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Knowledge and attitude about evidence-based practice in Iranian nurses: A systematic review

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Abstract

The objective of this systematic review was to assess the knowledge and attitudes of Iranian nurses regarding evidence-based practice. A comprehensive and systematic search was conducted across various international electronic databases, including Scopus, PubMed, and Web of Science, as well as Persian databases such as Iranmedex and the Scientific Information Database (SID). The search utilized keywords derived from Medical Subject Headings (MeSH), such as “knowledge”, “attitude”, “evidence-based practice”, and “nurses”, covering studies published up to June 28, 2025. The quality of the included studies in this systematic review was assessed using the Appraisal Tool for Cross-Sectional Studies (AXIS). A total of 1,314 nurses were included across eight cross-sectional studies. The findings revealed that the knowledge of nurses regarding evidence-based practice was generally low in most studies. Several factors demonstrated a significant positive relationship with nurses’ knowledge of evidence-based practice, including level of education, work experience, age, attitude, practice, male gender, participation in evidence-based practice workshops, and having published articles in journals. Conversely, the number of beds in hospitals was found to have a significant negative relationship with knowledge. Additionally, the attitude of nurses towards evidence-based practice was reported as moderate in most studies. Factors such as level of education, work experience, practice, and having published articles in journals showed significant positive correlations with nurses’ attitudes toward evidence-based practice. In conclusion, this review reveals a significant gap between Iranian nurses’ supportive attitudes and their limited EBP knowledge. Bridging this divide will require concerted efforts in curriculum reform, professional development, and organizational support. With appropriate investment and leadership, the nursing profession in Iran can move toward more effective and widespread integration of evidence-based practice in clinical care.

Keywords: knowledge, attitude, evidence-based practice, nurses, Systematic review

1. Introduction

Care is considered one of the fundamental components of health services. Among all the care provided in medical settings (such as hospitals), nursing care holds special importance. Nurses, as members of the treatment team, need to use the best available evidence and valid research results in their performance (1). Providing high-quality care and services has been pursued as a priority in the healthcare system, especially concerning nursing services.

Nurses are expected to deliver care services with the highest standards of quality and quantity based on scientific findings (2). They continually acquire the necessary ability to make clinical decisions in care provision by reviewing care procedures (3). In the healthcare field, evidence is defined as knowledge available to decision-makers that provides scientific evaluation of performance. EBP is recognized as an indicator of healthcare quality and is vital for improving the health system (4).

Nurses in healthcare organizations must use evidence-based methods and research to assess and enhance their skills. They should formulate and implement necessary policies and procedures, perform effective clinical interventions, and provide appropriate care plans to improve patient outcomes (5, 6).

EBP is an integration of clinical expertise, the latest and best available research evidence, as well as the unique values and conditions of the patient. This type of practice is highly important for nurses and the nursing profession because it offers multiple benefits; it helps nurses build their knowledge base, reduces the gap between nursing education, research, and practice, standardizes nursing practices (7), improves patients' clinical outcomes, enhances the quality of health services, and reduces healthcare costs (5, 8). Therefore, clinical decision-making by nurses should be based on the best and most up-to-date research evidence (9).

In recent years, EBP has been recognized globally as one of the most transformative approaches in the nursing profession. The main goal of EBP is to apply the best scientific evidence alongside clinical expertise and patients' values and preferences in care decision-making (10, 11). Among the benefits of evidence-based care are improved quality of care and health outcomes, increased patient safety, standardized care, and enhanced patient satisfaction (2). Moreover, implementing EBP principles can reduce the gap between research and clinical practice and promote the independent identity of nursing (1).

Despite the importance of EBP and decades since its introduction, nurses still face numerous barriers and challenges in its implementation (12). In fact, the barriers to EBP implementation among Iranian nurses are multidimensional and numerous. According to the study by Khaloobagheri et al., the challenges and barriers include misalignment of organizational strategies, human factors, educational, research, cultural issues, and lack of necessary resources and equipment (13). According to Naderkhah et al., major barriers to EBP among Iranian nurses include lack of physician participation, lack of permission from managers, time constraints, and insufficient rate of new publication. Research and IT skills were also highlighted as barriers (4).

Another existing challenge is the level of knowledge and attitude of nurses toward EBP (14, 15). Multiple studies emphasize that nurses' knowledge and attitude are two key factors in the success or failure of EBP implementation. In Iran, studies show that the majority of nurses lack sufficient familiarity with the concepts, resources, and methods of EBP and often lack the confidence needed to search for and apply scientific evidence in patient care (14, 16, 17).

In this regard, given the necessity to examine nurses' knowledge and attitude about EBP, the present study aims to determine the knowledge and attitude of Iranian nurses regarding evidence-based practice through a systematic review approach.

2. Methods

This systematic review was conducted in accordance with the guidelines outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist (18). However, it should be noted that the review was not registered in the PROSPERO database, the international prospective register of systematic reviews.

2.1. Search strategy

A thorough and systematic search was conducted across several international electronic databases, including Scopus, PubMed, Web of Science, as well as Persian databases such as Iranmedex and the Scientific Information Database (SID). The search utilized keywords derived from Medical Subject Headings (MeSH), such as "knowledge," "attitude," Evidence based practice" and "Nurses," covering studies published up to June 28,

2025. For instance, the search strategy in the PubMed/MEDLINE database included the following terms: ("Knowledge") AND ("attitude") AND (("Evidence based practice") OR ("Evidence-based nursing")) AND (("Nurses") OR ("Nursing") OR ("Iranian nurses")), with the Boolean operators "OR" and "AND" used to combine search phrases. Equivalent Persian terms were applied to searches in Iranian electronic databases. Two researchers independently performed an extensive search to ensure comprehensive coverage. However, gray literature—such as expert opinions, conference presentations, theses, research and committee reports, and ongoing research—was excluded from this review. Gray literature refers to works that have not been formally vetted for commercial publication, either in print or electronically (19).

2.2. Inclusion and exclusion criteria

The present systematic review focused on cross-sectional studies published in English and Persian that assessed the knowledge and attitude about Evidence based practice in Iranian nurses. Studies with experimental designs, reviews, case reports, conference abstracts, letters to the editor, and qualitative research employing qualitative methodologies were excluded from the analysis.

2.3. Study selection

The systematic review utilized EndNote X8 as the data management tool. Following the established inclusion and exclusion criteria, two researchers independently reviewed the study titles, abstracts, and full texts of the selected publications, while duplicate studies were removed through both manual and electronic methods. Any disagreements between the two researchers during the study selection process were resolved by a third researcher. Additionally, the references were meticulously reviewed to ensure no data was overlooked.

2.4. Data extraction and quality assessment

In this review, the researchers extracted various details from the included studies, such as the name of the first author, year of publication, study location, sample size, gender distribution, age, marital status, educational level, work experience, type of questionnaire used, and key findings. The quality of the studies was assessed using the Appraisal Tool for Cross-Sectional Studies (AXIS), which evaluates 20 items on a two-point Likert scale, with responses of "yes" (score of 1) or "no" (score of 0). The AXIS tool examines three aspects: reporting quality (7 items), study design quality (7 items), and potential biases (6 items). Based on the AXIS scoring system, studies are categorized into three quality levels: high (70–100%), fair (60–69.9%), and low (0–59.9%) (20). The extracted data and the quality assessment of the studies were independently conducted by two researchers.

3. Results

3.1. Study selection

As illustrated in **Figure 1**, the systematic search of electronic databases initially identified 2,280 studies. Following the removal of 439 duplicate records, 1,841

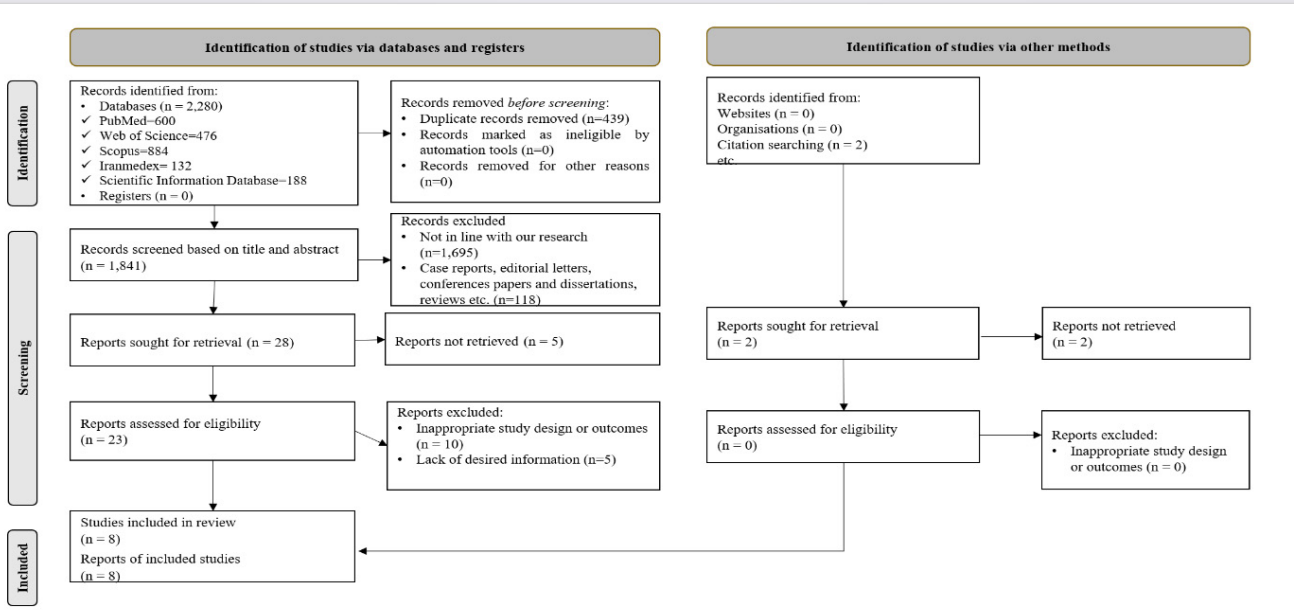


Figure 1. Flow diagram of the study selection process.

articles remained for further screening. Among these, 118 studies were excluded because they did not utilize a cross-sectional design, while 1,695 articles were disqualified for failing to align with the objectives of the review. Additionally, ten studies were excluded due to inadequate methodology or results, and five studies were dismissed because of insufficient data after a thorough evaluation of their full texts. Ultimately, eight studies met the inclusion criteria and were retained for this systematic review.

3.2. Study characteristics

As mentioned in **table 1**, in total, 1314 Iranian nurses in eight cross-sectional studies (2, 4, 15-17, 21-23). Of the participants, 83.64% were female and 93.76% had a Bachelor of Science in Nursing (BSN) degree. The mean age of participants was 31.85 (SD=29.47) years. The studies included in this systematic review were conducted in Iran (n=8) (2, 4, 15-17, 21-23).

3.3. Methodological quality of included study

As depicted in **Figure 2**, all the studies included (2, 4, 15-17, 21-23) were classified as high quality. However, five studies (4, 17, 21-23) did not provide information on research limitations, and four studies (15, 16, 21, 23) failed to disclose funding sources or potential conflicts of interest.

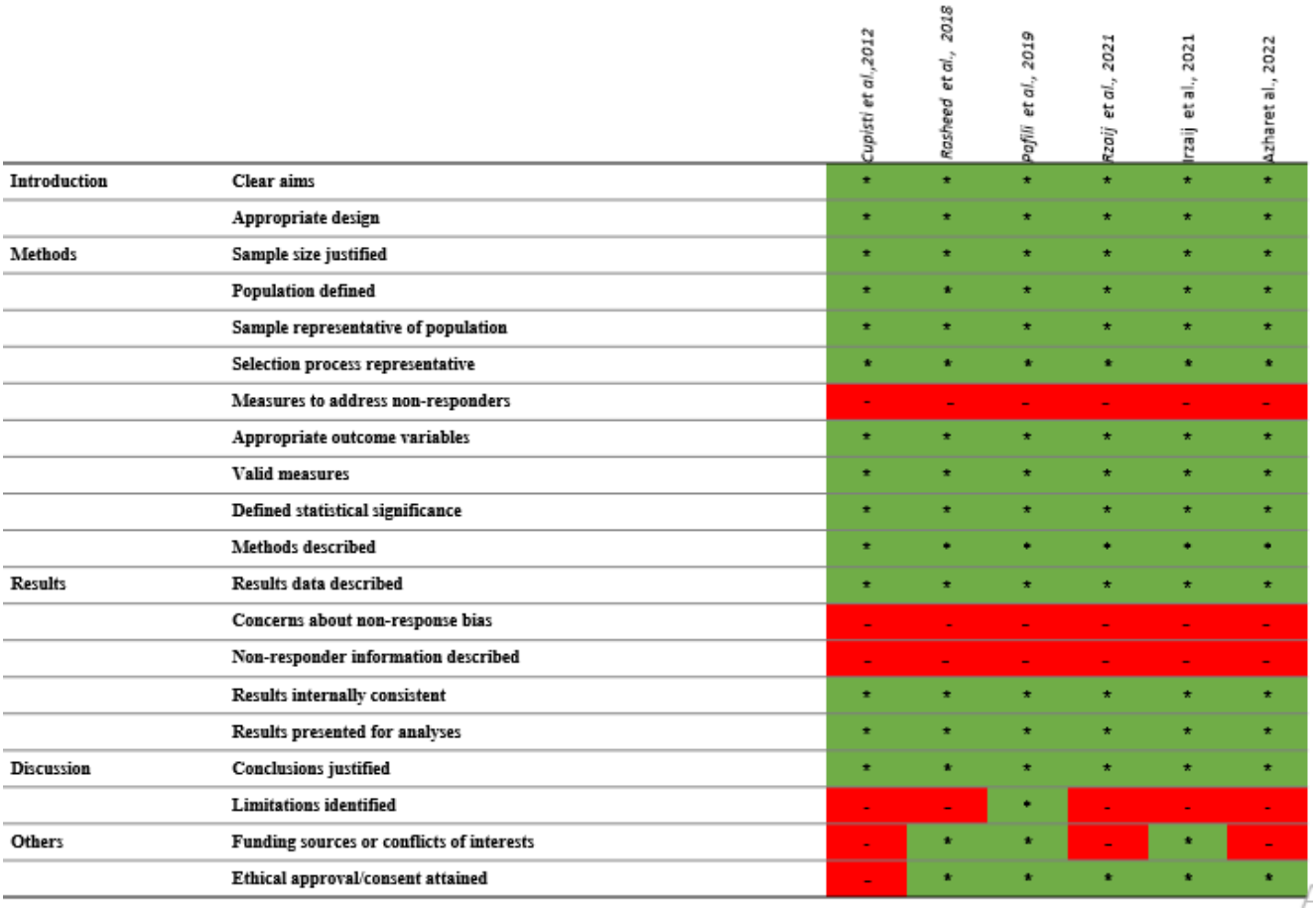
3.4. Knowledge of nurses towards Evidence based practice

As mentioned in **table 1**, the knowledge of nurses towards Evidence based practice in most studies (2, 16, 17, 21, 23) was low.

Table 1. Basic characteristics of the included studies in this systematic review.

First Author/year	Location	Ward	Sample Size	M/F ratio (%)	Age (mean ±SD)	Single/ Married ratio (%)	Level of education (%)	Work experience (mean±SD)	Questionnaire	Knowledge (mean±SD)	Knowledge (%)	Attitude (mean±SD)	Attitude (%)	AXIS Score
Heydari *et al.*, 2014 (16)	Iran	CCU ICU Emergency Medical-surgical Maternity Oncology	240	19.17/80.83	31.0 (SD=5.5)	N/A	BSN: 97.08 MSN: 2.92 PhD: -	6.5 (SD=4.7)	Researcher made (0 to 6)	N/A	Low: 89.6 Moderate: 7.9 High: 2.5	N/A	Low: 7.9 Moderate: 65.8 High: 26.3	High
Farokhzadian *et al.*, 2015 (15)	Iran	N/A	70	18.6/81.4	N/A	N/A	BSN: 87.14 MSN: 12.86 PhD: -	N/A	Researcher made (1 to 5)	N/A	N/A	2.55 (SD=0.88)	N/A	High
Shahidi Far *et al.*,2015 (23)	Iran	Intensive care unit	120	11.67/88.33	31.61 (SD=35.09)	25.00/75.00	BSN: 96.67 MSN: 3.33 PhD: -	7.51 (SD=5.11)	Researcher made questionnaire (0 to 10)	4.67 (SD=1.32)	N/A	N/A	N/A	High
Naderkhah *et al.*,2016 (4)	Iran	N/A	250	20.00/80.00	32.00 (SD= 6.37)	N/A	N/A	N/A	Evidence-Based Practice Questionnaire (EBPQ) (0 to 100)	N/A	Moderate: 60.40	N/A	Moderate: 66.80	High
Dehghani *et al.*, 2017 (21)	Iran	CCU ICU	120	12.5/87.5	N/A	N/A	BSN: 100 MSN: - PhD: -	N/A	Researcher made (12 to 37 knowledge and 9 to 29 weak)	22.35 (SD=4.31)	Low: 31.7 Moderate: 61.7 High: 6.6	23.88 (SD=1.86)	Low: - Moderate: 14.2 High: 85.8	High
Rohollah *et al.*, 2017 (2)	Iran	N/A	260	6.9/93.1	31.9	N/A	N/A	8.1	evidence-based practice questionnaire (1 to 7)	3.74 (SD=1.1)	N/A	3.87 (SD=1.4)	N/A	High
Yeganeh *et al.*,2019 (17)	Iran	emergency	129	10.08/89.92	32.74 (SD= 70.10)	N/A	BSN: 97.67 MSN: 2.33	N/A	Researcher made questionnaire (0 to 100)	40.07 (SD= 16.46)	N/A	N/A	N/A	High
Senmar *et al.*,2021 (22)	Iran	Pediatric and Neonatal units	125	32.00/68.00	N/A	N/A	BSN: 84.00 MSN: 16.00	N/A	Rubin and Parrish questionnaire (10 to 50)	36.70 (SD= 5.60)	N/A	45.40 (SD= 4.70)	N/A	High

Figure 2. Assessment of the quality of the included articles.



		Cupisti et al.,2012	Rasheed et al., 2018	Pojjii et al., 2019	Rzoij et al., 2021	Irzaij et al., 2021	Azharet al., 2022
Introduction	Clear aims	+	+	+	+	+	+
	Appropriate design	+	+	+	+	+	+
Methods	Sample size justified	+	+	+	+	+	+
	Population defined	+	+	+	+	+	+
	Sample representative of population	+	+	+	+	+	+
	Selection process representative	+	+	+	+	+	+
	Measures to address non-responders	-	-	-	-	-	-
	Appropriate outcome variables	+	+	+	+	+	+
	Valid measures	+	+	+	+	+	+
	Defined statistical significance	+	+	+	+	+	+
	Methods described	+	+	+	+	+	+
Results	Results data described	+	+	+	+	+	+
	Concerns about non-response bias	-	-	-	-	-	-
	Non-responder information described	-	-	-	-	-	-
	Results internally consistent	+	+	+	+	+	+
	Results presented for analyses	+	+	+	+	+	+
Discussion	Conclusions justified	+	+	+	+	+	+
	Limitations identified	-	-	+	-	-	-
Others	Funding sources or conflicts of interests	-	+	+	-	+	-
	Ethical approval/consent attained	-	+	+	+	+	+

3.5. Factors related to knowledge of nurses towards Evidence based practice

As mentioned in **table 2**, the education level of nurses (n=2) (16, 17), work experience (n=2), age (n=2) (21, 23), attitude (n=1), practice (n=1) (4), male gender (n=1) (21), participated in evidence-based practice workshop (n=1) and published articles in journals (n=1) (22) had significant positive relationship with knowledge. Also number of beds in the hospitals (n=1) (17) had a significant negative relationship with knowledge.

3.6. Attitude of nurses towards Evidence based practice

As mentioned in **table 1**, the attitude of nurses towards Evidence based practice in most studies (2, 4, 15, 16, 22) was moderate.

3.7. Factors related to Attitude of nurses towards Evidence based practice

As mentioned in **table 2**, level of education (n=1) (16), work experience (n=1) (15), practice (n=1) (4), published articles in journals (n=1) (22) and age (n=1) (15) had significant positive relationships with Attitude. Also, age (n=1) (21) had a significant negative relationship with Attitude.

4. Discussion

This systematic review highlights that Iranian nurses generally exhibit low levels of knowledge regarding EBP, despite holding moderately positive attitudes toward its importance. This discrepancy suggests that while nurses recognize the value of EBP in improving care, many lack the essential knowledge and skills required to apply it effectively in clinical settings.

The consistently low knowledge scores across studies point to a significant educational shortfall (2, 16, 17, 21, 23). This may be attributed to limited coverage of EBP in undergraduate nursing programs, inadequate access to ongoing professional development opportunities, and minimal hands-on experience with research and evidence appraisal during clinical training (24). Additionally, the demanding workload in many healthcare environments likely reduces the time and energy nurses can dedicate to engaging with evidence-based

Table 2. Related factors of knowledge and attitude toward EBP in nurses

First Author/year	Knowledge		Attitude	
	Positive	Negative	Positive	Negative
Heydari *et al.*, 2014 (16)	Level of education (P=0.005)	-	Level of education (P<0.001)	-
Farokhzadian *et al.*, 2015 (15)	-	-	Age (P=0.01) Work experience (P=0.02)	-
Shahidi Far et al.,2015 (23)	Age (P= 0.023) Work experience (P= 0.0017)	-	-	-
Naderkhah et al.,2016 (4)	Attitude (p= 0.00) Practice (0.00)	-	Practice (p= 0.001)	-
Dehghani *et al.*, 2017 (21)	Age (P=0.009) Male gender (P=0.001) Work experience (P=0.004)	-	-	Age (P=0.001)
Rohollah *et al.*, 2017 (2)	-	-	-	-
Yeganeh et al.,2019 (17)	Level of education (p=0.07)	number of beds in the hospitals (p<0.001)		-
Senmar et al.,2021 (22)	Participated in evidence-based practice workshop (p<0.001). published articles in journals (p<0.001)	-	published articles in journals (p=0.018)	-

resources (25).

On the other hand, the moderate attitudes observed in several studies reflect a noteworthy openness and willingness among nurses to engage with EBP (2, 4, 15, 16, 22). This is an encouraging sign for nursing leaders and health policymakers, as it suggests that with the right support such as accessible training, managerial encouragement, and system-level facilitation nurses' attitudes could serve as a catalyst for change rather than a barrier.

Demographic and professional characteristics were found to influence EBP knowledge and attitudes. Nurses with higher academic qualifications, particularly those with master's degrees, consistently showed stronger knowledge and more favorable attitudes (16, 17). This implies that graduate-level education may provide more robust exposure to research literacy, critical thinking, and evidence-based decision-making skills that are essential for EBP. Supporting academic advancement among nurses could therefore be a key strategy for strengthening EBP capacity.

However, the relationship between other factors such as age, gender, and work experience was less consistent. Some studies found that male nurses had lower EBP knowledge, while age and experience were not always predictive of greater competency (14, 15, 23). These findings highlight the need for targeted, context-sensitive educational interventions. Younger or less experienced nurses may benefit from foundational EBP training, while older or more experienced nurses may require motivational strategies or updated learning formats to renew their engagement with evidence-based care.

Importantly, years of professional experience alone did not consistently correlate with higher EBP knowledge, likely due to a lack of structured, ongoing training. This underscores the importance of lifelong learning programs and organizational systems that reinforce EBP throughout a nurse's career, rather than relying solely on accumulated experience.

Overall, EBP readiness appears to be shaped by a complex interaction of educational, experiential, and demographic factors. Tailoring training opportunities and

policies to address these diverse influences could help establish a more equitable and consistent culture of evidence-based care within Iran's nursing workforce.

Finally, it is essential to interpret these findings in light of certain methodological limitations. Many of the included studies relied on researcher-developed questionnaires with limited validation, and sample sizes or settings were not always representative. These factors reduce the comparability of results and highlight the need for future studies to adopt standardized, psychometrically sound tools. Conducting large-scale, methodologically rigorous research will be crucial for gaining a clearer national picture of EBP competencies and gaps.

In conclusion, this review reveals a significant gap between Iranian nurses' supportive attitudes and their limited EBP knowledge. Bridging this divide will require concerted efforts in curriculum reform, professional development, and organizational support. With appropriate investment and leadership, the nursing profession in Iran can move toward more effective and widespread integration of evidence-based practice in clinical care.

4.1. Limitations

This systematic review has several important limitations. The number of eligible studies was relatively small, and all were conducted within Iran, which limits the generalizability of the findings to broader or more diverse nursing populations. Additionally, most studies used researcher-made questionnaires with varying formats and unclear psychometric properties, which introduces challenges in comparing results and may affect the validity of the findings.

Another limitation lies in the methodological heterogeneity among the included studies. Differences in sampling methods, participant characteristics, and data collection tools make it difficult to synthesize findings in a standardized manner. Moreover, all of the included studies were cross-sectional, which restricts the ability to establish causal relationships between demographic factors and EBP-related knowledge and attitudes.

4.2. Implications for health managers and policymakers

The findings of this review have meaningful implications for healthcare managers, nursing leaders, and policymakers aiming to improve EBP in clinical settings. The consistently low level of EBP knowledge among Iranian nurses suggests a significant gap in the current nursing education and continuing professional development systems. Addressing this gap requires a multifaceted approach that includes revising nursing curricula to embed EBP principles early in undergraduate education and reinforcing them throughout clinical training.

Healthcare institutions should also invest in structured, accessible, and ongoing EBP training programs for practicing nurses. These programs need to be tailored to the needs of different demographic groups particularly those with lower academic qualifications or limited prior exposure to research while also considering age, gender, and experience-based differences in learning preferences and motivations.

From an organizational standpoint, creating a culture that values EBP is essential. This includes ensuring access to updated scientific resources, allocating protected time for evidence review, and providing supportive leadership that encourages inquiry and innovation. Nurse managers can play a key role by serving as role models, mentoring staff in critical appraisal and decision-making skills, and integrating EBP goals into performance evaluations and institutional standards.

At the policy level, national nursing regulatory bodies and the Ministry of Health can promote EBP adoption by integrating it into licensing requirements, accreditation standards, and quality improvement initiatives. Establishing national guidelines or frameworks for EBP education and practice would also help ensure consistency and accountability across healthcare institutions.

In sum, strengthening the infrastructure for EBP through educational reform, institutional support, and policy alignment is essential for closing the gap between nurses' moderate attitudes and their limited knowledge, ultimately improving the quality and safety of patient care.

4.3. Implication for future research

This review highlights several gaps in the current literature that future research should aim to address. First, there is a clear need for studies that explore not only knowledge and attitudes, but also the actual implementation and practice of EBP among nurses. Understanding how knowledge and attitudes translate or fail to translate into clinical behaviors is essential for designing effective interventions.

Future research should also focus on the development and validation of standardized tools for assessing EBP

knowledge, attitude, and practice. The current reliance on researcher-made questionnaires with varying quality limits the comparability of results across studies and weakens the evidence base. Validated, culturally adapted instruments would enhance the reliability and generalizability of future findings.

Longitudinal and interventional study designs are also needed. Cross-sectional studies, while useful for identifying associations, cannot establish causality or track changes over time. Longitudinal research could help determine how EBP competencies evolve with experience, training, or changes in policy. Intervention studies could evaluate the effectiveness of targeted educational programs, mentorship models, or institutional strategies in improving EBP adoption.

Moreover, future studies should consider larger and more diverse samples, representing different regions, hospital types, and clinical specialties within Iran. Including perspectives from nurse educators, administrators, and policymakers could also enrich the understanding of systemic barriers and enablers of EBP.

Finally, qualitative or mixed-methods approaches may offer deeper insights into the contextual and cultural factors that shape nurses' engagement with EBP. Exploring nurses' personal experiences, perceptions, and challenges could inform more tailored and sustainable interventions for EBP promotion.

5. Conclusion

This systematic review revealed that Iranian nurses generally hold a moderate attitude but demonstrate low levels of knowledge regarding EBP. While the positive attitude indicates a readiness to embrace EBP, the significant knowledge gap highlights a need for educational and organizational interventions. Demographic factors such as education level, age, and gender may influence EBP competence, underscoring the importance of tailored strategies. To promote effective implementation of EBP in Iranian healthcare settings, nursing education curricula must be strengthened, institutional support must be enhanced, and national policies should prioritize EBP integration as a core component of professional nursing development.

6. Declrations

Ethical Approval and Consent to Participate

Not applicable to this study.

Availability of Data and Materials

The datasets used during the current study are available from the corresponding author upon request.

Conflict of Interest

We do not have potential conflicts of interest concerning the research, authorship, and publication of this article.

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There was no source of funding for this systematic review study.

Author's Contributions

All authors: idea for the review, study selection, data extraction, interpretation of results, writing of the manuscript. All authors: study selection, data extraction, interpretation of results, writing of the manuscript. All authors: idea for the review, data extraction, and writing of the manuscript. All authors: study selection, writing of the manuscript. All authors contributed to the interpretation of the findings, approved the final version of the manuscript, and agree to be accountable for all aspects of the work.

All authors have read and approved the final version of the manuscript.

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Artificial Intelligence Statement

The authors used an artificial intelligence (AI)-assisted language tool solely to improve the readability and language of the manuscript. All scientific content, study design, data collection, data analysis, interpretation of the findings, and final editorial decisions were performed entirely by the authors. The authors have reviewed and approved the final manuscript and accept full responsibility for its accuracy and integrity.

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