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Knowledge, Attitudes, and Practices Regarding Evidence-Based Practice Among Nurses and Nursing Students in Vietnam: A Systematic Review

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We thank Nam Dinh University of Nursing for institutional support and the authors of the included studies for their published contributions to the evidence base. Their contributions were essential for completing this systematic review and meta-analysis. | Nous tenons à remercier la Nam Dinh University of Nursing pour son soutien institutionnel, ainsi que les auteurs et autrices des études incluses pour leur contribution à l'enrichissement de la base de données probantes. Leurs contributions ont été essentielles à la réalisation de cette revue systématique et méta-analyse.

Evidence-based practice (EBP) is a cornerstone of modern health care, integrating scientific evidence, clinical expertise, and patient values to improve quality of care (Brunt & Morris, 2026; Melnyk & Fineout-Overholt, 2023). In nursing, EBP enhances treatment outcomes and strengthens evidence-informed decision-making. This approach has been associated with improved patient outcomes and more-efficient use of health care resources, particularly when supported by structured education and implementation strategies (Connor et al., 2023; Jeong et al., 2024; Sapri et al., 2022). In some high-income countries, EBP has been effectively incorporated into nursing education. For instance, Spain has implemented online courses that significantly improved nurses' EBP competencies (Ramos-Morcillo et al., 2024).

In low- and middle-income countries (LMICs) such as Vietnam, EBP-related research has increased in recent years, but the total number of studies remains insufficient to provide a robust evidence base (Adombire et al., 2024). This scarcity limits the evaluation of nursing competencies, particularly given that nurses account for approximately 39% of Vietnam's health workforce (Ministry of Health [Vietnam], 2021). Furthermore, institutional constraints, limited resources, and inadequate training impede the integration of EBP into clinical practice (Leonard et al., 2020). In such resource-constrained settings, EBP is particularly important as it supports the efficient use of limited health care resources and promotes cost-effective, high-quality care (Melnyk & Fineout-Overholt, 2023Melnyk). Individual studies in Vietnam have reported generally positive attitudes towards EBP but insufficient knowledge and skills/practice (Dương et al., 2022; Lê & Kiều, 2025). However, these findings are largely based on cross-sectional designs with primarily descriptive or univariable analyses, and they vary across study populations and measurement approaches, limiting the ability to draw comprehensive and generalizable conclusions about EBP competencies at the national level. A systematic synthesis of the available evidence is therefore important because findings remain fragmented across populations, instruments, and settings, making it difficult to identify common gaps in EBP competencies and to inform nursing education, workforce development, and policy decisions. Moreover, as the number of EBP-related studies conducted in Vietnam has increased in recent years, a timely synthesis is needed to clarify the current evidence base, identify associated factors and barriers, and highlight priorities for future education, research, and implementation efforts. To date, no systematic review has comprehensively synthesized the available evidence in this context.

This review aims to comprehensively assess EBP competencies—knowledge, attitudes, and skills/practice[1]—among nurses and nursing students in Vietnam, and to identify associated factors and barriers. The findings are expected to inform the development of targeted EBP educational programs, curriculum integration strategies, and institutional policies to address identified gaps in knowledge and skills/practice in resource-constrained health care settings such as Vietnam.

Methods

Study Design

This systematic review followed the PRISMA 2020 guidelines (Page et al., 2021) (see Appendix A in the Supplementary File) and was prospectively registered with PROSPERO (CRD420251111681). In addition to a narrative synthesis, we performed a quantitative synthesis where sufficient comparable data were available. The review aimed to answer the following research questions: What are the levels of knowledge, attitudes, and skills/practice regarding EBP among nursing students and nurses in Vietnam? What factors and barriers are associated with these competencies?

[1] In this paper, we use *skills* for studies using the EBP instrument that assesses this domain as skills, and *practice* for studies using the EBP questionnaire, which originally assesses evidence-based practice. Where findings from different instruments are synthesized, we use *skills/practice* to distinguish the related but conceptually different domains.

Eligibility Criteria

Studies were included if they:

- used a quantitative cross-sectional design;
- assessed at least one EBP component (knowledge, attitudes, skills/practice);
- involved nursing students or nurses in Vietnam;
- were published between 2016 and August 1, 2025, as 2016 marked the first publication on EBP in Vietnam (Nguyen & Wilson, 2016); and
- had a full text available in English or Vietnamese.

Cross-sectional studies were selected to ensure methodological consistency and comparability of outcome estimates across studies assessing knowledge, attitudes, and skills/practice related to EBP. Baseline data from cohort or intervention studies were not included because the review was restricted to cross-sectional designs.

Excluded studies were qualitative studies, interventional studies, review studies, case reports, or studies lacking relevant quantitative data.

Search Strategy

We conducted a systematic search across two bibliographic databases, PubMed and Cochrane Library, and additional sources, including Google Scholar, the Vietnam Journals Online (VJOL) portal, and manual searches of Vietnamese medical and nursing journal websites (e.g., *Journal of Health and Development Studies*, *Journal of Nursing Science*, *Vietnam Medical Journal*). Two reviewers conducted the database and manual searches. The search period was from June 4, 2025, to August 1, 2025. Keywords were combined using Boolean operators (see Appendix B in the Supplementary File for full search strategies for each database). Reference lists of included studies were manually screened for additional relevant publications.

Searches in Google Scholar used combinations of keywords as well as title-specific terms (see Appendix B in the Supplementary File) to improve relevance. Google Scholar searches were conducted between June 4, 2025, and August 1, 2025. Results were sorted by relevance, and titles and abstracts of all retrieved records were screened to identify potentially eligible studies. Full texts were obtained for potentially eligible studies and assessed against the predefined inclusion criteria.

To identify additional studies published in Vietnamese, we conducted manual searches through VJOL and selected Vietnamese medical and nursing journals using Vietnamese search terms. Titles and abstracts identified through these searches were screened using the same eligibility criteria applied to database records, and potentially relevant articles underwent full-text review.

Screening and Selection

All records were imported into EndNote to remove duplicates. Two independent reviewers screened titles, abstracts, and full texts for eligibility. When discrepancies occurred during screening, the reviewers independently re-evaluated the study against the predefined eligibility criteria and then discussed their assessments until consensus was reached. Studies were included or excluded only after the reviewers reached agreement. The selection process is shown in Figure 1.

Data Extraction

We collected data using a standardized spreadsheet form for all studies that met the inclusion criteria after full-text screening, including study characteristics (author, year, design, sample

size, sample characteristics); measurement instruments and reliability; primary outcomes (knowledge, attitudes, skills/practice); and secondary outcomes (associated factors, barriers—see Tables 3 and 4). Two reviewers independently performed data extraction, and any discrepancies were resolved through discussion and consensus.

Data Analysis

We conducted the quantitative synthesis using Stata 14.0. Pooled mean scores with 95% confidence intervals (CIs) were calculated for each EBP domain. A random-effects model using the DerSimonian–Laird estimator was used because of anticipated clinical and methodological heterogeneity across studies, including differences in study populations and measurement instruments. We assessed heterogeneity across studies using Cochran's Q test and the I^2 statistic, with $I^2 > 50\%$ or a Cochran's Q test p-value < 0.10 considered indicative of substantial heterogeneity.

When standard deviations (SDs) were not directly reported, they were derived from available statistics such as CIs or standard errors where possible. If mean and/or SD for a specific EBP domain were unavailable and could not be derived, that domain was excluded from the meta-analysis, while other domains from the same study were retained if sufficient data were available. Studies with insufficient data for quantitative synthesis were included in the narrative synthesis.

Although we used different instruments across studies—the evidence-based practice competence questionnaire (EBP-COQ) and the evidence-based practice questionnaire (EBPQ)—these tools assess conceptually comparable domains of EBP competence, including knowledge, attitudes, and skills/practice. In addition, the direction of scoring is consistent across instruments, with higher scores indicating higher levels of EBP competence. Therefore, we calculated pooled mean estimates separately within homogeneous subgroups (nursing students and nurses) and by EBP domain to ensure conceptual comparability of the outcomes.

To assess the robustness of selected pooled estimates given the small number of studies, we performed a leave-one-out sensitivity analysis by sequentially removing each study and recalculating the pooled estimate. We also conducted sensitivity analyses comparing fixed-effects (inverse-variance) and random-effects (DerSimonian–Laird) models for all pooled outcomes. Given the small number of studies and substantial heterogeneity, we performed an additional sensitivity analysis using restricted maximum likelihood (REML) estimation of the between-study variance (τ^2), and the resulting pooled estimates and 95% CIs were compared with those obtained using the DerSimonian–Laird estimator. Because only three to six studies were available for each meta-analysis, pooled estimates were considered exploratory and interpreted with caution. We did not conduct publication bias assessment and subgroup analyses because fewer than 10 studies were included in each meta-analysis.

For variables beyond the three core EBP competencies (e.g., demographic characteristics and associated factors), we calculated weighted means based on sample size to provide descriptive summaries (see Tables 3 and 4).

Quality Assessment

We assessed study quality for all included studies (n = 11) using the JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies, which comprises eight criteria (JBI, n.d.). Total scores of 0–2 indicated *low quality*, 3–5 indicated *moderate quality*, and 6–8 indicated *high quality*. Two reviewers independently conducted quality assessment using the JBI checklist, and any disagreements were resolved through discussion and consensus (see Table 2).

The quality assessment results were used for descriptive and interpretative purposes only and were not applied as exclusion criteria. All included studies were retained regardless of their quality

scores to ensure a comprehensive synthesis of the available evidence. We conducted a leave-one-out sensitivity analysis to assess the robustness of the pooled estimates; however, we did not perform sensitivity analyses stratified by study quality due to the limited number of included studies.

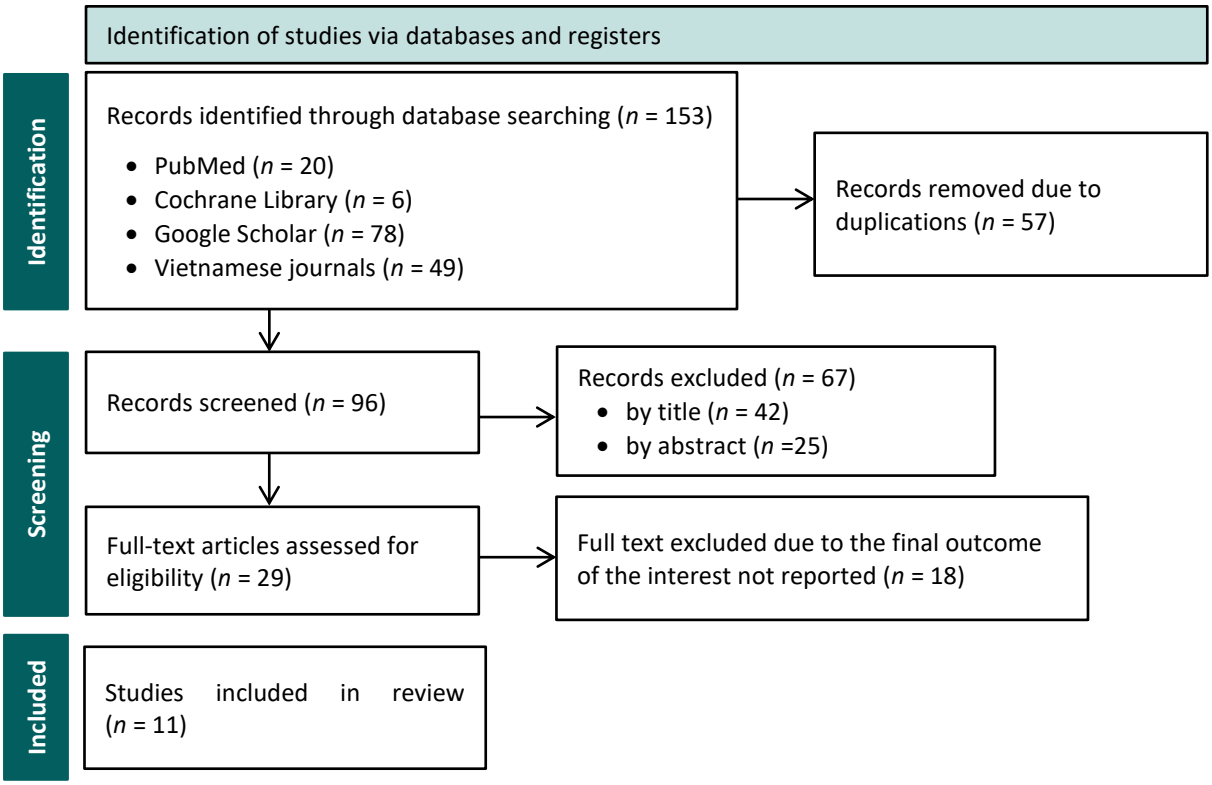
Results

Search Results

We identified 153 records through database searches and manual screening. After removing duplicates and screening titles and abstracts, we assessed 29 full-text articles for eligibility. Following full-text assessment based on the predefined inclusion criteria, 11 studies were deemed eligible and included in the systematic review (see Figure 1).

Figure 1

PRISMA Flow Diagram



General Characteristics of the Included Studies

In total, we analyzed 11 studies (n = 2,050), comprising four studies on nursing students (n = 838) and seven studies on nurses (n = 1,212). Sample sizes ranged from 105 to 296, with most employing convenience sampling. All were quantitative cross-sectional studies, using standardized instruments such as the EBP-COQ and EBPQ. Most studies reported Cronbach's alpha coefficients (see Table 1). One study was excluded from the meta-analysis due to incompatible measurement scales (Lê et al., 2024).

Table 1

General Characteristics of the Included Studies

Study	Setting/site	Participants	Mean scores (average score of items)			Instrument	Cronbach's alpha	Principal findings
			Knowledge	Attitude	Skills/practice			
Dương et al. (2022)	Duy Tan University	Year 3–4 nursing students (*n* = 134)	3.31 ± 0.81	4.06 ± 0.59	3.71 ± 0.69	EBP-COQ	0.86	High EBP competence; EBP education, internet use, and English proficiency were associated with better competencies; time was a major barrier.
Oanh & Phuong (2024)	Ho Chi Minh City University of Medicine and Pharmacy	Year 2–4 nursing students (*n* = 230)	3.38 ± 0.53	3.77 ± 0.45	3.27 ± 0.52	EBP-COQ	0.86	Good overall EBP competence; attitudes scored highest and skills lowest.
Lê & Kiều (2025)	Nguyen Tat Thanh University	Year 3–4 nursing students (*n* = 296)	2.92 ± 0.53	3.67 ± 0.47	3.01 ± 0.40	EBP-COQ	0.89	Positive attitudes but moderate knowledge and skills; EBP education, English proficiency, and internet use were associated with better competencies.
Mai et al. (2024)	Can Tho University of Medicine and Pharmacy	Year 2–4 nursing students (*n* = 178)	3.02 ± 0.70	3.89 ± 0.51	NR	EBP-COQ	0.83	High EBP knowledge and attitudes; gender, academic year, and major were associated with EBP knowledge.
Oanh et al. (2018)	Thai Nguyen National Hospital	Nurses (*n* = 185)	4.00 ± 1.23	5.08 ± 1.34	3.79 ± 1.39	EBPQ	0.83	Positive attitudes but moderate knowledge and skills; education and research participation were associated with better competencies.

Nguyễn et al. (2020)	Binh Dinh Provincial General Hospital and Cam Ranh Regional General Hospital	Nurses (*n* = 173)	3.66 ± 0.53	3.81 ± 0.81	3.59 ± 0.80	EBPQ	0.87	Moderate EBP competence; longer work experience was associated with higher scores; major barriers included lack of time, cost, and limited research knowledge.
Le et al. (2021)	Nhan Ai Hospital	Nurses (*n* = 105)	4.49 ± 0.45	4.08 ± 0.34	4.69 ± 0.43	EBPQ	0.83	Moderate to high EBP competence; age, gender, education, work experience, position, and EBP education were associated with EBP scores.
Chu & Nguyễn (2023)	Vinh City General Hospital	Nurses (*n* = 200)	4.40 ± 0.49	5.05 ± 0.45	4.50 ± 0.34	EBPQ	NR	Positive attitudes but moderate EBP knowledge and practice.
Nguyễn et al. (2023)	Le Van Thinh Hospital	Nurses (*n* = 231)	4.91 ± 0.91	4.93 ± 1.27	4.87 ± 0.92	EBPQ	0.92	Moderate EBP competence; younger age, female gender, higher education, and shorter work experience were associated with higher scores.
Đào et al. (2024)	Ho Chi Minh City Oncology Hospital	Nurses (*n* = 194)	NR	4.80 ± 0.95	4.90 ± 0.99	EBPQ	0.92	Positive EBP attitudes and practice; attitudes were positively correlated with practice.
Lê et al. (2024)	Can Tho University of Medicine and Pharmacy Hospital	Nurses (*n* = 124)	5.01 ± 0.67	5.31 ± 0.67	NR	EBP-COQ Prof©	NR	Moderate EBP knowledge and attitudes; education and EBP education were associated with better competencies.

Note. EBP-COQ = evidence-based practice competence questionnaire; EBPQ = evidence-based practice questionnaire; EBP = evidence-based practice, NR = not reported.

Meta-analysis

Pooled analyses of the four nursing student studies revealed substantial heterogeneity: knowledge ($Q = 108.5$; $I^2 = 97.2\%$; $p < 0.001$), attitudes ($Q = 54.6$; $I^2 = 94.5\%$; $p < 0.001$), and skills ($Q = 136.8$; $I^2 = 98.5\%$; $p < 0.001$). Therefore, we applied a random-effects model. The pooled mean scores were knowledge = 3.16 (95% CI: 2.90–3.41); attitudes = 3.84 (95% CI: 3.70–3.99); and skills = 3.33 (95% CI: 2.99–3.66). These scores indicate positive attitudes but limited knowledge and skills in EBP. A leave-one-out sensitivity analysis showed that the pooled mean knowledge score among students remained stable when individual studies were removed, ranging from 3.08 to 3.24, compared with the original pooled estimate of 3.16, indicating that no single study substantially influenced the pooled result (see Appendix E, Table 1, in the Supplementary File).

Among studies about nurses, five EBPQ studies contributed to the pooled knowledge analysis, while six EBPQ studies contributed to the pooled attitudes and practice analyses. These pooled analyses showed very high heterogeneity: knowledge ($Q = 391.5$; $I^2 = 99.0\%$; $p < 0.001$), attitudes ($Q = 654.6$; $I^2 = 99.2\%$; $p < 0.001$), and practice ($Q = 361.4$; $I^2 = 98.6\%$; $p < 0.001$). The random-effects pooled estimates were knowledge = 4.29 (95% CI: 3.88–4.71); attitudes = 4.62 (95% CI: 4.15–5.10); and practice = 4.39 (95% CI: 4.05–4.73). These results also indicate that nurses possessed positive attitudes but exhibited lower levels of EBP knowledge and practice. Detailed forest plots are provided in Appendix D in the Supplementary File. Sensitivity analyses comparing fixed-effects and random-effects models demonstrated generally similar pooled estimates across all outcomes. Among nursing students, differences between pooled means obtained from random-effects and fixed-effects models ranged from 0.03 to 0.18 points. Among nurses, differences ranged from 0.03 to 0.10 points. Although some variation in pooled estimates was observed, the overall interpretation of findings remained unchanged. Given the substantial heterogeneity across studies, random-effects estimates were retained as the primary results (see Appendix E, Table 2, in the Supplementary File).

An additional sensitivity analysis using REML estimation of the between-study variance (τ^2) yielded pooled mean estimates highly consistent with those obtained using the DerSimonian–Laird estimator across all six meta-analyses. The differences in pooled means between the two estimators ranged from 0.000 to 0.002 points, indicating minimal influence of the choice of heterogeneity estimator on the pooled estimates. REML estimates and 95% CIs are presented in Appendix E, Table 3, in the Supplementary File.

Quality Assessment

According to the JBI checklist, nine studies were rated as high quality (6–8 points), while two studies were rated as moderate quality (3–5 points). Commonly unmet criteria included controlling for confounding factors (criterion 6), validity and reliability of outcome measurement (criterion 7), and appropriateness of statistical analyses (criterion 8) (see Table 2).

Table 2

Quality Assessment

Study	Item number corresponding to JBI critical appraisal checklist								Score
	1	2	3	4	5	6	7	8	
Dương et al. (2022)	Y	Y	Y	Y	Y	Y	Y	Y	**8**
Oanh & Phuong (2024)	Y	Y	Y	Y	Y	U	Y	U	**6**
Lê & Kiều (2025)	Y	Y	Y	Y	Y	Y	Y	Y	**8**
Mai et al. (2024)	Y	Y	Y	Y	Y	U	Y	Y	**7**
Oanh et al. (2018)	Y	Y	Y	Y	Y	U	Y	Y	**7**
Nguyễn et al. (2020)	Y	Y	U	Y	Y	U	Y	U	**5**
Le et al. (2021)	Y	Y	Y	Y	Y	U	Y	Y	**7**
Chu & Nguyễn (2023)	Y	Y	U	Y	U	N	U	U	**3**
Nguyễn et al. (2023)	Y	Y	Y	Y	Y	Y	U	Y	**7**
Đào et al. (2024)	Y	Y	Y	Y	U	N	Y	Y	**6**
Lê et al. (2024)	Y	Y	Y	Y	Y	Y	U	Y	**7**

Note. Y = yes; N = no; U = unclear.

Quality appraisal was conducted using the JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (see Appendix C in the Supplementary File).

Demographic Characteristics and Selected Associated Factors of Study Participants

Tables 3 and 4 present selected factors potentially associated with EBP, summarized as sample size–weighted means. For nursing students (Table 3), associated factors included age, sex, level of interest, prior education in EBP or research methods, internet skills, and English reading proficiency. For nurses (Table 4), notable factors were educational attainment, years of professional experience, and prior EBP education. The proportion of participants who had received EBP education was low—27.39% among students and 22.86% among nurses—highlighting a substantial gap in EBP education.

Table 3

Selected Associated Factors Among Nursing Students

Study	Associated factors							
	Female (%)	**Age**	**Interest in EBP (%)**	**EBP education (%)**	**Research methods education (%)**	**Internet use for EBP information (%)**	**English research article comprehension (%)**	**Research information search skills (%)**
Dương et al. (2022)	76.9	20.7	71.6	37.3	47.0	66.4	63.4	83.6
Oanh & Phuong (2024)	89.1	21.2	NR	NR	76.6	NR	43.0	NR
Lê & Kiều (2025)	84.5	21.7	80.1	22.9	37.2	47.0	73.3	92.2
Mai et al. (2024)	88.8	20.8	NR	NR	NR	NR	74.2	NR
Mean	**85.5**	**21.2**	**77.5**	**27.4**	**52.7**	**53.1**	**63.6**	**89.5**

Note. EBP = evidence-based practice; NR = not reported.

Table 4

Selected Associated Factors Among Nurses

Study	Associated factors								
	Female (%)	**Age**	**Bachelor's degree or above (%)**	**Work experience**				**Research participation (%)**	**Education in EBP (%)**
				≤ 5 years (%)	**6–10 years (%)**	**> 10 years (%)**	**Mean (years)**		
Oanh et al. (2018)	77.8	30.1	57.8	NR	NR	NR	8.3	61.1	NR
Nguyễn et al. (2020)	NR	NR	34.1	44.5	39.3	16.2	NR	NR	NR
Le et al. (2021)	64.8	32.3	96.2	24.7	44.8	30.5	8.8	NR	28.6
Chu & Nguyễn (2023)	89.0	NR	31.0	44.0	21.5	34.5	NR	NR	NR

Nguyễn et al. (2023)	87.0	32.7	26.4	23.0	30.3	43.7	NR	NR	NR
Đào et al. (2024)	83.0	34.5	66.0	NR	NR	NR	11.8	NR	NR
Lê et al. (2024)	75.8	NR	51.6	NR	NR	NR	NR	31.5	18.0
Mean	**81.4**	**32.4**	**48.0**	**35.4**	**32.2**	**32.4**	**9.8**	**49.2**	**22.9**

Note. EBP = evidence-based practice; NR = not reported.

Associated Factors and Barriers to EBP Implementation

Table 5 shows several statistically significant associations ($p < 0.05$) between personal characteristics and EBP competencies. In the table, the ">" symbol indicates that the first listed group had higher EBP outcome scores than the second group. Among students, these factors included year of study, internet skills, English proficiency, level of interest, prior education, and participation in EBP practice. Among nurses, significant factors included age, gender, educational attainment, years of service, research experience, and prior EBP education.

Reported barriers included lack of time, limited access to scientific literature, low English proficiency, and absence of appropriate educational programs.

Table 5

Associated Factors and Barriers

Study	**Associated factors ($p < 0.05$)**			**Barriers**
	Knowledge	**Attitude**	**Skills/practice**	
Dương et al. (2022)	• Year: 4 > 3 • Area: Urban > rural • Training hours: More > less	• Academic level: Excellent > good • Internet use: More > less	• Academic level: Excellent > good • EBP interest: More > less • Internet use: More > less • English proficiency: High > low	Time, interest, EBP training, research, resources, support and motivation
Oanh & Phuong (2024)	NR	NR	NR	English proficiency
Lê & Kiều (2025)	• EBP training: Attended > not attended • English proficiency: High > low	• Year: 4 > 3 • EBP interest: High > low • EBP training: Attended > not attended	• Internet use: More > less • English proficiency: High > low	NR

	• Journal search frequency: High > low	• Intention to apply EBP: Yes > no • Research training: Attended > not attended • Internet use: More > less		
Mai et al. (2024)	Gender: Female > male	No significant association reported	NR	NR
Oanh et al. (2018)	Research participation: Yes > no	• Academic level: Higher > lower • Research participation: Yes > no	• Academic level: Higher > lower • Research participation: Yes > no	NR
Nguyễn et al. (2020)	Experience: More > less	Experience: More > less	Experience: More > less	Time, cost, research knowledge
Le et al. (2021)	• Gender: Female > male • Experience: Less > more	• Gender: Male > female • Experience: Less > more	• Gender: Male > female • Experience: Less > more	NR
Nguyễn et al. (2023)	• Age: Younger > older • Education: Higher > lower	• Age: Younger > older • Education: Higher > lower	• Age: Younger > older • Education: Higher > lower	NR
Đào et al. (2024)	NR	NR	Attitude positively correlated with practice (r = 0.43; p < 0.05)	NR
Lê et al. (2024)	• Education: Higher > lower • EBP training: Attended > not attended	• Education: Higher > lower • EBP training: Attended > not attended	NR	NR

Note. ">" indicates a higher EBP outcome score for the first listed group. NR = not reported; EBP = evidence-based practice.

Discussion

This review indicates that research on EBP in Vietnam remains limited in quantity and publication coverage. Only 11 quantitative studies met the inclusion criteria, most of which were published in domestic journals, and relatively few were retrieved from PubMed. Possible contributing factors include limitations in study design, lower skill level in academic English writing, and lack of specialized research support.

The meta-analysis revealed that both nursing students and nurses hold positive attitudes towards EBP—an essential motivational foundation—yet their knowledge and skills/practice scores were lower than their attitude scores, consistent with trends in other LMICs (Adombire et al., 2024). These findings align with Li et al.'s (2024) systematic review and reinforce the notion that a positive attitude alone does not guarantee readiness for practice (Saunders & Vehviläinen-Julkunen, 2016). However, the very high heterogeneity observed across studies ($I^2 > 90\%$) limits the interpretability and comparability of the pooled estimates. Therefore, the pooled estimates should be regarded as exploratory rather than confirmatory and interpreted with caution.

Most included studies employed standardized measurement tools (EBP-COQ, EBPQ) and achieved high methodological quality based on the JBI criteria. However, we found persistent gaps in reporting reliability measures, controlling for confounding factors, and conducting appropriate statistical analyses. Adherence to established guidelines, such as STROBE (STrengthening the Reporting of OBservational studies in Epidemiology), is recommended to enhance research quality.

Findings from Table 3 show that most participants in both groups were female, which is broadly consistent with the predominantly female composition of the nursing profession reported by the World Health Organization (WHO, 2020). In terms of associated factors, gender was identified as a significant factor in some studies, although the direction of association was inconsistent across outcomes (Le et al., 2021; Mai et al., 2024). Differences between the two groups in age and practice experience may partially explain variations in EBP competencies, as students are primarily in the education phase, whereas nurses accumulate clinical experience. Despite high interest among students and substantial clinical experience among nurses, the proportion receiving EBP education remained below 30% in both groups, indicating a gap in formal education and continuing professional development.

Only about half of students had completed a research methods course or sought EBP-related information online, with many reporting that limited English proficiency was a substantial barrier (Dương et al., 2022; Lê & Kiều, 2025). Separate analysis for nurses was limited due to scarce data; however, available information indicated that under half of nurses held a bachelor's degree or higher, suggesting the need for continuing education tailored to diverse educational backgrounds.

Analysis of associated factors (see Table 5) indicated that year of study, place of residence, internet literacy, English proficiency, and prior EBP education were significantly associated with EBP competence among students. These findings are consistent with previous studies in LMICs, which have also reported that educational stage, access to resources, and prior education influence EBP knowledge and skills (Adombire et al., 2024; Gudeta et al., 2024; Li et al., 2024). In contrast, educational attainment, research experience, and EBP education were key factors associated with EBP competence among nurses, aligning with international evidence demonstrating that continuing education and professional experience are critical for enhancing EBP competence in practising nurses (Gudeta et al., 2024; Saunders & Vehviläinen-Julkunen, 2016).

Limitations

This systematic review adhered to the PRISMA 2020 guidelines and employed a reliable quality appraisal tool; however, there are several limitations. First, only 11 studies were included in the analysis, most of which employed convenience sampling and were conducted in urban settings, limiting the generalizability of the findings. Second, the small number of international publications reflects potential language barriers and limitations in research and academic writing capacity. Third, reporting quality was inconsistent, with some studies lacking control for confounding variables or failing to apply appropriate statistical analyses, thereby affecting reliability. Fourth, data on EBP-related barriers were scarce, preventing a comprehensive analysis. Finally, due to the small number of studies and insufficient detailed data, subgroup analyses and publication bias assessments could not be performed. Although we conducted sensitivity analyses comparing fixed-effects and random-effects models, we performed an additional sensitivity analysis using REML estimation of the between-study variance (τ^2), and the results were highly consistent with those obtained using the DerSimonian–Laird estimator (see Appendix E, Table 3, in the Supplementary File). The limited number of studies and substantial heterogeneity reduce the certainty of the pooled estimates. While we conducted a leave-one-out sensitivity analysis to assess the robustness of the pooled estimates, we did not perform sensitivity analyses stratified by study quality due to the limited number of included studies. Therefore, the pooled estimates should be interpreted cautiously and regarded as exploratory.

Despite these limitations, this review provides a valuable synthesis of the limited quantitative evidence on EBP competence among nursing students and nurses in Vietnam. Most included studies were descriptive and univariate, but the review nevertheless allowed identification of factors associated with EBP knowledge, attitudes, and skills/practice, offering insights to guide policy, education, and future research. These limitations and strengths highlight the need for more robust, large-scale quantitative studies with multivariate analyses, rigorous designs, and comprehensive reporting to strengthen the evidence base and advance EBP in Vietnam.

Implications for Practice

This review provides valuable, though preliminary, evidence to guide evidence-based nursing education and practice in Vietnam, a context still facing considerable challenges in resources, educational infrastructure, and research capacity. Given the limited number of robust studies and the predominance of descriptive, univariate designs, these findings should be interpreted with caution; nevertheless, they highlight key areas for targeted interventions, such as EBP education, English proficiency support, and integration of research methods into nursing curricula.

First, most included studies reported generally positive attitudes towards EBP among nursing students and practising nurses; although these findings are based on descriptive evidence, they suggest a potential foundation for EBP development, while the observed gaps in knowledge and skills/practice highlight the need for stronger integration of EBP into curricula. Structured courses that combine theory and practice, supported by simulation-based learning, online modules, or clinical mentorship, may help strengthen EBP competencies (Agure et al., 2024; Ahmed et al., 2025; Hill et al., 2024; Sapri et al., 2022). For less-experienced nurses, continuing professional development programs as well as mentorship from advanced practice nurses can strengthen competencies and foster a culture of clinical inquiry (Agnel et al., 2025).

Second, enhancing access to EBP resources, particularly specialized medical English skills and literature search capabilities, is critical for advancing clinical practice and academic development in

Vietnam. Nursing students face significant barriers in accessing research evidence, a challenge also reported in other LMICs (Pham et al., 2024; Zhang et al., 2023). Targeted education in medical English, critical appraisal, and open-access platforms (e.g., PubMed Central, DOAJ) should be prioritized. Subscription costs remain a key obstacle; thus, leveraging open-access initiatives, such as those from WHO and Wellcome Open Research, can facilitate effective EBP implementation (Newton, 2020).

Finally, system-level policy support is essential. Common barriers include time constraints, workload demands, and subscription costs for scholarly resources. Hospitals should consider reducing administrative hours and providing financial support for nurses to engage in EBP learning. In Ethiopia, associated factors such as knowledge, positive attitudes, communication skills, and access to EBP guidelines underscore the importance of education and organizational support (Wudu et al., 2024). Multifaceted educational strategies such as online learning and mentorship, when contextually adapted, are not only effective but also cost-efficient (Portela Dos Santos et al., 2022). Academic institutions and hospitals should invest in digital libraries, search tools, scientific writing programs, publication funds, and the promotion of reporting standards such as STROBE and PRISMA. Furthermore, fostering a research culture through academic interest groups, in-house conferences, and EBP research awards can encourage sustained engagement. Evidence suggests that combining individual and organizational factors, such as education, managerial support, and infrastructure investment, is a prerequisite for effective EBP implementation in community nursing (Mathieson et al., 2019).

Conclusion

This systematic review provides preliminary evidence that both nursing students and practising nurses in Vietnam hold positive attitudes towards EBP yet still exhibit gaps in knowledge and skills/practice. Key factors associated with EBP competence included educational attainment, English reading proficiency, research experience, and prior EBP education. Reported barriers included limited time, heavy workloads, and restricted access to scientific literature. To strengthen EBP capacity in nursing, structured education programs, enhanced language and information literacy skills, and improved academic infrastructure and institutional policies are required. These findings may help inform future educational, organizational, and research initiatives, thereby promoting the uptake of EBP to improve the quality of health care delivery in Vietnam.

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