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Competencies, barriers, and facilitators in the implementation of evidence-based practice among nurses in a central hospital in Ho Chi Minh City, Vietnam

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ABSTRACT

***Background**: Evidence-based practice (EBP) is a core nursing competency essential for safe care. Despite its recognized value, EBP adoption among Vietnamese nurses is limited due to multiple barriers. **Aim**: To assess EBP competencies, barriers, and facilitators among nurses in a central hospital in Vietnam, and to examine the relationships among these factors. **Design**: Descriptive correlational research design. **Methods**: Stratified random sampling recruited 388 nurses from a central hospital. Data were collected using the Vietnamese version of the Evidence-Based Practice Competency Questionnaire, the Barriers Scale, and the Research Factor Questionnaire. Data were analyzed using descriptive statistics, Pearson's correlation, and mediation analysis. **Results**: Nurses demonstrated high competency in skills ($M = 3.83$, $SD = 0.47$), utilization ($M = 3.87$, $SD = 0.48$), and knowledge ($M = 3.65$, $SD = 0.56$), with very high scores in attitudes ($M = 4.29$, $SD = 0.44$). Barriers were reported at a moderate level ($M = 3.10$, $SD = 0.65$), with the strongest obstacles being lack of authority, insufficient time to implement new ideas, and inadequate skills for research appraisal. Facilitators were rated highly ($M = 3.65$, $SD = 0.53$), especially managerial support, advanced education, and access to resources. Correlation analysis revealed a positive association between barriers and facilitators ($r = 0.307$, $p < 0.001$). Mediation analysis showed that attitude had both a direct effect on facilitators ($\beta = 0.220$, $p < 0.001$) and an indirect effect through barriers ($\beta = –0.050$, $p = 0.011$). **Conclusion**: Attitude is central to shaping supportive conditions for EBP implementation. Strengthening facilitators can offset barriers, suggesting that organizational interventions should target both structural and motivational aspects to enhance EBP adoption.*

***Keywords**: Evidence-based practice, nursing competency, barriers, facilitators, Vietnam*

INTRODUCTION

Evidence-based practice (EBP) integrates clinical expertise, patient preferences, and the best available evidence to inform nursing care, improve patient outcomes, and reduce healthcare costs [1, 2, 3]. Recognized internationally as a nursing core competency, EBP is also endorsed by the Vietnamese Ministry of Health within national nursing standards.

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However, despite its importance, research indicates that EBP implementation among nurses remains inconsistent. Barriers such as time constraints, limited resources, inadequate knowledge, and organizational resistance hinder EBP uptake [4,5]. Facilitators, including managerial support, mentorship, continuing education, and access to research, are essential for translating evidence into practice [6, 7].

While studies in Vietnam show nurses generally have positive attitudes toward EBP, their knowledge, skills, and application are often moderate [8, 9]. There is limited research exploring the relationships between competencies, barriers, and facilitators in hospitals. Therefore, this study aims to assess the competencies, barriers, and facilitators in EBP implementation among nurses in a central hospital in Ho Chi Minh City, Vietnam, and examined their interrelationships, including mediating pathways.

METHODS

Participants: Registered nurses at the central hospital in Ho Chi Minh City, Vietnam. A stratified random sampling method was employed based on training level and work unit to ensure representativeness across departments. A total of 388 nurses participated in the study, including those from the Departments of Surgery (36.9%), Internal Medicine (35.3%), and Intensive Care Units and Emergency (27.8%). Regarding educational attainment, 79.4% held a university degree, 10% had postgraduate qualifications, and 10.6% possessed a college diploma. Inclusion criteria: registered nurses, ≥ 1-year clinical experience, direct patient care. Exclusion criteria: nurses not yes registered or less than one year of experience, lacking a license, working in administrative roles.

Design: A descriptive correlational design.

Sample size and sampling technique:

Using HSS 1.0 software, a minimum sample of 385 was required (95% CI, 5% margin of error), at 0.05 level of significance. Probability sampling and the stratified sampling technique was used. The population was divided into subgroups according to the number of nurses in each unit and random samples were drawn up to the required sample size.

Research instruments and data collection:

Data was collected using the Vietnamese version of Evidence-Based Practice Questionnaire (EBP-COQ Prof©) was provided by Ngo Thi Dung 2023 [10] that was translated from the scale's original version by author Ruzafa-Martínez [11] included 35 items measuring attitudes (8 items); knowledge (11 items); skills (6 items); and utilization (10 items) with Cronbach's alpha of the Vietnamese version was respectively (0.965; 0.962; 0.909; and 0.926). A five-point Likert scale ranging from 1 to 5 was used to acess the competencies from "Very Low"; "Low"; "Moderate"; "High"; "Very High". Barriers and Facilitators were collected usingthe open access questionnaire of Mohammed Saleh Almalki in 2017[10]. The Barriers Scale included 29 items assessing barriers to EBP implementation, and the Research Factor Questionnaire included 8 items evaluating facilitators in EBP implementation. Reliability testing Cronbach's alpha barriers = 0.873; facilitators = 0.907. EBP Barriers and EBP Facilitators rated on a 5-point Likert scale ranging from 1 to 5 included "No extent"; "A little extent"; "A moderate extent"; "A great extent"; "No Opinion". The

English questionnaire was translated into Vietnamese by three bilingual translators and backtranslated by translation company and pilot tested on 37 nurses. Data were gathered January–March 2025 via self-administered questionnaires.

Data analysis: Data was entered and analyzed using Jamovi software 2.6 version. Descriptive statistics for demographic and scale scores. Pearson's correlation for relationships. Mediation analysis to test indirect effects.

Ethical considerations: Ethical approval was obtained from the Institutional Review Board at Trinity University of Asia, Philippines (Decision No. 2024-1st-CNU-Vuong-v2, August 27, 2024) and the hospital's ethical committee. All participants provided informed consent, ensuring voluntary and involvement in the study.

RESULTS

Table 1. Characteristics of the study participants (N = 388)

Demographic Variable	Mean	Standard Deviation (SD)
Age (years)	36.54	7.74
Experience (years)	12.89	7.56
Educational attainment	**Frequency**	**Percentage (%)**
College	41	10.6
University	308	79.4
After University	39	10
Working Unit		
ICU or Emergency Department	108	27.8
Internal Medicine Department	137	35.3
Surgery Department	143	36.9

Table 1 revealed that the mean age of the participants was 36.54 years (SD = 7.74), the mean years of clinical experience was 12.89 years (SD = 7.56). Most participants possessed a university degree (79.4%). 36.9% of participants were assigned to the Surgical department, 35.3% to Internal Medicine, 27.8% to Intensive Care Unit or Emergency department.

Table 2. Evidence-based practice competencies (N = 388)

Domain	Mean	SD	Interpretation
Knowledge	3.65	0.56	High
Skills	3.83	0.47	High
Attitudes	4.29	0.44	Very high
Utilization	3.87	0.48	High
Overall score	**3.89**	**0.68**	**High**

Legend: 1 – 1.80: Very Low, 1.81 – 2.60: Low, 2.61 – 3.40: Moderate, 3.41 – 4.20: High, 4.21 – 5.0: Very High.

Table 2 shows EBP competencies of nurses at high level. The overall mean score was 3.89 ± 0.68. Nurses demonstrated the strongest competency in attitude toward EBP (M = 4.29, SD = 0.44, very high). Skills (M = 3.83, SD = 0.47) and utilization (M = 3.87, SD = 0.48) were also rated high. Although knowledge was the lowest-scoring domain (M = 3.65, SD = 0.56), it still reached a high level.

Table 3. Barriers in EBP implementation

Barriers Item	Mean	SD	Interpretation
The nurse does not feel she/he has enough authority to change patient care procedures	3.49	0.92	A great extent
There is insufficient time on the job to implement new ideas	3.37	0.94	A moderate extent
The nurse does not feel capable of evaluating the quality of the research	3.32	0.98	A moderate extent
Mean score of the barriers related to organizational and workplace	3.12	1.04	A moderate extent
Mean score of the barriers related to literature and scientific information	3.10	1.06	A moderate extent
Mean score of the barriers related to individual of nurse	3.05	1.06	A moderate extent
Overall score	**3.10**	**0.65**	**A moderate extent**

Legend: *1 – 1.80 (No extent); 1.81 – 2.60 (A little extent); 2.61 – 3.40 (A moderate extent); 3.41 – 4.20 (A great extent); 4.21 – 5.0 (No Opinion)*

Table 3. The overall mean score for barriers to implementing EBP among nurses was 3.10 ± 0.65, reflecting a moderate level. Among the categories, organizational and workplace-related barriers were rated highest (Mean = 3.12, SD = 1.04), followed by barriers related to literature and scientific information (Mean = 3.10, SD = 1.06), while individual-related barriers were lowest (Mean = 3.05, SD = 1.06). The three most prominent barriers identified were nurses' perception of lacking authority to change patient care procedures; insufficient time within their workload to implement new ideas; and inadequate skills to appraise the quality of research.

Table 4. Facilitators reported by nurses

Facilitator Item	Mean	SD	Interpretation
Increasing the time available for reviewing and implementing research findings	3.54	0.80	A great extent
Conducting more clinically focused and relevant research	3.61	0.71	A great extent
Providing colleague support network/mechanisms	3.62	0.68	A great extent

Facilitator Item	Mean	SD	Interpretation
Advanced education to increase your research knowledge base	3.74	0.72	A great extent
Enhancing managerial support and encouragement of research implementation	3.68	0.74	A great extent
Improving availability and accessibility of research reports	3.64	0.71	A great extent
Improving the understandability of research reports	3.72	0.69	A great extent
Employing nurses with research skills to serve as role models	3.63	0.84	A great extent
Overall score	**3.65**	**0.53**	**A great extent**

Legend: *1 – 1.80 (No extent); 1.81 – 2.60 (A little extent); 2.61 – 3.40 (A moderate extent); 3.41 – 4.20 (A great extent); 4.21 – 5.0 (No Opinion)*

Table 4 shows that the overall mean score for facilitators of EBP implementation was 3.65 ± 0.53, indicating a high level of perceived support. All eight facilitator iterms were identified at great extent. Among them, "advanced education to strengthen research knowledge" received the highest score. "Increasing the time available for reviewing and applying research findings" received the lowest score, nonetheless, remained a notable contributor to promoting EBP implementation.

Table 5. Correlation between EBP competencies, perceived barriers and facilitators to EBP implementation

EBP competencies		Attitude	Knowledge	Skills	Utilization	Barriers	Facilitators
EBP Barriers	Pearson's r	-0.143	-0.015	-0.04	-0.056	-	0.307
	p-value	0.005	0.775	0.436	0.273		< 0.001
EBP Facilitators	Pearson's r	0.137	0.008	0.001	-0.023	0.307	-
	p-value	0.007	0.875	0.99	0.646	<0.001	

Table 5 present the correlation analysis revealed that among the EBP competency domains, only attitude demonstrated significant associations with both barriers and facilitators. Specifically, attitudes were negatively correlated with barriers ($r = –0.143$, $p = 0.005$). Conversely, attitudes were positively correlated with facilitators ($r = 0.137$, $p = 0.007$). A statistically significant positive relationship between perceived barriers and facilitators of EBP implementation among nurses ($r = 0.307$, $p < 0.001$). Knowledge, skills, and utilization showed no significant correlations with either barriers or facilitators (all $p > 0.05$).

Table 6. Mediation path analysis

				95% C.I. (a)				
Type	**Effect**	**Estimate**	**SE**	**Lower**	**Upper**	β	**z**	**p**
Indirect	Attitude ⇒ EBP Barriers ⇒ EBP Facilitators	-0.06	0.024	-0.106	-0.014	-0.050	-2.533	0.011
	Knowledge ⇒ EBP Barriers ⇒ EBP Facilitators	0.021	0.023	-0.024	0.066	0.022	0.925	0.355
	Skills ⇒ EBP Barriers ⇒ EBP Facilitators	-0.006	0.029	-0.064	0.051	-0.005	-0.208	0.835
	Utilization ⇒ EBP Barriers ⇒ EBP Facilitators	-0.011	0.029	-0.068	0.046	-0.010	-0.385	0.701
Component	Attitude ⇒ EBP Barriers	-0.220	0.081	-0.379	-0.061	-0.149	-2.718	0.007
	EBP Barriers ⇒ EBP Facilitators	0.271	0.039	0.196	0.348	0.334	6.982	< .001
	Knowledge ⇒ EBP Barriers	0.077	0.083	-0.086	0.241	0.067	0.933	0.351
	Skills ⇒ EBP Barriers	-0.022	0.108	-0.234	0.189	-0.016	-0.208	0.835
	Utilization ⇒ EBP Barriers	-0.041	0.107	-0.252	0.169	-0.030	-0.385	0.7
Direct	Attitude ⇒ EBP Facilitators	0.265	0.063	0.142	0.388	0.220	4.215	< .001
	Knowledge ⇒ EBP Facilitators	-0.013	0.064	-0.139	0.112	-0.0141	-0.208	0.835
	Skills ⇒ EBP Facilitators	0.033	0.083	-0.129	0.195	0.029	0.4	0.689
	Utilization ⇒ EBP Facilitators	-0.113	0.082	-0.274	0.048	-0.102	-1.369	0.171
Total	Attitude ⇒ EBP Facilitators	0.205	0.066	0.075	0.335	0.170	3.099	0.002
	Knowledge ⇒ EBP Facilitators	0.008	0.068	-0.125	0.141	0.008	0.115	0.908
	Skills ⇒ EBP Facilitators	0.027	0.088	-0.145	0.199	0.024	0.307	0.759
	Utilization ⇒ EBP Facilitators	-0.124	0.087	-0.295	0.047	-0.112	-1.418	0.156

The mediation analysis on table 5 demonstrated that among the EBP competency domains, only attitude exerted both direct and indirect effects on the perception of facilitators. Specifically, attitude showed a significant negative association with perceived barriers (β = –0.149, p = 0.007), which in turn were positively associated with facilitators (β = 0.334, p < 0.001). This pathway opened a significant indirect effect of attitude on facilitators through barriers (β = –0.050, p = 0.011). In addition, attitude also had a strong and significant direct effect on facilitators (β = 0.220, p < 0.001), resulting in a significant total effect (β = 0.170, p = 0.002). By contrast, knowledge, skills, and utilization did not show significant direct, indirect, or total effects on facilitators.

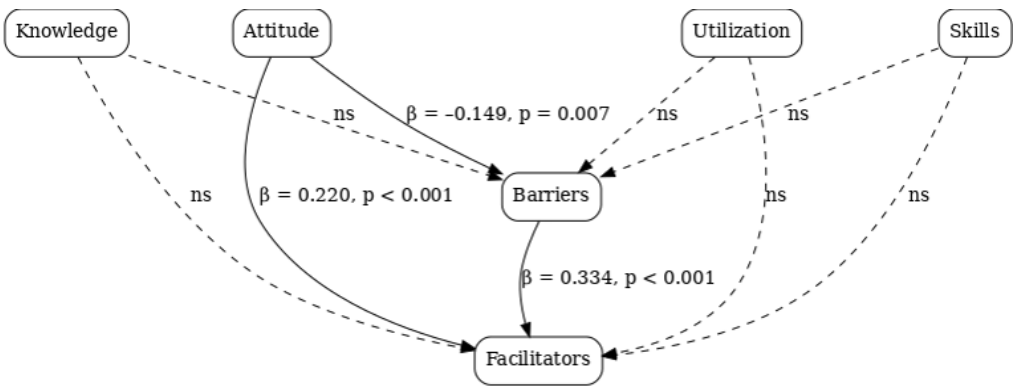

Figure 1. Effect analysis of EBP competencies, barriers, and facilitators

DISCUSSION

The sample demonstrated (table 1) a relatively young and experienced nursing workforce, with a mean age of 36.5 years and an average of 12.9 years of clinical practice. Most participants held at least a university degree, highlighting a highly educated cohort with substantial exposure to evidence-based practice. Approximately 10% of nurses possessed postgraduate qualifications, suggesting potential leadership in implementing and sustaining evidence-based initiatives. The distribution of nurses across specialties was well balanced, which likely reflects the competencies of nurses at hospital. Compared with previous studies, the participants in this research were older and more qualified than those reported by Thu et al. (2023) [9], and younger and with fewer years of practice than the cohort surveyed by Schetaki et al. (2023) [12]. These contrasts underline the contextual variability of nursing workforce characteristics across settings and their potential implications for clinical competencies and practice outcomes.

Table 2 showed nurses in this study demonstrated the highest competency in their attitudes toward evidence-based practice (EBP), followed by utilization and skills, while knowledge, though comparatively lower, still reached a high level. This pattern suggests that professional attitudes form a strong foundation for EBP, shaped likely by institutional culture and training, but also indicates the need to strengthen knowledge through continuous professional development. Compared with previous studies in Vietnam and internationally, the

present findings show consistently higher overall scores, particularly in attitudes, aligning with the global trend that nurses tend to display more positive attitudes than knowledge or skills regarding EBP [5, 9, 12, 13].

This study identified a moderate level of barriers to implementing EBP, with organizational and workplace-related factors being the most prominent, particularly lack of authority to change procedures, insufficient time, and limited skills in appraising research. These findings are consistent with reports from both local and international studies, which similarly highlight time constraints, inadequate authority, and resource limitations as key obstacles [5, 9, 12 - 16]. Although the overall barrier score was lower than in some prior studies, the recurring nature of these challenges suggests that they are structural rather than individual issues. Organizational strategies aimed at improving support, training, and empowerment of nurses are therefore essential to facilitate the successful integration of EBP into clinical practice.

The study revealed nurses perceived a high level of facilitators for EBP implementation, with advanced education to enhance research knowledge rated as the strongest enabler, followed by organizational and peer support, while increased time for applying research, though rated lowest, was still considered important. These results underscore the critical role of capacity building, institutional commitment, and collaboration in fostering EBP integration. Compared with previous studies, the present findings reported higher facilitator scores but highlighted similar core elements - education, peer support, and organizational policies - as consistently essential across contexts [15, 17]. Collectively, these findings suggest that reinforcing education and creating supportive organizational structures are pivotal strategies to sustain EBP in nursing practice.

This study demonstrated that attitudes toward EBP were the only competency domain significantly associated with both barriers and facilitators. A negative correlation with barriers and a positive correlation with facilitators. In contrast, knowledge, skills, and utilization were not significantly linked to these factors. These findings highlight the pivotal role of attitudes in nurses perceived facilitators and overcome barriers. Consistent with prior studies also showing that favorable attitudes increase the likelihood of EBP adoption despite constraints [13, 18 - 20]. The observed positive correlation between barriers and facilitators suggests a compensatory dynamic, whereby heightened awareness of barriers may simultaneously increase recognition of facilitators. This reinforces the need for interventions to cultivate positive attitudes and strengthen organizational environments that provide visible, accessible facilitators such as managerial commitment, peer support, and education systems [17, 21].

The mediation analysis revealed that attitudes toward EBP exert both direct and indirect effects on the perception of facilitators, highlighting their central role in shaping supportive conditions for implementation. Positive attitudes not only enhance recognition of facilitators but also reduce perceived barriers, which in turn promote supportive environments. In contrast, knowledge, skills, and utilization showed no significant effects, suggesting that technical competencies alone may be insufficient without favorable attitudes. These findings align with previous studies report that while nurses generally demonstrate stronger attitudes than

knowledge or practice, barriers such as limited time and resources remain critical obstacles to translating EBP into practice[22,23].

This study highlights that nurses' attitudes toward EBP play a central role in shaping supportive conditions for its implementation, both directly and through reducing perceived barriers. This aligns with international findings emphasizing attitudinal readiness as a driver of EBP adoption [12, 24].

LIMITATIONS

The study was limited by conducted in a single central hospital, which may not represent other hospitals with different organizational structures, resources or cultures. The descriptive correlational design, which restricts the general of findings and can't causally inference and the self-reported questionnaires that were used may also have introduced recall and social desirability bias.

CONCLUSION AND RECOMMENDATIONS

This study found that nurses represented a balanced and highly educated workforce with diverse clinical experience across major hospital units. While knowledge, skills, and utilization of EBP competencies were rated high, attitudes were very high, underscoring their central role in shaping nursing practice. Barriers to EBP implementation were reported at a moderate level, mainly organizational and workplace-related, whereas facilitators were perceived at a high level, with advanced education, peer collaboration, and managerial support identified as key enablers. Correlation and mediation analyses confirmed that attitudes were the only competency domain significantly influencing both barriers and facilitators. Nurses with more positive attitudes reported fewer obstacles and greater recognition of supportive factors, whereas knowledge, skills, and utilization had no meaningful effects.

To advance EBP adoption, strategies should focus on three overarching areas. First, strengthening competencies through continuous education in research appraisal, critical thinking, and mentorship systems to address knowledge gaps. Second, enhancing organizational support by empowering nurses in decision-making, optimizing workload to allow time for EBP, providing access to updated resources, and embedding EBP into institutional policies. Third, fostering positive attitudes by integrating reflective practice, motivational creating, and recognition of EBP initiatives to reinforce nurses' engagement. Together, these approaches emphasize that technical knowledge must be complemented by organizational commitment and positive attitudes to ensure sustainable integration of EBP into clinical practice.

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