

# **Advancements in Nursing Care: A Review of Evidence – Based Practices**

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## **ABSTRACT**

The nursing care has been changing significantly in the past few decades, driven by the uptake of evidence-based practice (EBP), new technologies, and a growing focus on patient-centred and holistic care. Evidence-based nursing will integrate the strongest evidence with clinical experience and patient preferences to guide clinical decision-making, improve safety, and improve health outcomes. This review summarises the main contributions to the nursing care, paying special attention to the standardisation of clinical procedures, the use of digital technologies and artificial intelligence, and the application of interdisciplinary teamwork. Standardised evidence-based practices including domains of infection control, management of analgesia, wound care, and chronic disease management have reduced practice variability, clinical errors, and have facilitated provision of high-quality care. Electronic health records, decision-support systems, telehealth modalities, computer-based educational programmes, and other technological advances have enabled the nurses to obtain evidence, improve their clinical judgment, and increase their efficiency in care. Taking into consideration patient-centred and holistic approaches emphasize the physical, emotional and social well-being of patients, thus promoting involvement, satisfaction and compliance with treatment regimens.

**Keywords:** Evidence-Based Nursing, Patient-Centred Care, Holistic Nursing, Clinical Protocols, Nursing Technology, Artificial Intelligence, Interdisciplinary Collaboration, Healthcare Quality

## **INTRODUCTION**

The field of nursing has been significantly changed in the last decades by the acceleration of medical science, medical technology, as well as the heightened emphasis on quality and safety indicators in patient care [1]. Another interesting trend is the evidence-based practice (EBP), which has turned out to be a pillar of modern nursing practice. EBP integrates the most effective research evidence and clinical knowledge with the preferences of the individual patients in order to make a decision [2]. Its adoption has transformed nursing into a tradition-based profession to a scientifically sound profession which puts the focus on effective, safe, and patient-centred care [3]. The advancement of nursing care is closely associated with the innovations in clinical interventions, patient-safety measures, health-informatics, as well as interdisciplinary collaboration [4]. Evidence based protocols have proven to be effective in management of acute and chronic diseases, diagnostic and therapeutic errors, and improved patient outcomes in a heterogeneous health-care environment [5]. Furthermore, information-technological tools integration, including electronic health records, clinical decision-support systems, and telehealth platforms, have helped the nurses to implement evidence in a more efficient and consistent method in their daily practice [6]. Patient-centred care has continued to be a central aspect of evidence-based nursing, which addresses respect to the values of the individual, cultural competence, and engagement of the patient in decision-making within the care [7].

The modern practice is also based on the necessity of the holistic care, which takes care of not only physical but also psychological, social, and emotional aspects of well-being [8]. Following evidence-based methods, nurses can be prepared to tailor interventions to the needs of the individuals, clarify the communication, and develop therapeutic relationships between nurses and patients [9]. In spite of these benefits, application of the evidence based practices in nursing faces considerable challenges such as time and inadequate access to research materials and inconsistencies in organisational support systems [10]. To address these obstacles, it is important to engage in constant education, take leadership initiative, and establish institutional policies that support one [11]. The following review is the reflection on recent nursing care development, including an emphasis on the evidence-based practices and outlines their implications regarding patient outcomes, nursing professionalism and quality of health-care in general [12]. The review highlights the inseparability of evidence-based nursing in advancing the current health-care delivery by synthesising the literature of the day [13].

## REVIEW

### **The Nursing Encyclopedia: Evidence-Based Practice.**

Evidence-based practice (EBP) is the main principle of modern nursing care because it harmoniously combines the strongest research evidence with clinical and patient preferences [14]. The extensive use of EBP has significantly increased the scientific rigor of any nursing interventions, which in turn ensures safety and effectiveness of care delivery, as well as conscientious patient-centred delivery [15]. Clinical guidelines, systematic reviews, and findings gained by empirical means are becoming increasingly important to nurses as references to be used in the process of their decision-making and to improve patient outcomes [16].

**Table 1: Table showing core elements of evidence-based practice in nursing care.**

Aspect	Description	Significance in Nursing Practice
<b>Evidence-Based Practice (EBP)</b>	Integration of research evidence, clinical expertise, and patient preferences	Ensures safe, effective, and patient-centred nursing care
<b>Research Evidence</b>	Use of clinical guidelines, systematic reviews, and empirical studies	Enhances scientific rigor and improves decision-making
<b>Clinical Expertise</b>	Application of nurses' professional knowledge and experience	Supports appropriate and context-specific interventions
<b>Patient Preferences</b>	Consideration of individual values, needs, and expectations	Promotes patient-centred and ethical care delivery
<b>Clinical Decision-Making</b>	Evidence-informed choices in nursing interventions	Improves patient outcomes and quality of care

### **Clinical Protocol Standardization.**

The methodical establishment and type of evidence-based clinical procedures is a major intellectual and operational improvement of the nursing profession. Regularised guidelines that have covered infection control, pain management, wound care and chronic disease management have proven to minimise variability in clinical practice and hence enhance patient safety. These guidelines enable the ability of nurses to provide uniform and quality care amidst reducing cases of clinical errors and complications [17].

**Table 2: Table showing standardized clinical protocols enhancing safety and care quality**

Area of Standardization	Evidence-Based Guidelines		Clinical Benefits
<b>Infection Control</b>	Standard protocols for hygiene, isolation, and prevention measures		Reduced infection rates and improved patient safety
<b>Pain Management</b>	Evidence-based pain assessment and intervention guidelines		Consistent pain relief and improved patient comfort
<b>Wound Care</b>	Standardized wound assessment and dressing protocols		Faster healing and reduced complications
<b>Chronic Disease Management</b>	Structured care pathways and monitoring guidelines		Improved disease control and continuity of care
<b>Overall Nursing Practice</b>	Uniform implementation of clinical protocols		Reduced practice variability, fewer clinical errors, and improved care quality

### **Technological Innovations that Can sustain Nursing practice.**

The modern technological advancements have been invaluable in supporting evidence-based nursing [18]. Clinical decision-support systems and electronic health records provide real-time access to extensive patient information and up-to-date evidence, therefore, making it possible to make empirically based and informed clinical judgments [19]. Online portals and remote examination technologies have increased the availability of care, particularly to those with long-term illnesses, and computer-based educational models have boosted the clinical competence and self-confidence of nurses [20].

**Table 3: Table showing Technological innovations supporting evidence-based and effective nursing practice.**

Technological Innovation	Description / Key Features	Impact on Nursing Practice
<b>Clinical Decision-Support Systems</b>	Provide real-time access to patient data and evidence	Enables informed, evidence-based clinical decisions

<b>Electronic Health Records (EHRs)</b>	Centralized digital storage of patient information	Improves documentation, continuity of care, and accuracy
<b>Online Portals and Remote Examination</b>	Platforms for telehealth and remote monitoring	Increases accessibility of care for patients with chronic conditions
<b>Computer-Based Educational Models</b>	Digital training and simulation programs	Enhances nurses' clinical competence, confidence, and skills

#### **Centred and Holistic Nursing Care of the patients.**

Patient-centred care is a fundamental philosophical idea of the evidence based nursing practice. Empirical studies prove that the engagement of the patient in the therapeutic process, paying attention to cultural values, and active consideration of psychological and social antecedents altogether leads to the increased patient satisfaction and better adherence to treatment [21]. The holistic nursing care also serves to underline the interconnectivity of physical, emotional, and social spheres, thus encouraging the global approach to healing and not only a symptom-driven treatment plan [22].

#### **Difficulties with Implementations of Evidence-Based Practices.**

Although it has numerous positive aspects, the centralized use of evidence-based nursing is hindered by numerous obstacles, such as time-related restrictions, workload pressure, the lack of access to research materials, and organizational barriers [23]. Continued professional training, effective leadership mentoring and institutional changes in policy will be necessary to promote an organisational culture that actively promotes the use of evidence-based nursing [24].

**Table 4: Table showing Challenges and strategies for implementing evidence-based nursing practice.**

<b>Challenge</b>	<b>Description</b>	<b>Recommended Strategies</b>
<b>Time Constraints</b>	Limited time available for nurses to review and apply evidence-based practices	Allocate protected time for research review and clinical reflection
<b>Workload Pressure</b>	High patient load reduces opportunity to implement evidence-based care	Adequate staffing and workload management
<b>Limited Access to Research</b>	Inadequate availability of journals, databases, and evidence-based resources	Improve access to digital libraries and research platforms
<b>Organizational Barriers</b>	Lack of institutional support and rigid policies	Policy reforms and leadership support

#### **Directions of Nursing Care in the Future.**

The future trends in nursing care are also expected to focus on the further enhancement of the use of technologies, the increased introduction of artificial intelligence, and the further development of the interdisciplinary collaboration [25]. Enhancing access to evidence-based materials and strengthening research capacity will also make nurses provide a high-quality care [26].

**Table 5: Table showing Future trends enhancing nursing care through technology and collaboration.**

<b>Future Trend</b>	<b>Focus Area</b>	<b>Expected Impact on Nursing Care</b>
<b>Technology Integration</b>	Expanded use of digital tools and healthcare technologies	Improves efficiency, accuracy, and quality of nursing care
<b>Artificial Intelligence</b>	Introduction of AI in clinical decision-making and patient monitoring	Enhances clinical judgment and supports personalized care
<b>Interdisciplinary Collaboration</b>	Strengthening teamwork among healthcare professionals	Promotes coordinated, comprehensive, and patient-centred care
<b>Access to Evidence-Based Resources</b>	Improved availability of research materials and guidelines	Enables informed decision-making and consistent quality care

## **DISCUSSION**

The given review supports the importance of evidence-based practice (EBP) as a key factor in the process of the development of modern nursing care [27]. Integration of research evidence, clinical experience, and patient preference have proven to be beneficial in increasing the safety, effectiveness, as well as the overall quality of nursing interventions [28]. Moreover, the use of standardized clinical practices has limited practice variability, lesser occurrences of errors, and enhanced patient safety in different healthcare environments. Patient-centred and holistic measures are parts and parcel of

EBP, therefore, leading to high patient satisfaction and better treatment adherence [29]. The use of technology, including digital platforms and artificial intelligence, has also strengthened effective decision-making and care delivery [30]. However, there are still persistent barriers such as time limits and job demands, lack of access to academic materials, and organizational barriers that still hinder the extensive practice of EBP [31]. Their effective resolution in the form of specific educational materials, solid leadership support, and appropriate policy development is essential in the context of ensuring high-quality nursing care [32].

## CONCLUSION

Progress in the nursing care that was founded on evidence based practice has significantly enhanced quality, safety and efficacy of health-care delivery. The combination of stringent research findings, uniform clinical practices, patient-centered and holistic models, as well as technological advancements, has strengthened the nursing practice and improved patient care outcomes. Despite all these challenges that may exist; such as time, high workloads and limited access to research materials, continuous professional growth, strong leadership support, and favorable company policies cannot be overlooked. Continuous commitment to evidence-based nursing will also contribute to the improvement of the quality of care and protect a patient-oriented and responsive health-care paradigm in the future.

## REFERENCES

- [1]. Altmiller G, Pepe LH. Influence of Technology in Supporting Quality and Safety in Nursing Education. *Nurs Clin North Am.* 2022 Dec;57(4):551-562. doi: 10.1016/j.cnur.2022.06.005. Epub 2022 Sep 28. PMID: 36280294; PMCID: PMC9514973.
- [2]. Utens CM, van der Weijden T, Joore MA, Dirksen CD. The use of research evidence on patient preferences in pharmaceutical coverage decisions and clinical practice guideline development: exploratory study into current state of play and potential barriers. *BMC Health Serv Res.* 2014 Nov 11;14:540. doi: 10.1186/s12913-014-0540-2. PMID: 25385145; PMCID: PMC4229609.
- [3]. National Academies of Sciences, Engineering, and Medicine; National Academy of Medicine; Committee on the Future of Nursing 2020–2030; Flaubert JL, Le Menestrel S, Williams DR, et al., editors. *The Future of Nursing 2020-2030: Charting a Path to Achieve Health Equity.* Washington (DC): National Academies Press (US); 2021 May 11. 4, *The Role of Nurses in Improving Health Care Access and Quality.* Available from: <https://www.ncbi.nlm.nih.gov/books/NBK573910/>
- [4]. Darvish A, Bahramnezhad F, Keyhanian S, Navidhamidi M. The role of nursing informatics on promoting quality of health care and the need for appropriate education. *Glob J Health Sci.* 2014 Jun 25;6(6):11-8. doi: 10.5539/gjhs.v6n6p11. PMID: 25363114; PMCID: PMC4825491.
- [5]. Connor L, Dean J, McNett M, Tydings DM, Shrout A, Gorsuch PF, Hole A, Moore L, Brown R, Melnyk BM, Gallagher-Ford L. Evidence-based practice improves patient outcomes and healthcare system return on investment: Findings from a scoping review. *Worldviews Evid Based Nurs.* 2023 Feb;20(1):6-15. doi: 10.1111/wvn.12621. Epub 2023 Feb 8. PMID: 36751881.
- [6]. Qtait M. Nurses' Knowledge, Attitudes, and Implementation of Evidence-Based Practice Comparative Study. *SAGE Open Nurs.* 2025 May 29;11:23779608251343611. doi: 10.1177/23779608251343611. PMID: 40453576; PMCID: PMC12123105.
- [7]. Hawley ST, Morris AM. Cultural challenges to engaging patients in shared decision making. *Patient Educ Couns.* 2017 Jan;100(1):18-24. doi: 10.1016/j.pec.2016.07.008. Epub 2016 Jul 4. PMID: 27461943; PMCID: PMC5164843.
- [8]. Hernandez R, Bassett SM, Boughton SW, Schuette SA, Shiu EW, Moskowitz JT. **Psychological Well-being and Physical Health: Associations, Mechanisms, and Future Directions.** *Emot Rev.* 2018 Jan;10(1):18-29. doi: 10.1177/1754073917697824. Epub 2017 Oct 20. PMID: 36650890; PMCID: PMC9841922.
- [9]. Open Resources for Nursing (Open RN); Ernstmeyer K, Christman E, editors. *Nursing: Mental Health and Community Concepts [Internet].* Eau Claire (WI): Chippewa Valley Technical College; 2022. Chapter 2 Therapeutic Communication and the Nurse-Client Relationship. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK590036/>
- [10]. Alotaibi JS. Causes of medication administration errors and barriers to reporting as perceived by nurses in Saudi Arabia: A qualitative study. *Belitung Nurs J.* 2024 Apr 28;10(2):215-221. doi: 10.33546/bnj.3249. PMID: 38690308; PMCID: PMC11056835.
- [11]. Nzanga J, Boga M, Kagwanja N, Waithaka D, Barasa E, Tsofa B, Gilson L, Molyneux S. An innovative leadership development initiative to support building everyday resilience in health systems. *Health Policy Plan.* 2021 Aug 12;36(7):1023-1035. doi: 10.1093/heapol/czab056. PMID: 34002796; PMCID: PMC8359752.

- [12]. Cao H, Song Y, Wu Y, Du Y, He X, Chen Y, Wang Q, Yang H. What is nursing professionalism? a concept analysis. *BMC Nurs.* 2023 Feb 7;22(1):34. doi: 10.1186/s12912-022-01161-0. PMID: 36747180; PMCID: PMC9902819.
- [13]. Wei Q, Pan S, Liu X, Hong M, Nong C, Zhang W. The integration of AI in nursing: addressing current applications, challenges, and future directions. *Front Med (Lausanne).* 2025 Feb 11;12:1545420. doi: 10.3389/fmed.2025.1545420. PMID: 40007584; PMCID: PMC11850350.
- [14]. Tringale M, Stephen G, Boylan AM, Heneghan C. Integrating patient values and preferences in healthcare: a systematic review of qualitative evidence. *BMJ Open.* 2022 Nov 18;12(11):e067268. doi: 10.1136/bmjopen-2022-067268. PMID: 36400731; PMCID: PMC9677014.
- [15]. Kuipers SJ, Cramm JM, Nieboer AP. The importance of patient-centered care and co-creation of care for satisfaction with care and physical and social well-being of patients with multi-morbidity in the primary care setting. *BMC Health Serv Res.* 2019 Jan 8;19(1):13. doi: 10.1186/s12913-018-3818-y. PMID: 30621688; PMCID: PMC6323728.
- [16]. Arends SAM, Thodé M, De Veer AJE, Pasman HRW, Francke AL, Jongerden IP. Nurses' perspective on their involvement in decision-making about life-prolonging treatments: A quantitative survey study. *J Adv Nurs.* 2022 Sep;78(9):2884-2893. doi: 10.1111/jan.15223. Epub 2022 Mar 21. PMID: 35307867; PMCID: PMC9541323.
- [17]. Harb S, Abu Shosha G, Oweidat IA, Al-Mugheed K, Alzoubi MM, Abdelaliem SMF. Compliance of infection control practices among registered nurses: A cross-sectional study. *Medicine (Baltimore).* 2025 Apr 4;104(14):e42062. doi: 10.1097/MD.00000000000042062. PMID: 40193662; PMCID: PMC11977713.
- [18]. Vasquez B, Moreno-Lacalle R, Soriano GP, Juntasoopeepun P, Locsin RC, Evangelista LS. Technological machines and artificial intelligence in nursing practice. *Nurs Health Sci.* 2023 Sep;25(3):474-481. doi: 10.1111/nhs.13029. Epub 2023 Jun 18. PMID: 37332058; PMCID: PMC10528820.
- [19]. Lulin Z, Yiranbon E, Asante Antwi H. Complementarity of Clinician Judgment and Evidence Based Models in Medical Decision Making: Antecedents, Prospects, and Challenges. *Biomed Res Int.* 2016;2016:1425693. doi: 10.1155/2016/1425693. Epub 2016 Aug 24. PMID: 27642588; PMCID: PMC5013221.
- [20]. Ramezan Zadeh Tabriz E, Sadeghi M, Tavana E, Heidarian Miri H, Heshmati Nabavi F. Approaches for boosting self-confidence of clinical nursing students: A systematic review and meta-analysis. *Heliyon.* 2024 Mar 6;10(6):e27347. doi: 10.1016/j.heliyon.2024.e27347. PMID: 38501010; PMCID: PMC10945204.
- [21]. Wang Y, Liu C, Wang P. Patient satisfaction impact indicators from a psychosocial perspective. *Front Public Health.* 2023 Feb 22;11:1103819. doi: 10.3389/fpubh.2023.1103819. PMID: 36908420; PMCID: PMC9992178.
- [22]. Owolabi MO, Leonardi M, Bassetti C, Jaarsma J, Hawrot T, Makanjuola AI, Dhamija RK, Feng W, Straub V, Camaradou J, Dodick DW, Sunna R, Menon B, Wright C, Lynch C, Chadha AS, Ferretti MT, Dé A, Catsman-Berrevoets CE, Gichu M, Tassorelli C, Oliver D, Paulus W, Mohammed RK, Charway-Felli A, Rostasy K, Feigin V, Craven A, Cunningham E, Galvin O, Perry AH, Fink EL, Baneke P, Helme A, Laurson-Doube J, Medina MT, Roa JD, Hogl B, O'Bryan A, Trenkwalder C, Wilmshurst J, Akinyemi RO, Yaria JO, Good DC, Hoemberg V, Boon P, Wiebe S, Cross JH, Haas M, Jabalpurwala I, Mojasevic M, DiLuca M, Barbarino P, Clarke S, Zuberi SM, Olowoyo P, Owolabi A, Oyesiku N, Maly-Sundgren PC, Norrvng B, Soekadar SR, van Doorn PA, Lewis R, Solomon T, Servadei F. Global synergistic actions to improve brain health for human development. *Nat Rev Neurol.* 2023 Jun;19(6):371-383. doi: 10.1038/s41582-023-00808-z. Epub 2023 May 19. PMID: 37208496; PMCID: PMC10197060.
- [23]. Hakami MSA. Barriers to Conducting and Publishing Scientific Research Among Nursing Faculty Members in Saudi Arabia. *J Multidiscip Healthc.* 2023 Sep 18;16:2733-2743. doi: 10.2147/JMDH.S429478. PMID: 37744180; PMCID: PMC10516187.
- [24]. Alodhialah AM. Exploring the influence of organizational culture on evidence-based practice adoption among nurses in tertiary hospitals: a qualitative study. *BMC Nurs.* 2025 Aug 6;24(1):1029. doi: 10.1186/s12912-025-03647-z. PMID: 40770311; PMCID: PMC12326685.
- [25]. Ahlawat A, Jangid R, Sharma S, Rathee S, Parashar I, Wadhawan R. Enhancing Patient Care with Teledentistry and Smart Diagnostic Tools: A Review. *Oral Sphere J. Dent. Health Sci.* 2025;1(2):116-122. doi: <https://doi.org/10.63150/osjdhs.2025.08>
- [26]. Chen Q, Sun M, Tang S, Castro AR. Research capacity in nursing: a concept analysis based on a scoping review. *BMJ Open.* 2019 Nov 21;9(11):e032356. doi: 10.1136/bmjopen-2019-032356. PMID: 31753891; PMCID: PMC6886958.
- [27]. Turkowski Y, Turkowski V. Florence Nightingale (1820-1910): The Founder of Modern Nursing. *Cureus.* 2024 Aug 5;16(8):e66192. doi: 10.7759/cureus.66192. PMID: 39233972; PMCID: PMC11373583.
- [28]. Patrician PA, Campbell CM, Javed M, Williams KM, Fooths L, Hamilton WM, House S, Swiger PA. Quality and Safety in Nursing: Recommendations From a Systematic Review. *J Healthc Qual.* 2024 Jul-Aug 01;46(4):203-219. doi: 10.1097/JHQ.0000000000000430. Epub 2024 May 8. PMID: 38717788; PMCID: PMC11198958.
- [29]. Tsige AW, Endalifer BL, Habteweld HA, Wondmkun YT, Ayele SG, Kefale B. Treatment satisfaction and medication adherence and predictors among patients with heart failure in Ethiopia: a hospital-based cross-sectional

study. *Front Pharmacol.* 2024 Jul 29;15:1399177. doi: 10.3389/fphar.2024.1399177. PMID: 39135786; PMCID: PMC11317291.

[30]. Khosravi M, Zare Z, Mojtabaeian SM, Izadi R. Artificial Intelligence and Decision-Making in Healthcare: A Thematic Analysis of a Systematic Review of Reviews. *Health Serv Res Manag Epidemiol.* 2024 Mar 5;11:23333928241234863. doi: 10.1177/23333928241234863. PMID: 38449840; PMCID: PMC10916499.

[31]. Pitsillidou M, Noula M, Roupa Z, Farmakas A. Barriers to the Adoption of Evidence Based Practice in Nursing: a Focus Group Study. *Acta Inform Med.* 2023;31(4):306-311. doi: 10.5455/aim.2023.31.306-311. PMID: 38379685; PMCID: PMC10875937.

[32]. Stavropoulou A, Rovithis M, Kelesi M, Vasilopoulos G, Sigala E, Papageorgiou D, Moudatsou M, Koukouli S. *What Quality of Care Means?* Exploring Clinical Nurses' Perceptions on the Concept of Quality Care: A Qualitative Study. *Clin Pract.* 2022 Jun 30;12(4):468-481. doi: 10.3390/clinpract12040051. PMID: 35892437; PMCID: PMC9326653.