Original Article

The Application of the Health Belief Model (HBM) for the Assessing Preventive Behavior against COVID-19 among Nursing Students in Thailand

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Background: Coronavirus 2019 (COVID-19) emerged in China and spread quickly to other parts of the world. To prevent and eliminate widespread transmission of the disease, it is vital that everyone acts in compliance with precautions.

Objective: To assess the preventive health behavior against COVID-19 of nursing students in Thailand based on the health belief model (HBM).

Materials and Methods: A cross sectional survey was conducted among nursing students by using a questionnaire survey. The data of 620 nursing students were collected between July 6 and July 17, 2020. The significant differences among individual characteristics were tested by using independent t-test, analysis of variance (ANOVA), and Scheffe's post-hoc ANOVA difference test. To predict the factors influencing COVID-19 preventive behavior, univariate coefficient (β_u) and multivariate coefficient (β_m) were derived by using univariate and multivariate linear regression models.

Results: Preventive behaviors against COVID-19 were significantly affected by knowledge about COVID-19 (β=0.574, $p<0.01$), perceived severity of COVID-19 (β=0.494, $p<0.01$), perceived benefits of COVID-19 prevention (β=0.207, $p<0.05$), and cues to action (β=1.150, $p<0.01$) among sophomore (β=1.648, $p<0.01$), junior (β=2.764, $p<0.01$), and senior (β=2.794, $p<0.01$) nursing students.

Conclusion: Knowledge about COVID-19 and cues to action were found to be the most significant contributors to preventive behaviors against COVID-19. Therefore, knowledge of disease prevention behaviors for nursing student has to be practiced continuously to become habits that lead to long-term results.

Keywords: COVID-19; Preventive behavior; Nursing student

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On December 8, 2019, cases of pneumonia of unknown etiology were reported in Wuhan City, the capital of Hubei Province, China[1,2]. The first cases of the infection involved a history of visiting the seafood and wildlife markets in Wuhan, so the possibility of animal transmission could not be ruled out at that time[3]. Coronavirus 2019 (COVID-19) refers to an illness caused by a coronavirus virus strain[4]. The World Health Organization (WHO) declared a public health emergency and considered the outbreak an International Problematic Situation (PHEIC) on January 30, 2020 after the unidentified and widespread pneumonia was found in many countries. The who called on all countries to work together to prevent the rapid epidemic[4-6]. By the end of July 2020, 17,106,007 cases of COVID-19 and 668,910 deaths had been confirmed[7]. The common signs and symptoms of COVID-19 are fever, dry cough, weakness, muscle pain, shortness of breath, and difficulty breathing[8]. COVID-19 is rapidly transmitted through exposure and close contact within six feet of an infected person[9]. The transmission of COVID-19 is the same as influenza, so the disease spreads easily[5,10,11]. As a result, COVID-19 threatens the lives of many people[12].

In Thailand, infected local people were confirmed on January 31, 2020, and the number of cases

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continued to increase with the specific cause of the infection[13] remaining unknown. The government's response to the outbreak started with screening and monitoring of exposure. COVID-19 was and continues to be screened at international airports and hospitals among patients with a history of travel or exposure. In addition, outbreak groups were and continue to be investigated and tested[13]. The government issued a notice to the Thai people to focus on self-surveillance, especially hand washing and avoiding crowds or wearing masks when in public[14]. All public and retail establishments were ordered to lockdown in Bangkok and other provinces. The prime minister declared a state of emergency and announced a curfew from 10:00 p.m. to 4:00 a.m. with additional orders for the temporary suspension of liquor sales, urging people to delay cross-provincial travel[14].

In the early days of the COVID-19 pandemic, there was no vaccination or cure for the disease. Thus, treatment at the time was limited to symptomatic treatment and supportive care. In terms of prevention, people were encouraged to wash their hands regularly with soap and water for at least 20 seconds and avoid touching the eyes, nose, and mouth, particularly after removing a face mask. Wearing face masks are great ways for handling the disease and preventing transmission[11]. Therefore, personal behavior is the most important concept in health behavior in disease prevention. Nevertheless, these behaviors are influenced by personal values and beliefs[15].

The health belief model (HBM) used in the present study was proposed by Rosenstock et al[16]. HBM theory measures the factors that influence health behavior, including perceptions of vulnerability, perceived severity, perceived benefits, perceptions of barriers, cues to action, sense of self-efficacy, and behavioral health protection behaviors[16-18]. In general, the HBM's predictive power is high[15]. This model was designed to explain why some people do not practice self-defense behaviors, while others do. A person's protective behavior assumes that the behavior is influenced by the person's beliefs in an evaluation of perceived susceptibility, perceived severity, and belief in consequences. For this reason, individuals behave through the assessment of these factors[15]. HBM consider factors of self-efficacy/ perceived behavioral control and behavioral intentions are important determinants in behavioral change, particularly with vulnerable groups. Nevertheless, the findings are relevant but could also go further in identifying what would need to be done to shift community knowledge, attitudes, perceptions, and behavioral intentions toward protective behaviors from COVID-19.

Previous studies on COVID-19 have mostly investigated confirmed infections or risks for infection[6,19-21]. Some research has been conducted on knowledge and attitudes toward behavior against respiratory infections[22,23]. However, there is no research currently studying preventive behaviors against COVID-19 among nursing students who will be responsible for the care of future patients by using the constructs of the HBM.

To prevent and eliminate the spread of infectious diseases, it is important that everyone follow the precautions correctly. Thailand's Ministry of Public Health has included the concept of infection prevention in the basic undergraduate nursing course by effective practice and control of the infection[24]. In addition, when a nursing student becomes a clinical nurse, it is necessary to undertake a holistic infection control study that can assess the health status of infection prevention and control of hospital infections[24].

Therefore, it is necessary to promote COVID-19 preventive behaviors among nursing students and to assess the preventive health behavior predictors of COVID-19 based on the HBM among nursing students in Thailand. As nursing students work in an environment prone to infection, the results of the present study would be part of the guidelines for limiting access to newly infected people in the hospital environment. The present study attempted to provide useful information for people involved in policy-setting during this crisis to improve policies related to the outbreak of COVID-19.

Materials and Methods

Design and sample

A cross sectional survey was conducted among nursing students at Boromarajonani College of Nursing, Thailand, which is a nursing college affiliated with the Royal Institute, Ministry of Public Health. Satellite campuses of Boromarajonani College of Nursing are located in various areas throughout the country with 29 nursing colleges divided into six locations in the northern region, six locations in the northeastern region, twelve locations in the central region, and five locations in the southern region[25]. In the present study, the Boromarajonani College of Nursing in the central region was selected because it is a campus that can produce the number of nurses meeting the needs of as many hospitals as possible[26].

Therefore, the participants in the present research

were nursing students enrolled in nursing colleges in years 1 to 4 in the Boromarajonani College of Nursing within the central region of Thailand. According to the Royal National Institute of Education[25], the Boromarajonani College of Nursing campus in the central region has 5,872 nursing students. The sample size calculator application was applied to calculate the minimum sample size requirement[27]. Thus, a sample size of 620 participants was enrolled with a margin error of ±1%, a confidence interval of 99%, and a 50% response distribution. Inclusion criteria were 1) nursing student aged 18 years or older, 2) able to speak Thai, and 3) willing to participate in the present study. Students who fulfilled the above criteria were then informed about the purpose, benefit, and procedure of the present study. The researchers had the following steps to collect the samples:

Step 1: Select a nurse ornithology affiliated in the central region out of ten that comes out of five places with a random draw from Borommaratchachonnani College of Nursing in Ratchaburi, Nonthaburi Province, Suphanburi, Bangkok, and Saraburi.

Step 2: The researchers distributed the questionnaire online to nursing professors affiliated with each college to help forward it to the nursing students.

The data were collected between July 6 and July 17, 2020. During the COVID outbreak, social distance measures and limited mobility needed to be considered, so the data were collected online through a self-reported questionnaire using a Google form. Questionnaire links were distributed to nursing students via Facebook, WhatsApp, and LINE groups.

Measurement tool and variable

The present study used the online self-registered questionnaire developed by the Department of Disease Control[13]. Informed consent was presented on the first page of the online questionnaire to provide an opportunity for potential respondents to consent or refuse participation before moving on to other questions. In the present study, participants were given the freedom to fully participate in the study or withdraw at any time with no requirement to provide reasons. All the results of the present research would be used collectively for the purposes of the present research, and personal data would be kept confidential.

The self-registered questionnaire consisted of four sections. The first part recorded data related to individual information such as age, gender, educational attainment, number of family members, and monthly income. Gender was coded as 1 for female, and 0 for others. Age and family size were recorded on interval scales. The college years were categorized as freshman, sophomore, junior, and senior. The household income level was categorized as under 10,000, 10,001 to 20,000, 20,001 to 30,000, 30,001 to 40,000, and over 40,000 Baht.

In the second section, the questionnaire measured the level of respondents' knowledge about COVID-19. This questionnaire referred to the COVID-19 assessment guidelines published by the Department of Disease Control[13] with 14 questions on risk factors, modes of transmission, and prevention efforts. Each question was given a score of 1 if true and 0 if false.

The third part of the questionnaire measured the level of perception about COVID-19 based on the HBM framework. There were six perceptions in total, including five questions on perceived susceptibility, five questions on perceived severity, five questions on perceived benefits, five questions on perceived barriers, one question on self-efficacy, and two questions on cues to action. Respondents were asked to choose a response on a 5-point Likert scale of 1 to 5, where a scale of 1 showed strongly disagree and 5 indicated strongly agree.

The final section of the questionnaire assessed preventive behavior against COVID-19. This section contained 15 questions related to self-care and protection behaviors against COVID-19, such as (a) always wearing a mask to cover the nose and mouth when going out, (b) avoiding infected areas, (c) always washing hands thoroughly with water and soap, (d) changing face masks every day, (e) watching and observing yourself and following preventive measures. Each item was scored as 3 (regularly), 2 (often), 1 (sometimes), and 0 (not at all).

The structured questionnaire was tested for reliability and validity in addition to the clarity of each question. The questionnaire was tried in 30 persons with characteristics similar to the target population of the study[28]. The content was revised as necessary. Cronbach's alpha was 0.895, indicating that the questionnaire was reliable[28]. Content validity was assessed by five experts consisting of doctors, nurses, and public health practitioners. The test contained 51 items and had an acceptable measure of content validity. The result of the index of conjugate (IOC) analysis was 0.975 points.

The dependent variable was preventive practice against COVID-19, while the independent variables were socio-demographic factors, knowledge about COVID-19, perceived susceptibility, perceived severity, perceived benefits of prevention, perceived

barriers, sense of self-efficacy, and cues to action.

Data analysis

Univariate analysis was performed by using descriptive statistics such as frequency distribution, percentage, mean, median, and standard deviation to describe the independent variables and the dependent variable. The significant differences among individual characteristics were tested using independent t-test, analysis of variance (ANOVA), and Scheffe's post-hoc ANOVA difference test. To predict the factors influencing COVID-19 preventive behavior, univariate coefficient (β_U) and multivariate coefficient (β_m) were derived by using univariate and multivariate linear regression models, respectively. The auto-correlation assumptions of residuals were tested by using the Durbin-Watson statistic, while the multicollinearity assumption was tested by using the variance inflation factor (VIF) approach. The Stata, version 13 (StataCorp LP, College Station, TX, USA) for Windows was employed to analyze data, and p-values less than 0.05 were considered statistically significant.

Ethical approval

The present research was in accordance with the 1964 Helsinki Declaration and its subsequent amendments. The present research ethics have been approved by the Ethics Institute for Human Research, Ratchaburi College of Nursing, Ministry of Public Health, Reference No. BCNR 029/2563.

Results

Respondents' general characteristics and preventive behavior

The 620 respondents in the present study were more females at 94.68% than males at 5.32%. The average age of the respondents was 19.71 years within an age range of 18 to 23 years. Most of the present study participants were freshmen at 44.35%. The majority of the participants or 88.87% had monthly average income under 10,000 Baht (1 USD=30.61 Baht). The data showed that the majority or 76.61% had over six family members, and very few had only one or two members at 0.32% (Table 1).

Table 1. Preventive behavior against COVID-19 based on general characteristics (n=620)

Variables	n (%)
Sex	
Male	33 (5.32)
Female	587 (94.68)
Grade	
Freshman	275 (44.35)
Sophomore	156 (25.16)
Junior	133 (21.45)
Senior	56 (9.03)
Family income	
Under 10,000 Baht	551 (88.87)
10,001to 20,000 Baht	52 (8.39)
20,001 to 30,000 Baht	9 (1.45)
Over 30,000 Baht	8 (1.29)
Family members	
1 to 2 members	2 (0.32)
3 to 4 members	29 (4.68)
5 to 6 members	114 (18.39)
Over 6 members	475 (76.61)
Total	620 (100)

COVID-19=coronavirus disease starting in 2019

Table 2. Main variables in participant characteristics (n=620)

Variables	Means±SD	Min-max scores
Knowledge of COVID-19	12.24±1.47	1 to 14
Perceived susceptibility to COVID-19	21.28±2.99	10 to 25
Perceived severity of COVID-19	17.15±3.36	8 to 25
Perceived benefits of preventing COVID-19	21.89±2.99	14 to 25
Perceived barriers to preventing COVID-19	14.32±5.65	5 to 25
Sense of self-efficacy in preventing COVID-19	2.65±1.41	1 to 5
Cues to action	8.84±1.45	2 to 10
Preventive behavior against COVID-19	36.40±6.57	14 to 45

COVID-19=coronavirus disease starting in 2019; SD=standard deviation

Characteristics of COVID-19-related knowledge, perceived behavior, sense of self-efficacy, cues to action, and preventive behavior

The participants' mean scores were 12.24 of 14 on knowledge about COVID-19, 21.28 of 25 on perceived susceptibility to COVID-19, 17.15 of 25 on perceived severity of COVID-19, 21.89 of 25 on perceived of benefit toward COVID-19, 14.32 of 25 on perceived of barrier toward COVID-19, 2.65 of 5 on sense of self-efficacy in preventing COVID-19, 2.65 of 5 on cues to action, and 2.65 of 5 on preventive behavior against COVID-19 (Table 2).

Correlation analysis between preventive behavior against COVID-19 and independent variables

Preventive behavior against COVID-19 among the nursing students was statistically and significantly correlated with the participants' level of knowledge about COVID-19 ($r=0.122$, $p<0.01$). Additionally,

Table 3. Pearson's correlation coefficient between the main variables (n=620)

	1	2	3	4	5	6	7	8
1. Knowledge about COVID-19	1							
2. Perceived susceptibility to COVID-19	0.253**	1						
3. Perceived severity of COVID-19	–0.103*	0.290**	1					
4. Perceived benefits of preventing COVID-19	0.267**	0.569**	0.188**	1				
5. Perceived barriers to preventing COVID-19	–0.186**	0.081*	0.505**	-0.041	1			
6. Sense of self-efficacy in preventing COVID-19	–0.050	0.027	0.046	0.021	0.013	1		
7. Cues to action	0.134**	0.392**	0.140**	0.460**	–0.045	0.041	1	
8. Preventive behavior against COVID-19	0.122**	0.207**	0.331**	0.229**	0.191**	–0.008	0.294**	1

COVID-19=coronavirus disease starting in 2019

* p<0.05, ** p<0.01

the perception of susceptibility to and severity of COVID-19 were presented with correlation coefficients of 0.207 and 0.331 with p<0.01 for all pairs. (p<0.01). Perceived benefits COVID-19 and barriers to preventing COVID-19 showed correlation coefficients of 0.229 and 0.191 (p<0.01), while the correlation coefficient of cues to action was equal to 0.294 (p<0.01) (Table 3).

Factors influencing preventive behavior against COVID-19

The results of the multiple linear regressions analysis were divided into three models. Model 1 considered the impact of the demographic variables on preventive behavior against COVID-19. The authors later added variables related to the HBM to Model 2 to predict the influence of these variables on self-defense behaviors against COVID-19 and predict whether these variables could shift the effects of demographic variables into preventive behavior against COVID-19 (Model 2). Finally, the authors added a cue to action variable to Model 3 to determine whether advice from others or input from close contacts, media, or healthcare providers could alter the impact of previous variables on self-defense behavior against COVID-19.

The results of the analysis of Model 1 showed that only year of study as freshman, sophomore, junior, or senior, could affect COVID-19 preventive behavior and was able to explain 6.4% of the variance in preventive behavior against COVID-19. For Model 2, year of study, knowledge about COVID-19, perceived severity of COVID-19, and perceived of benefits of preventing COVID-19 affected preventive behavior against COVID-19. In addition, the variable could explain 20.8% of the variance in COVID-19 preventive behavior (Table 4).

After controlling all variables in Model 3, it was found that preventive behaviors against COVID-19 were influenced by knowledge about COVID-19 (β=0.574, p<0.01), perceived severity of COVID-19 (β=0.494, p<0.01), perceived benefits of preventing COVID-19 (β=0.207, p<0.05), and cues to action (β=1.150, p<0.01). Preventive behavior against COVID-19 was also related to sophomore (β=1.648, p<0.01), junior (β=2.764, p<0.01), and senior (β=2.794, p<0.01) nursing students. In addition, these variables predicted 25.6% of the variance in preventive behavior against COVID-19 (Table 4).

In addition, the Durbin-Watson test results were within a range of 1,891 to 1,919, which showed no auto-correlation symptoms, while the tolerance test results for multicollinearity were 0.018 to 0.972, which was less than one, and the variance inflation factor was 1.03 to 1.64, which was lower than the reference level of 10. Hence, the regression model has no multicollinearity problems.

Discussion

COVID-19 is a recently emerging contagious disease that has triggered significant threats to public health. At the time this present study was conducted, no COVID-19 vaccines were available. Therefore, preventive measures played and continue to play an important part in helping reduce levels of infection and controlling the spread of the disease. The results showed that the majority of the subjects had a high level of COVID-19 knowledge with an average score of 87.42% of total knowledge. This finding is in accordance with the previous studies[29,30]. The results were not surprising, and the sample scored highly on knowledge questions about COVID 19. The time period in which questionnaires were distributed might have been a determining factor. The Ministry of Public Health of Thailand has organized campaigns on intensive awareness that are communicated through their website, television, and various social media.

Table 4. Multivariate analysis predicting preventive behavior against COVID-19 (n=620)

Variables	Univariate model (95% CI)	Coefficient beta (95% CI)		
		Model 1	Model 2	Model 3
Sex	0.487 (−1.8233 to 2.796)	−0.187 (−2.470 to 2.096)	−0.575 (−2.695 to 1.545)	−0.577 (−2.634 to 1.480)
Age	0.348 (0.119 to 0.578)**	0.195 (−0.0853 to 0.474)	0.183 (−0.0792 to 0.445)	0.245 (−0.00986 to 0.501)
Grade				
Freshman (ref.)			0.000	0.000
Sophomore	2.420 (1.161 to 3.680)**	2.159 (0.847 to 3.471)*	1.765 (0.538 to 2.991)*	1.648 (0.457 to 2.838)*
Junior	3.686 (2.359 to 5.013)**	3.354 (1.903 to 4.805)**	2.687 (1.328 to 4.046)**	2.764 (1.445 to 4.083)**
Senior	3.023 (1.180 to 4.865)**	2.713 (0.797 to 4.628)*	2.879 (1.088 to 4.670)*	2.794 (1.056 to 4.532)*
Family income				
Under 10,000 Baht (ref.)			0.000	0.000
10,001 to 20,000 Baht	0.182 (−1.693 to 2.058)	−0.66 (−2.530 to 1.210)	−1.507 (−3.248 to 0.233)	−1.531 (−3.220 to 0.158)
20,001 to 30,000 Baht	−1.636 (−5.980 to 2.708)	−1.928 (−6.277 to 2.421)	−2.135 (−6.197 to 1.926)	−1.914 (−5.855 to 2.028)
Over 30,000 Baht	−0.414 (−5.017 to 4.190)	−2.308 (−7.436 to 2.820)	−2.662 (−7.443 to 2.120)	−3.302 (−7.946 to 1.342)
Immediate family members				
1 to 2 members (ref.)			0.000	0.000
3 to 4 members	6.276 (−3.154 to 15.706)	4.333 (−4.901 to 13.57)	4.829 (−3.753 to 13.41)	6.396 (−1.945 to 14.74)
5 to 6 members	4.377 (−4.823 to 13.578)	2.874 (−6.129 to 11.88)	2.581 (−5.762 to 10.92)	3.592 (−4.510 to 11.69)
Over 6 members	4.309 (−4.831 to 13.450)	2.649 (−6.299 to 11.60)	2.42 (−5.871 to 10.71)	3.453 (−4.599 to 11.51)
Knowledge about COVID-19	0.547 (0.196 to 0.898)**		0.566 (0.216 to 0.917)*	0.574 (0.235 to 0.914)**
Perceived of susceptibility to COVID-19	0.454 (0.284 to 0.623)**		−0.0576 (−0.258 to 0.143)	−0.173 (−0.370 to 0.0252)
Perceived of severity of COVID-19	0.647 (0.501 to 0.793)**		0.527 (0.354 to 0.699)**	0.494 (0.326 to 0.661)**
Perceived of benefits of preventing COVID-19	0.504 (0.335 to 0.673)**		0.383 (0.185 to 0.581)**	0.207 (0.00663 to 0.407)*
Perceived barriers to preventing COVID-19	0.222 (0.123 to 0.312)**		0.0742 (−0.0253 to 0.174)	0.097 (0.000543 to 0.194)
Sense of self-efficacy against COVID-19	−0.040 (−0.408 to 0.329)		−0.151 (−0.488 to 0.186)	−0.191 (−0.518 to 0.136)
Cues to action	1.335 (0.992 to 0.329)**			1.150 (0.785 to 1.515)**
_cons		28.78 (17.40 to 40.15)**	6.483 (−5.183 to 18.15)	0.602 (−10.87 to 12.08)
R-square		0.064	0.208	0.256
Adjusted R-square		0.047	0.186	0.233
F-change		3.770	9.300	11.460

COVID-19=coronavirus disease starting in 2019; CI=confidence interval

* p<0.05, ** p<0.01

The Ministry of Public Health is also collaborating with the public and media, particularly through social media platforms[7]. People can gain knowledge about diseases and infections through television, news, and other media platforms to take care of themselves and their families. The present finding emphasizes the need to keep reinforcing the mass media information as a facility for preventing the spread of the virus[30].

Moreover, knowledge about COVID-19 affected preventive practice against COVID-19 according to the HBM statement that a person's behavior depends on a number of factors, of which knowledge about the disease is one of the fundamental factors affecting perception and performance[15]. Perceived severity and perceived benefits of prevention also have impact on behavior and practice. Once a person is aware of the severity of a disease and the benefits of preventive behavior, the person will be more likely to follow preventive recommendations. Numerous studies have shown that disease perception is positively correlated with preventive behaviors. The findings of a study by Qian et al[31] in China indicate that perceived severity is an important predictor in preventing the spread of COVID-19. Similarly, Li et al[32] stated that higher perceived severity of the disease will increase caution in preventing COVID-19.

In addition, cues to action were found to be significant in preventive practice against COVID-19. Analysis showed that information from close acquaintances, media, or personnel involved in promoting health play a key role and contribute significantly to health-related behaviors. Therefore, the findings showed that the HBM can be implemented to study preventive behavior correlated with contagious diseases, particularly new diseases with inadequate information.

Limitation

The present study encountered limitations, including 1) The data were collected digitally due to situations requiring social distancing to prevent the spread of the disease. Therefore, sampling could not be performed to identify individual persons. 2) Bias might have occurred in reporting due to the self-reported questionnaire in this study. 3) None of the participants had experienced a "real life" situation in relation to the emergency of the global pandemic in the present study, 4) The timeline of the present study was conducted in the first stage of the COVID-19 pandemic, which might have affected the results.

Conclusion

The present study is the first study to investigate a HBM for the COVID-19 outbreak among nursing students in Thailand. The findings suggest that nursing students' knowledge and advice from the people close to them are correlated with good COVID-19 preventive practices. Knowledge about this disease can be considered the turning point for any behavior. By providing an understanding of the causes and sources of transmission of the disease, health education increases the likelihood that people will become more aware of the spread of infectious diseases, thereby leading to effective prevention to reduce the transmission.

What is already known on this topic?

Health belief patterns are used to describe and predict health behaviors as well as people perception, and motivation. For a person to avoid the disease, there must be a belief that their risk of disease is severe and affects their lifestyle, and the practice will be effective in reducing their risk of the disease or reducing the severity of the disease.

What this study adds?

This study explored and identified factors affecting COVID-19 preventive behavior based on demographic factor and factor related to HBM. Knowledge of disease prevention resulted in nursing students to have self-defense behaviors among nursing students in the third and fourth year who had a high level of knowledge. Getting information about COVID-19 from agencies, communities, and schools (cue to action) is crucial in encouraging students' self-defense behaviors.

Conflicts of interest

The authors declare that there are no financial or other conflicts of interest.

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