Original Article

Barriers to adopting evidence-based practice: A cross-sectional study among undergraduate nursing students in Vietnam

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ABSTRACT

Background & Aim: As the future nursing workforce, evidence-based practice is one of the key competencies for undergraduate nursing students in delivering safe and quality care. While plenty of studies investigate nurses' evidence-based practice, understanding this topic is limited among nursing students. Thus, this study aimed to identify barriers and associated factors to adopting evidence-based practice among undergraduate nursing students in Vietnam.

Methods & Materials: A cross-sectional descriptive study was conducted on 395 undergraduate nursing students who were conveniently selected at a public university in Central Vietnam from March to May 2022. A questionnaire was administered to collect information about general characteristics and barriers to implementing evidence-based practice regarding knowledge, practice, authority, setting, and research utilization. Data were analyzed using SPSS 20.0 with descriptive statistics, independent T-test, one-way analysis of variance, and Pearson's correlation coefficients.

Results: Among 395 participants, most of them faced barriers regarding knowledge (91.9%), practice (96.2%), authority (89.1%), clinical setting (92.2%), and research utilization (96.2%). The most mentioned barriers were related to research utilization and clinical settings. Barriers to adopting evidence-based practice were significantly associated with a level of seeking information about research/scientific evidence and a level of participating in research/implementing evidence-based practice (p<.05). Moreover, knowledge barriers were related to age, school year, and sources of data for searching (p<.05).

Conclusion: Undergraduate nursing students have faced many barriers when adopting scientific evidence into clinical practice. Supporting students in addressing these barriers is necessary to enhance their evidence-based practice competency.

Introduction

Evidence-based practice (EBP) has been defined as a process of reviewing, analyzing, and translating the most up-to-date scientific evidence into practice (1). It refers to the combination of the best research evidence with the clinical expertise of healthcare providers and patient preferences to make clinical decisions (2). EBP is the cornerstone of clinical practice because applying evidence to the daily practice of healthcare providers has resulted in improved patient outcomes and return on investment for healthcare systems (1,3). Implementation of EBP is especially necessary for nurses to build their body of knowledge, standardize nursing practice, and enhance the quality of care (4).

As nursing students are the future of the nursing workforce, EBP is one of the core competencies that must be included and cultivated in nursing education. Nursing students need to be equipped with sufficient EBP knowledge, attitudes, and skills so that they can utilize EBP in their future practice (5). Several educational strategies have been adopted for teaching EBP to undergraduate health students, including nursing students (6). However, applying scientific evidence to the clinical

practice of nursing students is still limited (5,7). The recent literature reported a low percentage of nursing students who actually implemented EBP (5,7,8). Several factors were found as barriers to the adoption of EBP among nursing students; among these, lack of time during the internship is a major barrier (9, 10). Other barriers include a lack of knowledge and skills about scientific research, limited access to technology, the slow publication of evidence, and language barriers (8,9). Additionally, lack of support and example from others and having no authority in changing care procedures also inhibit students from applying EBP in clinical settings (8-10).

The clinical setting in which nurses work and interact with others also plays a role in shaping nurses' evidence-based practice (11). In Vietnam, the implementation of EBP among nurses was achieved at a moderate level (12). Most nurses rely on informal information or personal clinical experience to make decisions for patient care (12,13). EBP is one of the twenty-five core competency standards required for Vietnamese nurses, therefore, nursing education institutions have consequently integrated EBP into nursing programs with the aim of cultivating and developing EBP competency for undergraduate students (14). However, understanding of adopting EBP among undergraduate nursing students is limited while there are many studies conducted on nurses. To address this gap, the current study was conducted to assess barriers to adopting EBP and identify some factors associated with the barriers among undergraduate nursing students in Vietnam.

Methods

A cross-sectional descriptive design was used for the current study. This study was carried out at one public medical university in Central Vietnam from March to May 2022. Undergraduate nursing education is one of the key programs of the university, with approximately 200 students enrolling per year.

The inclusion criteria were full-time nursing students who completed the Nursing Research and Evidence-Based Practice course and used to practice in clinical settings. The exclusion criteria were students who were absent at the time of distributing the questionnaire.

Using the formula for cross-sectional studies, the calculated sample size was 384 individuals (15). A total of 395 nursing students satisfied the inclusion criteria. Thus, to eliminate the anticipated non-response rate, all students were recruited. The total sample size was 395 nursing students who were conveniently selected based on inclusion criteria.

Data were collected using a questionnaire including two parts. The first part is questions about the general characteristics of the participants, including age, gender, school year, level of seeking information about research/scientific evidence, sources of data for searching, and level of participation in research/implementing EBP.

The second part consists of 27 items modified from the Barrier of Evidence-based Practice Questionnaire which was previously constructed for nurses (16). After obtaining permission from the developer, the scale was translated from English into Vietnamese language. The translation process used a back translation technique, a committee approach, and pretesting (17). The first translator, who was a nursing lecturer with a master's degree, translated the original scale from English to Vietnamese. After that, the two researchers (the 2nd and 3rd authors) worked together as a committee of experts to review the Vietnamese version. The researchers adjusted some words for nursing students to use. Next, the second translator, who was also a nursing lecturer with a doctoral degree, translated the Vietnamese version back to English. Then, the two researchers compared both the back-translated English and the original versions to check for any inconsistencies in the content. No modification was made to the Vietnamese version. After the translation was completed, the content validity of the Vietnamese version was examined by a panel of three experts who had a master's degree in nursing, including two nursing lecturers and one nursing manager at the hospital. The three experts commented that two items in the authority subscale have similar meanings, which should be combined into one. The experts also suggested adding a new item in the authority subscale and modifying two other items in the setting and research utilization subscales. The Vietnamese version was then

modified by the researchers based on suggestions from the experts. The three experts re-examined the content validity of the modified Vietnamese version using a 4-point Likert scale from (1) not relevant to (4) very relevant. The content validity index for items (I-CVIs) was 1.0. The reliability of the Vietnamese version was then examined by a pilot study with 30 nursing students from another nursing school. The Cronbach's alpha coefficient was found at .94.

The scale has five subscales, including knowledge (5 items), practice (5 items), authority (4 items), setting (6 items), and research utilization (7 items). All items were responded to on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Knowledge was categorized as satisfactory (total score ≤ 10) and unsatisfactory (total score >10). As regards to practice subscale, it was classified as utilized in practice (total score ≤ 9) and unutilized in practice (total score>9). Similarly, authority was considered as support (total score≤8) or not support (total score >8). Regarding the setting, it was classified as suitable (total score≤ 14) and unsuitable (total score >14). Finally, research utilization was seen as useful (total score ≤16) or not useful (total score >16) (16).

Data collection was conducted between March and May 2022. The principal investigator, who was a fourth-year student, met the participants in the classroom when they just finished their theory class. All participants were detailed provided information on the study. Informed consent was obtained from the participants before they were given the questionnaire. The participants filled out the questionnaire directly, which took approximately 10 minutes, and then returned it to the investigator upon completion.

After collecting the questionnaire, it was re-checked to remove invalid ones. Data were entered and processed on SPSS 20.0. Descriptive statistics were used to describe the general characteristics of the participants and barriers to EBP. In addition, the histogram of five subscales of barriers was inspected to examine its normality. As all histograms showed a normal distribution, independent t-test and one-way ANOVA were used to compare the differences in barriers between the groups of participants. Moreover, Pearson's correlation coefficients were computed to examine the relationship between the age of the participants and the five subscales of barriers. The results were considered significant if the p-value was less than .05.

This study was approved by the Ethics Committee in Biomedical Research, Da Nang University of Medical Technology and Pharmacy on March 2, 2022 (Reference #118/BB-HĐĐĐ). The information about the study was provided to all the participants, including confidentiality and the right to refuse or withdraw from the study. Informed consents were obtained from the participants before distributing the questionnaire.

Results

The average age of the participants was 21.7 years. Among 395 nursing students who participated in the study, most (92.9%) were female, and 65.1% were in the 4th year. More than half (54.4%) occasionally sought information about research/scientific evidence. The most data sources used for searching evidence were scientific research reports (52.2%) followed by books (40.3%). Besides, 46.6% of the participants occasionally participated in research or implemented EBP (Table 1).

Among five subscales of barriers, the highest mean score was from research utilization (3.60±.80), followed by setting (3.50±.87). The result shows that knowledge, practice, authority, setting, and research utilization were seen as barriers to applying EBP. Specifically, 91.9% of participants were unsatisfied with their knowledge, 96.2% did not utilize research in practice, and 89.1% thought that authority do not support them to apply EBP. In addition, 92.2% of students supposed that the clinical setting is not suitable for adopting EBP, and 96.2% assessed research utilization as not useful (Table 2).

Table 1. General characteristic of the participants (n=395)

Characteristic	N	%
Age (year, mean±standard deviation): 21.7 ± .52		
Gender		
Female	367	92.9
Male	28	7.1
School year		
3rd year	138	34.9
4th year	257	65.1
Level of seeking information about research/scientific evidence		
Often (several times/week)	14	3.5
Regular (weekly)	61	15.4
Occasionally (1-2 times/month)	215	54.4
Rarely (less than once a month)	98	24.8
Never	7	1.9
Sources of data for searching		
Scientific research reports (articles, posters, etc.)	206	52.2
Books	159	40.3
Reference books	21	5.3
Internet	9	2.2
Level of participating in research/implementing EBP		
Regular (weekly)	33	8.4
Occasionally (monthly)	184	46.6
Rarely (a few times/year)	134	33.9
Never	44	11.1

Table 2. Total and average scores of barriers to evidence-based practice of the participants (n=395)

Barriers	N (%)	Total score		Average score
		Mean ± SD	Range	
Barriers related to knowledge		15.46 ± 3.42	5 − 25	3.10 ± .96
Satisfactory	32 (8.1)			
Unsatisfactory	363 (91.9)			
Barriers related to the practice		15.58 ± 3.63	5 − 25	3.10 ± 1.0
Utilized in practice	15 (3.8)			
Unutilized in practice	380 (96.2)			
Barriers related to authority		12.94 ± 3.34	4 − 20	3.20 ± 1.0
Support	43 (10.9)			
Not support	352 (89.1)			
Barriers related to setting		20.99 ± 4.25	6 − 30	3.50 ± .87
Suitable	31 (7.8)			
Unsuitable	364 (92.2)			
Barriers related to research utilization		25.33 ± 4.53	7 − 35	3.60 ± .80
Useful	15 (3.8)			
Not useful	380 (96.2)			

Barriers to EBP of nursing students were detailed and presented in Table 3. Out of the top-ranked barriers, most items were from the subscale of research utilization and setting. The findings indicate that the barriers perceived by the participants are mostly related to research utilization and setting.

There were significant differences between the school year, sources of data for searching, and the score of knowledge barriers. The correlation between the age of the participants and knowledge barriers was also significant, meaning that younger nursing students faced more knowledge barriers than older ones (r= -.173; p<.001). In addition, the results show significant differences in scores of all five barrier subscales with a level of seeking information about research/scientific evidence

and participating in research/implementing EBP (p<.001). In other words, nursing students who sought less information about research/scientific evidence or participated less in research/implemented EBP met more barriers to applying EBP than others (Table 4).

Table 3. Barriers to adopting the evidence-based practice of the participants (n=395)

Barriers	Mean ± SD	Rank
Barriers related to knowledge		
Not able to determine the validity of research and critically appraise	3.4±.9	11
Uncertainty in changing new ideas/trusting the research findings	3.4±.9	11
Unaware of the types of research and information resources for searching	3.1±1.0	16
Not confident when discussing with others about research	3.0±1.0	18
Not having access to the research reports	2.6±1.0	19
Barriers related to the practice		
Not having time to read research reports	3.5±.9	8
Not having research skills	3.3±1.0	13
The research is not relevant to nursing practice	3.2±1.0	14
The value of research for practice is limited	3.1±1.1	15
Not having computer skills	2.6±1.0	19
Barriers related to authority		
Limited support and guidance from nursing educators in applying EBP during internships	3.4±1.0	10
Research results are not generalizable to the place of practice	3.2±1.0	14
Healthcare staff does not support students in implementing EBP	3.2±1.0	14
Not having enough authority to change patient care procedures	3.0±1.1	17
Barriers related to setting		
Applying EBP is not yet common at the place of practice	3.7±.9	3
Not having insufficient time to implement new ideas	3.6±.8	6
Access to research evidence is poor	3.5±.9	8
There is no documented need to change the practice	3.5±.9	8
The facilities are inadequate for implementing EBP	3.5±.8	9
Not support or incentives for clinical practice development	3.4±.9	11
Barriers related to research utilization		
Research reports/articles are not clearly written	3.8±1.0	1
Research reports are published in a foreign language	3.8±.8	2
Statistical analyses are not understandable	3.7±.8	4
The research has not been replicated, and is not clear for implications	3.6±.9	5
Research reports/articles are not readily available and not published	3.5±1.0	7
The conclusions drawn from the research are not justified	3.4±1.0	10
The research has methodological inadequacies	3.4±.8	12

Table 4. Differences between nursing students' characteristics and barriers to adopting evidence-based practice (n=395)

Characteristics	Barriers related to knowledge	Barriers related to the practice	Barriers related to authority	Barriers related to setting	Barriers related to research utilization
Age	r= -.173; p< .001	r= -.023; p= .654	r= -.041; p= .419	r= .032; p= .531	r= .013; p = .797
Gender	p= .366	p= .927	p = .491	p = .205	p = .307
Male	3.0 ± .6	3.1 ± .5	3.3 ± .8	3.7 ± .5	3.7 ± .5
Female	3.1 ± .7	3.1 ± .7	3.2 ± .9	3.5 ± .7	3.6 ± .7
School year	p= .006	p = .916	p = .650	p = .606	p= .347
3rd	3.2 ± .7	3.1 ± .8	3.2 ± 1.0	3.5 ± .7	3.6 ± .7
4th	3.0 ± .7	3.1 ± .7	3.1 ± .9	3.5 ± .7	3.6 ± .6
Level of seeking information about research/scientific evidence	p< .001	p< .001	p< .001	p< .001	p< .001
Often	2.8 ± 1.0	2.7 ± .8	2.6 ± 1.3	3.1 ± 1.0	3.7 ± .7
Regular	2.8 ± .8	2.8 ± .7	2.9 ± .9	3.3 ± .7	3.4 ± .7
Occasionally	3.0 ± .6	3.1 ± .7	3.1 ± .9	3.5 ± .7	3.6 ± .6
Rarely	3.4 ± .6	3.5 ± .6	3.5 ± .9	3.7 ± .6	3.8 ± .6
Never	4.2 ± .9	3.8 ± .4	4.0 ± 1.0	4.3 ± .8	4.2 ± .9
Sources of data for searching	p= .022	p = .492	p = .845	p = .225	p = .658
Books	3.2 ± .7	3.1 ± .7	3.1 ± .9	3.5 ± .7	3.6 ± .7
Reference books	3.0 ± .5	3.0 ± .6	3.2 ± .7	3.2 ± .6	3.5 ± .6
Scientific research reports	3.0 ± .7	3.1 ± .7	3.2 ± 1.0	3.5 ± .7	3.7 ± .6
Internet	3.5 ± 1.2	3.4 ± 1.2	3.4 ± 1.2	3.6 ± 1.0	3.7 ± 1.0
Level of participating in research/implementing EBP	p< .001	p< .001	p< .001	p< .001	p< .001
Regular	2.8 ± 1.0	2.6 ± .8	2.6 ± 1.0	3.2 ± .9	3.4 ± .7
Occasionally	3.0 ± .7	3.0 ± .7	3.0 ± .9	3.4 ± .7	3.5 ± .6
Rarely	3.1 ± .6	3.2 ± .7	3.3 ± .9	3.6 ± .6	3.7 ± .6
Never	3.5 ± .7	3.8 ± .6	3.9 ± .9	3.9 ± .6	3.9 ± .6

Discussion

Evidence-based practice is one of the core competencies that nursing students have to acquire upon graduation (5). Teaching EBP has been incorporated into undergraduate nursing curricula with the target of promoting EBP competency so that students can effectively apply EBP to guide their clinical practice (6). Adopting EBP for nursing students, however, has faced many challenges because of plenty of barriers (7-10). This revelation is similar to our findings in that the majority of the participants had barriers when implementing EBP. Notably, our participants were confronted with more barriers related to research utilization and clinical settings than other groups of barriers. This finding is consistent with some prior studies on nurses and nursing students. A systematic review by Shayan and colleagues reported barriers related to setting or organization that hindered nurses from implementing EBP, such as inadequate resources and facilities, lack of support, and overload of patient care (18). In another study conducted in four selected countries, barriers related to setting or organization were frequently mentioned by nursing students (10). The finding suggests that collaboration between nursing educators and hospital managers is crucial to address barriers related to clinical settings in order to facilitate and promote students' translation of scientific evidence into care practice.

In the current study, the most mentioned barriers are "Research reports/articles are not clearly written" and "Research reports are published in a foreign language." Previous studies in Vietnam also mentioned poor English skills as an important barrier that prevented nurses from finding and reading relevant articles (12,19). Indeed, references in Vietnamese are restricted, while most research, especially high-quality articles, is published in English. Reading and using publications in a foreign language rather than a native language is seen as a big obstacle for nursing students. In addition, in Vietnam, the ability to obtain data sources, particularly paid databases, is a challenge. The language barriers, combined with the lack of availability of information sources, impede students from reaching valuable research articles or reports from which they can retrieve evidence for clinical application.

Additionally, another commonly rated barrier is "Applying EBP is not yet common at the place of practice." In fact, although EBP has been much discussed in the last decade in Vietnam, it still seems obscure and confusing in the nursing profession. Previous studies indicated that EBP practice has remained at a moderate level and passive among Vietnamese nurses (12,13). Moreover, the majority of nurses had negative attitudes towards EBP (12). Obviously, when EBP is not yet common in the clinical setting, adopting research evidence in patient care is also a challenge for students.

In this study, time constraints are another major barrier to EBP among undergraduate nursing students when the items "Not having time to read research reports" and "Not having insufficient time to implement new ideas" were commonly rated by the participants. This result is consistent with the findings in other studies on nursing students (8,10). Time has also been identified as a main barrier for nurses when implementing EBP. In a systematic review by Shayan and colleagues, the lack of time to read research results, carry out research, and conduct new ideas into practice was the most commonly mentioned barrier to nurses' EBP (18). Several researchers are in agreement that time constraints may be attributed to work overload. Regarding nursing students, the heavy academic load is sometimes a burden that makes students not have time for the application of EBP (20). Time is one of the significant conditions to implement EBP because searching for and generating scientific evidence is time-consuming. The findings highlight the need for nursing students to be provided with time management skills to balance the different demands of the study, including implementing EBP.

In relation to the role of nursing educators, the participants also highly rated the item "Limited support and guidance from nursing educators in applying EBP during

internships" as a barrier. A previous study conducted in South Africa reported similar findings in which approximately a quarter of the third- and fourth-year nursing students mentioned the lack of role models from lecturers as the main barrier to their implementation of EBP (8). Nursing educators have a main role in mentoring students to develop EBP skills, access research evidence, and participate in research activities. In the clinical setting, support from nursing educators is necessary to help students overcome barriers related to setting and adopt scientific findings to their daily practice.

Our findings show that there is a statistically significant relationship between age, school year, and barriers related to knowledge, meaning that those who were in a higher academic year and older ages had lower scores corresponding to fewer knowledge barriers. In our study, most of the older students were 4th-year students who had more clinical practical time compared to 3rd-year students. Since using evidence in patient care is one of the criteria for evaluating students' performance in clinical practice, it requires students to search and criticize scientific reports in order to obtain evidence for application. This process might help students gain more understanding regarding the importance of EBP and scientific research. Thus, it can be argued that having more practical experience in the clinical setting may improve students' knowledge of EBP. This is further confirmed by another finding from our study in which the school year was significantly associated with the score of knowledge barriers; specifically, the 4th year nursing students face fewer barriers related to knowledge than 3rd year ones.

Apart from age and school year, sources of data for searching were also significantly associated with the score of knowledge barriers (p=.022). The finding shows that nursing students who used the internet to search for evidence faced more knowledge barriers than other groups of students. In contrast, those who searched for evidence from scientific research reports such as articles and posters had fewer barriers related to knowledge. Along with the stunning increase of the internet and its usage, there is too much information from the internet;

thus, judging the quality and credibility of online information is time-consuming and difficult (21). Choosing the best evidence to apply for patient care is becoming challenging for students. This finding suggests the pivotal role of nursing education institutions in supporting students in accessing reliable information by linking digital libraries where students can access library databases.

Most importantly, the current study found a significant relationship between the level of seeking information about research/scientific evidence, level of participating in research/implementing EBP, and score of all five subscales of barriers (p<.001). This finding indicates that nursing students having less frequency of searching scientific information or participating in research encountered more barriers to applying EBP than others. One possible explanation for this result could be that seeking scientific information or being involved in research activities may enhance students' knowledge about EBP and research skills. Moreover, those who have more frequency of searching for research information will have more language vocabulary when reading scientific articles. Thus, understanding the research findings, especially studies published in a foreign language, becomes easier. In a prior study, approximately 75% of students mentioned a lack of research exposure and having fewer opportunities to participate in research activities as the biggest obstacle to EBP implementation (20). In fact, being involved in research projects is an effective way to increase students' knowledge and skills of EBP (22, 23). The findings from our study showed the need for nursing schools to create more opportunities for students to learn EBP through research activities.

Although the present study may be considered the first to investigate barriers to EBP among undergraduate nursing students in Vietnam, it has some limitations that should be interpreted cautiously. Firstly, data were collected at only one public university; thus, it may not represent most nursing students in Vietnam. Secondly, this study with a cross-sectional descriptive design could not obtain an

in-depth understanding of barriers that nursing students encountered when adopting EBP. Lastly, there may be other important barriers and factors related to EBP that were not included in this study.

Conclusion

Our study showed that undergraduate nursing students faced many barriers when adopting EBP. Barriers related to setting and research utilization were the most rated barriers. Moreover, barriers to EBP implementation vary among nursing students depending on the frequency of seeking information about research/evidence and participating in research/implementing EBP.

The findings suggest that nursing schools need to support students to access reliable sources of data for searching for evidence. Implementing extra training courses for students, such as time management skills and information search, is also necessary. In addition, nursing education institutions should organize more scientific research competitions or provide more scholarships to enable students to conduct research. Lastly, nursing educators need to collaborate closely with hospital managers to facilitate students' adoption of evidence in their clinical practice.

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Conflict of interest

The authors declare that there is no conflict of interest in this study.

References

1. Chien LY. Evidence-based practice and nursing research. Journal of Nursing Research. 2019 Aug;27(4):e29. https://doi.org/10.1097/jnr.0000000000000346

2. Scott K, McSherry R. Evidence-based nursing: clarifying the concepts for nurses in practice. Journal of Clinical Nursing. 2009 Apr;18(8):1085–95. https://doi.org/10.1111/j.1365-2702.2008.02588.x

3. Connor L, Dean J, McNett M, Tydings DM, Shrout A, Gorsuch PF, et al. Evidence-based practice improves patient outcomes and healthcare system return on investment: Findings from a scoping review. Worldviews on Evidence-Based Nursing. 2023 Feb;20(1):6-15. https://doi.org/10.1111/wvn.12621

4. Stevens KR. The impact of evidence-based practice in nursing and the next big ideas. The Online Journal of Issues in Nursing. 2013 May;18(2):4. https://doi.org/10.3912/OJIN.Vol18No02Man04

5. Lam CK, Schubert C. Evidence-based practice competence in nursing students: an exploratory study with important implications for educators. Worldviews on Evidence-Based Nursing. 2019 Apr;16(2):161-8. https://doi.org/10.1111/wvn.12357

6. Kyriakoulis K, Patelarou A, Laliotis A, Wan AC, Matalliotakis M, Tsiou C, et al. Educational strategies for teaching evidence-based practice to undergraduate health students: systematic review. Journal of Educational Evaluation for Health Professions. 2016 Sep;13:34. https://doi.org/10.3352/jeehp.2016.13.34

7. Abu-Baker NN, AbuAlrub S, Obeidat RF, Assmairan K. Evidence-based practice beliefs and implementations: a cross-sectional study among undergraduate nursing students. BMC Nursing. 2021 Jan;20:13. https://doi.org/10.1186/s12912-020-00522-x

8. Iradukunda F, Mayers PM. Rwandan nursing students' knowledge, attitudes and application of evidence-based practice. Curationis. 2020 Jan ;43(1):2005. https://doi.org/10.4102/curationis.v43i1.2005

9. Labrague LJ, McEnroe-Pettite D, Tsaras K, D'Souza MS, Fronda DC, Mirafuentes EC, et al. Predictors of evidence-based practice knowledge, skills, and attitudes among nursing students. Nursing Forum. 2019 Apr-Jun;54(2):238–45. https://doi.org/10.1111/nuf.12323

10. Labrague LJ, McEnroe-Petitte D, D'Souza MS, Cecily HSJ, Fronda DC, Edet OB, at al. A multicountry study on nursing students' self-perceived competence and barriers to evidence-based practice. Worldviews on Evidence-Based Nursing. 2019 Jun;16(3):236-46. https://doi.org/10.1111/wvn.12364

11. Clavijo-Chamorro MZ, Sanz-Martos S, Gómez-Luque A, Romero-Zarallo G, López-Medina IM. Context as a facilitator of the implementation of evidence-based nursing: A meta-synthesis. Western Journal of Nursing Research.

2020 Jan;43(1):60-72. https://doi.org/10.1177/0193945920914397.

12. Nguyen TBT, Tran THO, Tran TBD. Perception of evidence-based practice among nurses. Journal of Nursing Science. 2020 Nov;3(5):148-57. https://vjol.info.vn/index.php/DHDDND/article/view/64383/54307

13. Nguyen TNM, Wilson A. Knowledge, skills, and attitudes to implementing best practice in hospitals in Central Vietnam. International Journal of Evidence-Based Healthcare. 2016 Dec;14(4):142-9. https://doi.org/10.1097/XEB.0000000000000081.

14. Vietnamese Nurses Association. Basic competency standards of Vietnamese nurses [Vietnamese]. Hanoi: Ministry of Health of Vietnam, 2022 [cited 2022 Jan 15]. Available from: https://thuvienphapluat.vn/van-ban/The-thao-Y-te/Quyet-dinh-3474-QD-BYT-2022-Chuan-nang-luc-co-ban-cua-Cu-nhan-Dieu-duong-Viet-Nam-548413.aspx

15. Charan J, Biswas T. How to calculate sample size for different study designs in medical research? Indian Journal of Psychological Medicine. 2013 Apr-Jun;35(2):121-6. https://doi.org/10.4103/0253-7176.116232

16. El-Said ES, Zaki HN, Jakalat SS. Barriers and facilitators for implementing evidence-based practice among nurses at Yanbu general hospital-Kingdom of Saudi Arabia. Life Science Journal. 2013 Jan;10(3):920-32.

17. Maneesriwongul W, Dixon JK. Instrument translation process: A methods review. Journal of Advanced Nursing. 2004 Sep;48(2): 175-86. https://doi.org/10.1111/j.1365-2648.2004.03185.x

18. Shayan SJ, Kiwanuka F, Nakaye Z. Barriers associated with evidence-based practice among nurses in low- and middle- income countries: a systematic review. Worldviews on Evidence-Based Nursing. 2019 Feb; 16(1):12–20. https://doi.org/10.1111/wvn.12337

19. Nguyen TTT, Duong NT, Jarrett S. Factor influencing the application evidence in nursing care practice. HoChiMinhCity Journal of Medicine. 2021;5(25):90-8. https://yhoctphcm.ump.edu.vn/index.php?Content=ChiTietBai&idBai=19179

20. Elmannan AAA, Alrebish S, Alqarzai RK, Alshubrmi AA, Alammar AY, Alsaeed HS. Barriers to participation in research as perceived by undergraduate medical students: A cross-sectional study from Qassim. Research Square. 2021 Aug;11(1019):1019. https://doi.org/10.21203/rs.3.rs-860230/v1

21. Battineni G, Baldoni S, Chintalapudi N, Sagaro GG, Pallotta G, Nittari G, et al. Factors affecting the quality and reliability of online health information. Digital Health. 2020 Jan-Dec;6:2055207620948996. https://doi.org/10.1177/2055207620948996

22. Baixinho CL, Ferreira OR, Medeiros M, de Oliveira ESF. Participation of nursing students in evidence-based practice projects: results of two focus groups. International Journal of Environmental Research and Public Health. 2022 Jun;19(11):6784. https://doi.org/10.3390/ijerph19116784

23. Horntvedt MT, Nordsteien A, Fermann T, Severinsson E. Strategies for teaching evidence-based practice in nursing education: a thematic literature review. BMC Medical Educcation. 2018 Jul;18(1):172. https://doi.org/10.1186/s12909-018-1278-z.