

Literature Review: The Importance of Evidence-Based Practice Learning and Undergraduate Nursing Students' Knowledge of Wound Care Evidence

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ABSTRACT

Background & Objective: EBP is a combination of the best research evidence, the experience and professional skills of nurses, as well as patients' values and desires (Cardoso et al., 2021). One of the medical fields that greatly requires an EBP approach is wound care. Wound care has undergone significant evolution, from conventional methods (such as allowing wounds to dry or using antiseptics that damage tissue) to modern wound care (moist wound healing). Therefore, assessing undergraduate nursing students' knowledge of evidence-based wound care is an important indicator in evaluating the success of educational institutions in implementing an EBP-based curriculum. **Method:** This study uses a literature study method. The aim is to examine the latest evidence regarding the importance of evidence-based learning. **Result:** Evidence-Based Practice (EBP) learning is an essential pillar in modern undergraduate nursing education. In the context of wound care, EBP has shifted the old paradigm that harmed patients toward moist wound healing methods, which scientifically accelerate healing. **Conclusion:** Currently, the level of nursing students' knowledge regarding wound care evidence is at an intermediate level, where the theory they have mastered is not yet fully aligned with their ability to apply it in the field. The greatest barriers stem from differences in practice culture between the academic environment and the reality in hospitals, as well as the lack of clinical role models who implement modern wound care (Lommi et al., 2023).

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Introduction

The nursing profession must continue to develop in line with advances in science and technology in the healthcare field. The greatest paradigm shift in nursing has been the transition from practice based on experience or intuition to practice based on scientifically accountable evidence, known as Evidence-Based Practice (EBP). EBP is a combination of the best research evidence, nurses' professional experience and skills, as well as patients' values and preferences (Cardoso et al., 2021).

Undergraduate nursing education plays an important role in shaping the character and competence of future nurses. Nursing students must be equipped not only with psychomotor skills but also with critical thinking abilities to search for, assess, and apply scientific evidence. Evidence-based practice is a very important skill for undergraduate nursing students to understand, as they will become professional and competent nurses in carrying out nursing practice in clinical settings (Härkönen & Oikarinen, 2025). Evidence-based learning can help students learn to make quick and effective clinical decisions, improve their problem-solving abilities, and enhance their critical thinking skills. During the learning stages of the evidence-based practice approach, students are guided in solving problems accurately and innovatively through the five stages of EBP, starting from formulating clinical questions to finding the best and most relevant solutions (Dusin et al., 2023).

One of the medical fields that greatly requires an EBP approach is wound care. Wound care has undergone significant evolution, from conventional methods (such as allowing wounds to dry or using antiseptics that damage tissue) to modern wound care (moist wound healing). Therefore, assessing undergraduate nursing students' knowledge of evidence-based wound care is an important indicator in evaluating the success of educational institutions in implementing an EBP-based curriculum, as stated by Ubbink et al. in 2015.

Objective

The purpose of this literature review is to analyze and summarize various available literature sources regarding:

- 1) The significance and urgency of EBP learning in undergraduate nursing curricula.
- 2) Evidence-based wound care.
- 3) The current level of understanding and knowledge among undergraduate nursing students regarding evidence-based wound care practices.
- 4) The barriers and challenges perceived by students in learning and implementing EBP in clinical settings, particularly in understanding wound care.

Method

This article uses a literature review method. The review was conducted on sources discussing Evidence-Based Practice learning among nursing students, students' competencies and knowledge regarding EBP, the implementation of evidence-based wound care, and barriers to implementing EBP in clinical practice. The synthesis was conducted narratively by grouping information into several areas of focus, namely the urgency of EBP learning, the development of wound care, students' level of knowledge, learning barriers, and strategies for bridging the gap between theory and practice. The source document does not explain in detail the

databases used, search strategies, inclusion and exclusion criteria, or the number of articles reviewed. Therefore, these details need to be completed if the article is to be submitted to a journal that requires a systematic or scoping review methodology.

Results

Concept and Importance of Evidence-Based Practice (EBP) Learning among Nursing Students

EBP is not merely an additional subject, but a framework that should serve as the foundation of all nursing care services. EBP learning at the undergraduate level aims to change students' way of thinking from "we have always done things this way" to "is there better clinical evidence to support this action?"

- a) **Improving Patient Quality and Safety:** Various studies have shown that healthcare services based on scientific evidence significantly reduce mortality rates, the severity of conditions, and problems that arise during hospital care. Students who understand EBP will become professionals who prioritize patient safety.
- b) **Improving Critical Thinking Skills:** EBP teaches students how to formulate clinical questions using the PICO/PICOT format (Population, Intervention, Comparison, Outcome, Time). In this process, students are required not simply to accept information at face value, but to critically evaluate the journals and literature they encounter.
- c) **Standardization of Nursing Practice:** EBP learning helps reduce variations in nursing practices across hospitals. When students are taught interventions supported by the strongest scientific evidence, nursing care becomes more standardized and effective (Dusin et al., 2023).

Wound Care as a Field of Nursing Practice

Wound care is a field of nursing that is rapidly evolving and highly dependent on evidence from the latest research. In the past, wound care commonly involved the use of wet-to-dry dressings, povidone-iodine, or leaving wounds open to dry naturally and form a scab. Current scientific evidence (EBP) clearly rejects these practices because they can damage newly formed granulation tissue and hinder epithelial cell migration (Ferdiansyah Mahyudin, Mouli Edward, M.). Wound healing based on maintaining balanced moisture (Moist Wound Healing) is a concept developed by George Winter in the 1960s and is now considered the gold standard in the field of EBP. Chronic Wound Management (TIME Concept):

Evidence-Based Practice (EBP) introduces the TIME framework (Tissue Management, Infection/Inflammation Control, Moisture Balance, and Edge of Wound Advancement) for managing chronic wounds such as diabetic ulcers or pressure ulcers. Knowledge of this concept should be mastered by nursing students, according to Brumberg and colleagues in 2021.

Level of Knowledge among Undergraduate Nursing Students Regarding Wound Care Evidence

A review of various global and local studies shows varying results regarding students' knowledge of evidence-based wound care. However, the findings generally indicate a pattern of a gap between theory and practice (theory-practice gap).

- a) **Theoretical Understanding vs. Clinical Reality:** Many senior nursing students possess adequate theoretical knowledge (moderate to high scores) when assessed in the classroom using questionnaires. They understand moist wound healing and the importance of handwashing and wound assessment. However, when placed in clinical settings, they often experience confusion (cognitive dissonance) (Legita, 2012).
- b) **Knowledge Gap in Dressing Selection:** Students are often not sufficiently updated on various types of modern dressings (such as hydrocolloid, hydrogel, calcium alginate, and foam). Research shows that many students still consider gauze as the primary dressing for all types of wounds, whereas EBP indicates that gauze is not the ideal primary dressing for wounds with moderate to heavy exudate.
- c) **Influence of Teaching Methods:** Students exposed to laboratory simulations using real case studies and recent journals demonstrate substantially higher levels of wound care evidence knowledge compared to those who receive only traditional, teacher-centered lectures (Abu-Baker et al., 2021).

Barriers to Learning and Implementing EBP in Wound Care among Students

Although the importance of EBP is recognized, the literature identifies several major barriers experienced by students:

- a) **Lack of Role Models in Teaching Hospitals:** This is the most significant barrier reported by students. What is taught at university (modern EBP) often differs from what senior nurses (CI/Preceptors) practice in clinical settings, where conventional methods are still used (for example, applying Betadine to diabetic wounds). Students feel that they do not have the authority to challenge senior practitioners.
- b) **Limited Resources:** Difficulties accessing paid international journals and the lack of modern dressing supplies in some regional hospitals make it difficult for students to observe the practical application of evidence-based wound care (Booth, 2012).
- c) **Language and Literacy Barriers:** Most of the best clinical journals and EBP guidelines are published in English. Many students experience difficulties understanding medical terminology and statistical methodologies in research articles.
- d) **Time Constraints:** Searching for literature, conducting critical appraisals, and synthesizing evidence require considerable time, which often conflicts with students' already demanding clinical workload (Elsi Dwi Hapsari, S.Kp, M.S., 2006).

In general, the barriers faced by students can be categorized into three main dimensions: Individual Barriers, Institutional/Academic Barriers, and Clinical Environment Barriers.

Individual Barriers (Cognitive and Psychological)

Students often have positive perceptions of EBP, but their technical abilities are frequently limited.

- a) **Information Literacy Gap:** Limited ability to conduct effective literature searches in international databases (such as PubMed or Cochrane) and weaknesses in critical appraisal (evaluating the quality of research articles).

- b) Language Limitations: Much of the latest research evidence is published in English, which presents a challenge for students in non-English-speaking countries.
- c) Low Self-Efficacy: Feelings of a lack of confidence in criticizing senior practitioners' practices in hospitals, even when those practices are inconsistent with the latest scientific evidence (Chien, 2019).

Institutional and Academic Barriers

Nursing education curricula play a major role in shaping EBP-oriented thinking.

- a) Curriculum Overload: The extensive amount of course material means that EBP is often discussed only superficially, without in-depth practical training.
- b) Lack of Faculty Role Models: If lecturers or clinical instructors do not demonstrate the integration of EBP into their teaching, students tend to view EBP merely as an academic assignment rather than a professional way of life (Marlina et al., 2020).

Clinical Environment Barriers (The Real-World Gap)

This is the most significant barrier students face during clinical practice.

- a) Conservative Organizational Culture: In many clinical settings, wound care procedures still use traditional methods (for example, using gauze and NaCl alone for all types of wounds) because they are considered more affordable and quicker.
- b) Authority and Hierarchy: Students often feel that they do not have the authority or position to suggest the use of modern dressings if senior nurses or physicians in the unit do not agree.
- c) Limited Resources: The unavailability of modern dressing equipment and materials in the hospitals where students undertake clinical practice forces them to return to conventional techniques.

Discussion

Integration

The integration of EBP in wound care is not a one-way process. The literature shows that students' success in absorbing wound care evidence knowledge is highly dependent on the educational and clinical ecosystem.

Bridging the Theory-Practice Gap

To address the gap between theoretical knowledge and clinical implementation, educational institutions and hospitals must collaborate. Clinical preceptors (CIs) must receive regular scientific updates (training of trainers) on modern wound care so that their practices are aligned with the university curriculum. If students see ward nurses applying moist wound healing, they will become more confident and motivated to maintain these evidence-based practices.

The Importance of an Integrated Curriculum

Knowledge of EBP cannot be taught only in a single "Research Methodology" course. EBP literacy must be integrated horizontally into Medical-Surgical Nursing courses, particularly when discussing the integumentary system and clinical wound care. The use of Problem-Based Learning (PBL), in which students are asked to search

for clinical journals to solve specific wound cases (e.g., “Is medical honey more effective than hydrogel for second-degree burns?”), has been shown to significantly improve students’ knowledge retention (Utami, 2018).

TABLE 1. Literature Synthesis: EBP & Knowledge of Undergraduate Nursing Students

Author (Year)	Database	Article Title	Method	Key Findings
(Jeong et al., 2024)	PubMed	Effectiveness of an Evidence-Based Practice Education Program for Undergraduate Nursing Students: A Systematic Review and Meta-Analysis	Systematic Review	The integration of EBP starting in the first year enhances nursing students’ competencies, critical thinking, and problem-solving skills.
(Tsong-Lan Chu a, 2025)	Science Direct	Nursing Students' Knowledge and Attitudes towards EBP: A Cross-Sectional Study	Kuantitatif (Survei)	Students have a positive attitude toward EBP, but their technical knowledge scores (such as statistical analysis of journal articles) fall into the moderate category.
(Tsong-Lan Chu a, 2025)	Pubmed	Solutions to bridge the theory-practice gap in nursing education in the UAE: a qualitative study	Qualitative study	Mentoring by clinical nurses in hospitals is crucial; without role models, students’ EBP knowledge tends to decline during clinical practice. A shift from an integrated curriculum to a block-based approach is needed in EBP education.
(Werdin et al., 2009)	PubMed	Evidence-based Management Strategies for Treatment of Chronic Wounds	Comparative Study	Understanding evidence-based treatment must begin with an understanding of the pathophysiology of chronic wounds. Interventions should focus on patient education.
(Cutting et al., 2017)	Science Direct	Evidence and practical wound care - An all-inclusive approach	Randomized Controlled Trial (RCT)	EBP in wound care indicates that wound care should take biological factors into account—whether in moist wound healing, negative pressure wound therapy, or wound dressing with gauze.

The majority of the literature from ScienceDirect indicates that undergraduate nursing students today have moved beyond the concept of dry wound treatment (conventional gauze). Their level of knowledge regarding the principles of moist wound healing and the use of modern dressings (such as hydrogel or foam) falls within the good category. However, knowledge regarding the cost-effectiveness of these dressings remains limited.

Executive Summary

Based on the synthesis above, it can be concluded that:

- 1) The Importance of the Curriculum: EBP learning cannot stand alone as a single course but must be integrated into all clinical courses (such as Medical-Surgical Nursing, Maternity Nursing, and Wound Care).
- 2) Main Barriers: Although students agree that EBP is important, they often experience difficulties with technical aspects such as critical appraisal of journals and implementation in clinical settings, where outdated (traditional) procedures are still frequently used.
- 3) Solution: The use of Active Learning methods (such as simulation and PBL) is more effective than one-way lectures (Mituhu et al., 2021).

Conclusion

Evidence-Based Practice (EBP) learning is an essential pillar of modern undergraduate nursing education. In the context of wound care, EBP has shifted the old paradigm that negatively affects patients toward moist wound healing methods, which scientifically accelerate the healing process. Currently, the level of nursing students' knowledge regarding wound care evidence is at an intermediate level, where the theory they have mastered is not yet fully aligned with their ability to apply it in clinical settings. The greatest barriers stem from differences in practice cultures between academic environments and the realities of hospitals, as well as the lack of clinical role models who implement modern wound care (Lommi et al., 2023).

Based on the literature review above, the following recommendations are proposed:

- 1) For Educational Institutions: Increase laboratory simulations (skill labs) that focus on evaluating the latest clinical journals related to modern wound dressings (modern dressings).
- 2) For Hospitals/Clinical Practice Settings: Strengthen collaboration with educational institutions to train clinical preceptors so that wound care practices in hospital wards remain up-to-date with EBP.
- 3) For Nursing Students: Improve medical information literacy skills and foreign language proficiency to enable them to independently access and critically review international journals.

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