardines and/or canned salmon more than once a month. Moreover, the majority of participants (77.5%) never took calcium supplements (Table 3).

### Correlation Between Knowledge, Health Belief and Behavior of Osteoporosis Prevention

There was no significant correlation between health belief and behavior of osteoporosis prevention. However, the findings revealed a significant association between knowledge and health belief ( $r=0.135, P<.05$ ), knowledge and behavior ( $r=0.116, P<.05$ ). Although the correlation coefficient showed only minimal positive association between those variables, the study found that a higher score of knowledge was correlated with more positive health belief and better behavior towards osteoporosis prevention (Table 4).



**Table 3. Knowledge, Health Belief, and Behavior of Osteoporosis Prevention**

Variable	Possible Range	Actual Range	Mean (SD)	Interpretation
Osteoporosis knowledge	0 - 100	0 - 75	37.8 (16.0)	Poor
Osteoporosis health belief	40 - 200	84 - 187	126.7 (12.9)	Moderate
Perceived susceptibility	4 - 20	4 - 20	10.2 (2.9)	Low
Perceived seriousness	6 - 30	6 - 30	18.7 (4.1)	Moderate
Perceived benefits of exercise	6 - 30	6 - 30	23.9 (3.4)	High
Perceived benefits of calcium intake	6 - 30	12 - 30	22.8 (2.9)	High
Perceived barriers to exercise	6 - 30	6 - 30	14.9 (4.1)	Low
Perceived barriers to calcium intake	6 - 30	6 - 30	14.9 (4.5)	Low
Health motivation	6 - 30	6 - 30	21.4 (3.3)	High
Osteoporosis preventive behavior	0 - 34	0 - 25	5.7 (3.5)	Low

Abbreviation: SD, standard deviation.

**Table 4. Pearson Product Moment Correlation of Knowledge, Health Belief, and Behavior for Osteoporosis Prevention**

Variable	Correlation	P Value*
Knowledge and health belief	0.135	< .05
Knowledge and behavior	0.116	< .05
Health belief and behavior	- 0.086	< .05

\* Significance for the test was determined at  $P < .05$ .

## Discussion

There were 400 female students of a public medical university participated in the study. Most of students studied in the 1st, 2nd, and 3rd year. Just over a quarter and nearly a fifth of participants were pharmacy and general nursing students, respectively. It was appropriate to the overview of the university that the number of students in pharmacy and nursing always accounted for major.

Osteoporosis knowledge of participants was limited with mean (SD) of 37.8 (16.0). The result was consistent with the study of Bilal et al<sup>8</sup> conducted on 400 female medical students in Pakistan. However, this finding was lower than that mean (SD) of 40.1 (2.18) and 45.0 (14.1) reported in the study conducted in Malaysia<sup>9</sup> and Saudi Arabia<sup>16</sup> which also used the osteoporosis

knowledge assessment tool to measure knowledge of participants, respectively. This difference might relate to the characteristics of participants. In this present study, most of participants were the 1st and 2nd year students. They had not yet studied about diseases as well as practiced in the clinical settings. Moreover, the large number of participants was pharmacy students who did not learn about pathology of diseases. These characteristics might explain for the poor osteoporosis knowledge found in this study.

With respect to osteoporosis consequences, the result of this study was similar to previous studies in Malaysia and Saudi Arabia reporting that female students understood the risk of bone fractures resulting from osteoporosis.<sup>9, 16</sup> In addition, the finding of the study regarding risk factors of osteoporosis was also congruent to previous studies in which approximately two-thirds of participants indicated older age as the risk factor.<sup>8, 16</sup> The other risk factors such as family history and smoking were also identified by nearly a half of participants in this study. This finding supported the study conducted among college females in Saudi Arabia.<sup>16</sup> Regarding osteoporosis prevention, approximately a half of participants in this study understood the effect of calcium supplements on preventing bone loss. This finding was equivalent to a Saudi Arabian study where 58.2% of young females answered correctly that calcium supplements alone



cannot reduce bone loss<sup>16</sup> or a study in Pakistan showing that 47.0% female medical students had understanding about dietary sources of calcium.<sup>8</sup>

Health belief towards osteoporosis has been commonly investigated in the literature. This study demonstrated the moderate level of health belief osteoporosis among female students. This result was comparable to the studies conducted in Malaysia and Jordan where participants had fair level of belief regarding osteoporosis.<sup>9,17</sup>

In the study, osteoporosis health belief was measured through 7 domains. The first domain was perceived susceptibility of osteoporosis. Participants showed low perceived susceptibility of osteoporosis with a mean (SD) of 10.2 (2.9). This result was consistent with the studies in Jordan,<sup>17</sup> Malaysia,<sup>9</sup> and Pakistan.<sup>8</sup> The possible reason explaining for the low perceived susceptibility was that osteoporosis is asymptomatic so that people did not notice the disease until they experienced its complications. Additionally, osteoporosis often occurs after menopause while participants were young people; thus, most of them did not believe that they have a risk of osteoporosis.

Comparing to perceived susceptibility, participants demonstrated higher perceived seriousness of osteoporosis. Previous studies also reported the similar findings that participants had higher perceived seriousness than perceived susceptibility.<sup>7-9,17</sup> It could be that female students were aware of the serious complications caused by osteoporosis which would make their life challenging if they suffered the disease.

Having adequate calcium daily intake and physical activity are necessary for osteoporosis prevention. In this study, participants reported the highest positive perception regarding benefits of exercise and optimal calcium intake that could prevent osteoporosis and bone fractures. This result supported the previous studies in which the majority of young females perceived that using calcium rich foods and vitamin D supplements can help in building bones as well as reducing problems from osteoporosis.<sup>8,9,17,18</sup> Furthermore, the previous studies also found that most of participants believed in the preventive impact of doing regular exercise towards osteoporosis.<sup>9,17,18</sup>

Besides perceived benefits, perceived barriers regarding calcium intake and regular exercise may also promote or hinder young women to carry out preventive behaviors towards osteoporosis. In this study, the mean of perceived barriers to exercise and calcium intake was 14.9, meaning that participants had a few barriers of calcium intake and exercise. This result was consistent with the study conducted at 2 universities in Pakistan where a small number of female students mentioned dislike and high cost of calcium rich foods as barriers.<sup>8</sup>

When asking about health motivation towards osteoporosis prevention, participants in this study showed their high motivation to find out health information, get health check-ups, and follow recommendations. This finding matched with a study conducted in Jordan, showing that 68.0% of female students had positive health motivation.<sup>17</sup> It was probable that female students were aware of the seriousness of osteoporosis; therefore, they had high motivation to do things in order to prevent this disease.

This present study revealed that participants had low osteoporosis preventive behavior with a mean (SD) of 5.7 (3.5). This finding was similar to various studies conducted in other countries in which behavior towards osteoporosis prevention was low among female students.<sup>7-9,11</sup>

Regarding calcium intake, over a half of participants in this study used dairy products and broccoli. This result was higher than that reported in the studies in Malaysia and Pakistan where approximately one-third of participants consumed dairy products<sup>11,19</sup> and 8.5% of young females involved vegetables and fruits in their diet.<sup>9</sup> This inconsistent finding could be explained by the difference of diet in other countries and Vietnam where the traditional diet usually consists of a lot of fresh fruits and vegetables. Additionally, in line with other studies,<sup>11,19</sup> a few participants in this study took calcium supplements. The reason could be that participants were worry of the risk of kidney stone or other consequences from taking calcium supplements that should be prescribed and taken cautiously.<sup>20</sup>

In term of physical activity, more than two-thirds of participants in this study usually did weight-bearing exercise or the forms related to jumping at least twice a week.



The finding was higher than some previous studies.<sup>8,9</sup> Only 12.0% of female students in Pakistan achieved the kind and duration of exercise as recommended.<sup>8</sup> Furthermore, the study in Malaysia found that 12.3% of medical students did outdoor activities in average of 15 minutes per day and 8.5% of them exercised approximately 20 minutes daily.<sup>9</sup> The potential reason was that female students in this study were given opportunities to participate regularly in several physical activities organized by the Youth Union that made them more active.

The study revealed that there was a significant correlation between knowledge and health belief regarding osteoporosis ( $r = 0.135$ ,  $P < .05$ ). The result was consistent with the previous studies.<sup>10,21</sup> Khan et al<sup>21</sup> informed a positive relationship between knowledge and health belief toward osteoporosis among 401 Malaysian students. The study conducted by Puttapitakpong et al<sup>10</sup> also found a significant correlation between attitude and knowledge of osteoporosis among Thai women aged 20 to 35 years.

Osteoporosis knowledge was important to implement preventive behavior and lack of knowledge was one of the barriers to perform health behavior.<sup>22</sup> This study showed that osteoporosis knowledge related to preventive behavior although this relationship was weak ( $r = 0.116$ ,  $P < .05$ ). According to the study conducted by Chan et al,<sup>19</sup> people who had a high osteoporosis knowledge showed a good perception of the advantages of protective behavior and were motivated to exercise and take calcium. However, the finding was inconsistent with the previous research in which it was not assured that people who had osteoporosis knowledge practiced prevention well.<sup>9</sup> This difference might explain for the inconsistent findings of the studies. Another explanation could be that high knowledge could not always be translated into preventive behavior of people.

Additionally, there was no relationship between health belief and behavior regarding osteoporosis in this study ( $P > .05$ ). This result was similar to the study conducted by Khan et al<sup>21</sup> which demonstrated that attitude

did not correlate to practice of weight-bearing activities. However, a study in Malaysia proved oppositely that positive attitude was necessary to perform osteoporosis prevention behavior.<sup>9</sup> The studies stated that health belief could change preventive behavior; thus, positive health belief is essential to better preventive behavior.<sup>9,23</sup> The difference between the present study and previous one may be related to participants. The previous study involved both genders while the present study recruited only female students.<sup>9</sup> Moreover, the difference in cultural and social features affecting behavior may also contribute to the dissimilar findings between the present and prior studies. Further studies should be conducted at more settings with diverse participants to obtain a broader understanding of osteoporosis prevention in female students in Vietnam.

This study had some limitations. Data were collected at only one public medical university; thus, this might limit the generalizability of the findings. Moreover, osteoporosis preventive behavior was measured through the self-reported scale which might produce recall bias and social desirability bias.

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## Conclusions

This study found that female healthcare students had moderate level of health belief but poor knowledge and low behavior regarding osteoporosis. Knowledge of participants was positively correlated with health belief and preventive behavior. However, there was no significant association between health belief and behavior towards osteoporosis prevention. Health education programs should be developed for young females to improve their osteoporosis knowledge, health belief, and preventive behavior.

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## Acknowledgments

The authors expressed appreciation to all participants and Da Nang University of Medical Technology and Pharmacy for supporting the study.





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## พฤติกรรมป้องกันภาวะกระดูกพรุนของนักศึกษาหญิงผู้ดูแลสุขภาพในดำนิง ประเทศเวียดนาม

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**บทนำ:** การป้องกันภาวะกระดูกพรุนในวัยหนุ่มสาวเป็นสิ่งสำคัญต่อการลดความเสี่ยงของโรคและภาวะแทรกซ้อนเมื่อมีอายุมากขึ้น การมีความรู้เรื่องภาวะกระดูกพรุนที่ถูกต้องและมีความเชื่อด้านสุขภาพเชิงบวก อาจนำไปสู่พฤติกรรมป้องกันการดูแลสุขภาพที่ดีขึ้น ซึ่งจะช่วยเสริมสร้างความแข็งแรงของกระดูกให้คงทนยาวนานที่สุด

**วัตถุประสงค์:** เพื่อประเมินความรู้ความเชื่อด้านสุขภาพและพฤติกรรมป้องกันภาวะกระดูกพรุนในนักศึกษาหญิงผู้ดูแลสุขภาพ

**วิธีการศึกษา:** การศึกษาเชิงพรรณนาภาคตัดขวาง โดยดำเนินการในมหาวิทยาลัยการแพทย์สาธารณสุขของรัฐในดำนิง ประเทศเวียดนาม กลุ่มตัวอย่าง จำนวน 400 คน ถูกคัดเลือกโดยใช้เทคนิคการสุ่มตัวอย่างแบบหลายขั้นตอน เก็บข้อมูลตั้งแต่เดือนพฤษภาคม พ.ศ. 2563 ถึงเดือนมิถุนายน พ.ศ. 2563 โดยใช้แบบสอบถามประกอบด้วย 4 ส่วน ได้แก่ แบบสอบถามข้อมูลส่วนบุคคล แบบประเมินความรู้ภาวะกระดูกพรุนแบบประเมินความเชื่อด้านสุขภาพเกี่ยวกับภาวะกระดูกพรุน และแบบประเมินพฤติกรรมออกกำลังกายและการได้รับแคลเซียม การวิเคราะห์ข้อมูลใช้สถิติเชิงพรรณนาและแบบทดสอบสหสัมพันธ์แบบเพียร์สัน

**ผลการศึกษา:** กลุ่มตัวอย่างมีความรู้เกี่ยวกับภาวะกระดูกพรุนในระดับน้อย (mean [SD], 37.8 [16.0]; range, 0 - 75) มีพฤติกรรมป้องกันการป้องกันภาวะกระดูกพรุนในระดับน้อย (mean [SD], 5.7 [3.5]; range, 0 - 25) มีความเชื่อด้านสุขภาพเกี่ยวกับภาวะกระดูกพรุนในระดับกลาง (mean [SD], 126.7 [12.9]; range, 84 - 187) และมีความสัมพันธ์ทางบวกอย่างมีนัยสำคัญระหว่างความรู้ความเชื่อด้านสุขภาพและพฤติกรรมป้องกันการป้องกันภาวะกระดูกพรุน ( $P < .05$ )

**สรุป:** พฤติกรรมการป้องกันภาวะกระดูกพรุนของนักศึกษาหญิงผู้ดูแลสุขภาพอยู่ในระดับต่ำ ควรพัฒนาโปรแกรมการศึกษาภาวะกระดูกพรุนสำหรับนักศึกษาหญิงผู้ดูแลสุขภาพเพื่อพัฒนาความรู้และความเชื่อด้านสุขภาพให้เหมาะสม ซึ่งจะนำไปสู่การมีพฤติกรรมป้องกันการป้องกันภาวะกระดูกพรุนที่ดีขึ้น

**คำสำคัญ:** พฤติกรรมการป้องกันภาวะกระดูกพรุน ความรู้เกี่ยวกับภาวะกระดูกพรุน ความเชื่อด้านสุขภาพ นักศึกษาหญิงผู้ดูแลสุขภาพ

Rama Med J: doi:10.33165/rmj.2021.44.3.249920

Received: March 22, 2021 Revised: July 8, 2021 Accepted: August 31, 2021

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