Natural Resources for Human Health
eISSN: 2583-1194

Original Research

Received 01 Aug 2026
Revised 15 Sep 2026
Accepted 03 Oct 2026

Natural Resources for Human Health 2026, Vol. 6 (23s): 87–100

KEYWORDS:
Impact, Artificial, Intelligence, Five Stages, Nursing Process, Saudi Arabia

Impact of Artificial Intelligence on the Five Stages of the Nursing Process A Systematic Review at Saudi Arabia 2026

Maram Taher Alghabbashi[1*], Saleh Husain Alsaati[2], Ahmed Abdulshammari[3], Ahmed Mohammed Ahmed Bakhder[4], Sahar Mohammed Aljaddawi[5], Hanaa Abdullah Alyamani[6], Abdullah Mtaab Nahad Alotaibi[7], Maram Karam Alanazi[8], Abdullah Mohammed Al-Bariqi[9], Sami Awad Awadallah Al-Omari[10], Ahmed Abdulaziz Abdulrhman Bindraihim[11]

[1]Associate Professor, Nursing Science and Research Department /Faculty of Nursing Umm Al-Qura University Ophthalmology Consultant, Jeddah Eye Hospital, Saudi Arabia.
[2]Medical Records, Medical Services Department, Ministry of Interior, Saudi Arabia.
[3]Specialist-Laboratory -King Abdul Aziz Hospital, Saudi Arabia.
[4]Lab specialist, East Jeddah hospital, Saudi Arabia.
[5]Lab Technician, East Jeddah hospital, Saudi Arabia.
[6]specialist-sociology, Primary Health Care Center South of Dawadmi, Saudi Arabia.
[7]Radiologic Technologist, King Khalid Civil Hospital – Tabuk, Saudi Arabia.
[8]Dental Technology, King Abdulaziz University Dental Hospital, Saudi Arabia.
[9]Medical Laboratory Technician, King Abdulaziz University Dental Hospital, Saudi Arabia.
[10]Primary Health Care Center Director Specialist, Assistant Director of Public Health, Ministry of Health Branch, Riyadh Region, Saudi Arabia.
*Email: Mtghabbashi@uqu.edu.sa

ABSTRACT: Background: Artificial Intelligence (AI) can understood as the ability of computational systems to simulate human cognitive processes, including problem-solving, decision-making and pattern recognition like on five stages of the Nursing Process. In the healthcare context, this capability has driven significant transformations in stages of the contributing to improve nursing process in nursing care. Artificial intelligence (AI) is advancing in nursing healthcare, and nursing process but nurses' low Artificial Intelligence literacy limits its integration into education, research, and clinical practice. The AI Nurses Network established in 2024 as a global network providing free training, funding, news, and events to support nurses worldwide in developing and applying Artificial Intelligence in nursing process a professional practice. The integration of artificial intelligence (AI) in healthcare and nursing process is rapidly reshaping nursing roles functions. Artificial Intelligence is revolutionizing healthcare in nursing process by addressing complex challenges and enhancing patient care. AI technologies, such as machine learning, natural language processing, and predictive analytics, offer significant potential to affect nursing practice through nursing process and patient outcomes.

The aim of this Systematic Review: To assess the impact of Artificial Intelligence on the Five Stages of the Nursing Process in Saudi Arabia 2026.

Natural Resources for Human Health
eISSN: 2583-1194

Methods: A systematic review, conducted in October 2026, followed PRISMA guidelines. We searched PubMed, GOOGLE SCHOLAR, and Web of Science for studies published up to October 2026. The inclusion criteria were original research on artificial intelligence in five stages of the nursing process in nursing care and healthcare practice published in English. A two-stage screening process used to select relevant studies, then analyzed for their impact on nursing process and patient outcomes.

Results: the research quality was rated highly and perceived to improve Artificial, Intelligence in the nursing process . The search strategy yielded 7 eligible studies after screening 150 records. These studies encompassed diverse methodologies and focused on nursing professionals

Conclusion: Artificial Intelligence technologies have substantially improved nursing practice through nursing process. Addressing challenges related to data privacy and integration, as well as standardizing methodologies, is essential for optimizing AI's potential in nursing healthcare. Further research needed to explore the long-term impacts, cost-effectiveness, and ethical implications of Artificial Intelligence in this nursing process field.

INTRODUCTION:

Background:

Artificial Intelligence (AI) is revolutionizing healthcare by enhancing nursing practices and improving patient outcomes through nursing process. Tools such as Clinical Decision Support Systems (CDSS), predictive analytics, robotic process automation (RPA), and remote monitoring empower nurses to make informed decisions, optimize workflows, and monitor patients more effectively. [1] Artificial Intelligence enhances nursing process, decision-making, boosts efficiency, and facilitates personalized care, while aiding in early detection and real-time data analysis. It also contributes to better nurse education and patient safety by minimizing errors and enabling remote consultations. [2] However, for Artificial Intelligence to be successfully integrated into nursin process in healthcare, it is essential to tackle challenges related to training, ethical considerations, and data privacy to guarantee its effective implementation and positive impact on the quality and safety of nursing process in healthcare. [3]

Artificial intelligence (AI) has emerged as one of the most transformative technological developments in contemporary nursing process in healthcare systems. Broadly defined as the ability of machines to analyze data, learn patterns, and support decision-making processes in nursing process. [4] Artificial intelligence increasingly integrated into clinical environments, reshaping how care is delivered and managed . Its rapid evolution, driven by advances in big data, computational power, and machine learning algorithms, has positioned AI as a key tool to address complex healthcare challenges, including rising demand, workforce shortages, and the need for more efficient and personalized care [5, 6].

Vision 2030 and the Health Sector Transformation Program identify digital transformation, e-health and AI-supported innovation as routes to better access, quality and efficiency of care. National programmers promote telemedicine and smart documentation, and these in turn assume a workforce that is comfortable with such technologies [7, 8].

Saudi and regional studies report that nurses and nursing students generally hold favorable views of AI, tend to report only moderate technological readiness, and ask for more training and better system design [9]. Qualitative work suggests that nurses expect AI to reduce workload where the interface is convenient and does not add documentation or alert fatigue, and to add work where it is not [10]. However, a major concern for nursing faculty is that Artificial Intelligence may replace, rather than support, the clinical reasoning and judgment that students must develop. Therefore, Artificial Intelligence based educational tools shou be implemented as supervised pedagogical supports rather than as answer-generating systems [11]

Within this context, nursing plays a central role. Nurses represent the largest group of healthcare professionals and are directly involved in patient monitoring, care coordination, and clinical decision-making. As such, they particularly affected by the integration of Artificial Intelligence technologies into clinical workflows. Unlike other healthcare professionals, nurses engage in continuous, real-time patient interactions, which makes the integration of Artificial Intelligence tools both highly

relevant and complex. Artificial Intelligence applications in nursing range from predictive analytics and clinical decision support systems to automated documentation and patient monitoring tools, all of which aim to enhance care delivery and optimize outcomes [12].

Generative artificial intelligence (AI), including tools such as Chat GPT, has created new opportunities to support learning in health professions education. In nursing education, and nursing process these tools may provide interactive guidance and structured prompts that help students organize their thinking during complex learning tasks [13]

Artificial Intelligence the GPT- nursing process "Assessment, Diagnosis, Planning, Implementation, Evaluation" assistant was designed as a supervised cognitive scaffolding tool to support, not replace, nursing' clinical reasoning. Nurses remained responsible for interpreting patient data, prioritizing nursing problems, formulating nursing diagnoses, selecting interventions, and justifying their care plans. Although emerging evidence suggests that AI-based educational tools may improve learning outcomes, many studies rely mainly on self-reported measures rather than objective performance {14]

Health informatics has become a central driver of change in nursing process, clinical practice, data management, and organizational efficiency in healthcare. It refers to the integration of information technology and data science with healthcare systems management to streamline the delivery of healthcare services, enhance patient outcomes, and increase the performance of the workforce [15] Within this environment, nurses and nurse managers play a central role, as they are both the largest users of digital health tools and the key actors in their successful implementation [16] The increasing application of health informatics system in healthcare facilities in Saudi Arabia, the emergent opportunities and challenges that have a direct impact on the nursing process in performance level, the effectiveness of communication, empowerment and stress levels in the working environment among nurses [17]

METHOD

Aim of the study:

To assess the impact of Artificial Intelligence on the Five Stages of the Nursing Process in Saudi Arabia 2026.

Study design:

A systematic review conducted following guidelines. A structured search performed in PubMed, CINAHL, Scopus, and Web of Science, including studies published in the last 6 years. Inclusion criteria comprised primary research studies focused on AI applications in nursing process and care nursing. After screening and eligibility assessment, seven studies were included. Data were extracted and analyzed according to Five Stages of the Nursing Process, "Assessment (A), Diagnosis (D), Planning (P),Implementation (I),Evaluation (E) efficiency" and "Artificial Intelligence "ethical integrity, and humanization.

Search strategy:

The literature review strategy that was Impact of Artificial Intelligence on the Five Stages of the Nursing Process on the nurse roles of nursing process communication, empowerment, and occupational stress. The purposeful and systematic search method employed in this systematic review by searching the key research databases: PubMed, Scopus, Web of Science, and Google Scholar, as they are widely used to provide strong scholarly content in the area of nursing, health informatics, and nursing care process in healthcare management. PubMed provided clinical and evidence-based research to the Artificial Intelligence in nursing care and performance improvement. Scopus offers a wide range of interdisciplinary journals, and the Boolean operators and advanced filters narrow the results to relevant ones. High-impact studies focusing on the issue of Artificial Intelligence in Stages of nursing process and communication efficacy in healthcare systems were searched from the Web of Science database. In addition, Google Scholar was use incorporate grey literature, including conference papers and institutional reports, to make sure that there was a wider perspective of the topic.

Search methods

This systematic reviews combination recommended and demonstrated to achieve a higher recall and reduce the risk of missing relevant studies when compared to the use of core biomedical and multidisciplinary scientific databases alone. Combinations of keywords used in the search, such as "Artificial Intelligence" "Health Informatics" and nurse performance "Nurse Process" "performance and communication" and nurse empowerment and occupational stress, were used.

Our criteria were articles done in Saudi Arabia and outside it from 2020 to 2026. One hundred and ninety-six (150) research papers were extracted; only 7 articles met our paper inclusion-exclusion criteria. met our paper inclusion-exclusion criteria.

Inclusion criteria

The systematic review had certain eligibility criteria Peer-reviewed articles, systematic reviews, and empirical studies published in English from 2020 to 2026 were filtered, as only contemporary Artificial Intelligence in digital nursing process in healthcare were sought. Exclusion criteria included studies that concentrated on non-nursing staff, non-clinical environment, or general healthcare technology application without references to the outcomes of nurse performance. Also, papers that did not have , were abstracts of conferences or not in full-text form were not included to ensure the rigor and validity of the findings of the review. Systematic reviews met the eligibility criteria and were retained to provide corroborating, higher level evidence on the review's themes. Geographically Priority the studies that were carried out within Saudi Arabia a critical analysis of the findings to determine their applicability to the Saudi Arabian context. Studies that addressed a subject not relating to nursing.

The exclusion criteria

The exclusion criteria were studies that had nursing as respondents. The decision was made to focus in the Nurses inside the health sector as a whole. Artificial Intelligence an integral part of the healthcare system, the aim of this study was to Impact of Artificial Intelligence on the five Stages of the Nursing Process.

(1) Any research that not related to Saudi Arabia.

(2) Studies published before 2020.

(3) Articles not relevant to our objectives.

Synthesis of Data

Once the data had extracted, the results were categorized and organized so they could be analyzed and compared to meet the objectives of review . Data extraction done in a systematized manner, which increased the reliability and consistency of this systematic review. The data in the chosen studies summarized in terms of author, publication year, study design, country and healthcare setting, sample size, the characteristics of the participants in (nurse's process), methodology, and key results. Attention had been given to the studies which dealt with the effects of communication, five Stages of the Nursing Process, "Assessment (A), Diagnosis (D), Planning (P),Implementation (I),Evaluation (E) efficiency" and "Artificial Intelligence "ethical integrity, and humanization. The nurse performance in the framework of health informatics systems.

Table 1 Characteristics of reviewed articles about impact of Artificial Intelligence on the five Stages of the Nursing Process.

Author, Date, Country	**Region**	**Study design**	**Study aim**	**Results**
Zhang et al (2026) [18]	A Florence Nightingale Faculty of Nursing, Midwifery and Palliative Care London.	A cross-sectional online survey was conducted.	To evaluate members' engagement with, and perceptions of, the Artificial Intelligence Nurses Network resources, including their use, quality, and impact.	Artificial intelligence (AI) is advancing in healthcare, but nurses' low AI literacy limits its integration into education, research, and clinical practice. The Artificial intelligence Nurses Network were established as a global network providing free training, funding, news, and events to support nurses worldwide in developing and applying Artificial intelligence in professional practice. The results imply eighty responses indicated variable engagement across the network's resources. Training quality was rated highly and perceived

				to improve AI knowledge, awareness, professional development, although impacts on collaboration, research output, and securing funding were more moderate, largely due to lack of awareness and perceived barriers. Communication channels were widely used and positively evaluated for supporting awareness and engagement with AI but had fewer effects on collaboration and research outputs. Interactive events such as hackathons were highly valued for fostering networking and collaboration. **Conclusions** This global network supports nurses' engagement with Artificial intelligence by enhancing awareness, knowledge, and professional development, but its impact on collaboration, research outputs, and securing funding is limited due to its early stage of development. This highlights a gap between Artificial intelligence literacy and its practical application in research and evidence-based practice and the need for a more structured and systematic capacity-building pathway for nurses. Overall, members reported positive perceptions of the AI Nurses Network and perceived it as contributing to respondents also perceived that it had been less influential reflecting that these outcomes may require longer to develop. Looking ahead, the continued development of the network should focus on supporting nurses' progression from foundational Artificial intelligence literacy to active engagement in AI research and innovation by strengthening research capability,
Alshammari et al (2026) [19]	Saudi Arabia at Riyadh Health Cluster	Design was employed, incorporating qualitative thematic analysis	To explore the impact of health informatics on nurse performance within the Riyadh Health Cluster, Saudi Arabia, emphasizing	The results of this study align with the international results and with the findings of the Saudi nurses in the Riyadh Health Cluster, where the informatics role seen as a facilitator

		to synthesize evidence	the roles of communication, empowerment, and occupational stress. Interacting.	and a stressor. However there is an additional layer of qualities to the Saudi context that is different from what can found high-income western environments. Saudi Arabia's nursing workforce is much internationalized, comprising Saudi nationals and foreign nurses resulting in a diversity of baseline digital literacy and informatics familiarity. International literature also indicates that there are significant moderators that shape the experience of nurses with digital tools in their practice, including norms of organizational culture, leadership styles, and norms of professional autonomy, which have received little to no attention in the Saudi literature. Moreover, nurse empowerment and informatics-related stress levels are higher and lower, respectively, in settings where informatics is more mature, like Taiwan, South Korea, and the Netherlands, respectively, and lower and higher, respectively, in settings where informatics is less mature, like the Riyadh Health Cluster. **Conclusions** The most essential measure in Artificial Intelligence that occurred is empowerment, whereby informatics integration enhanced autonomy, professional confidence, and decision-making ability. Monitored training sessions and management support also reinforced the capacity of nurses to effectively use technology and improve their level of activity and job satisfaction. Resilience supported and high performance standards preserved by alleviating occupational stress with the help of supportive interventions, user-friendly interfaces, and peer collaboration, although occupational stress could be viewed as a possible barrier.
Maraş et al (2026) [20]	Türkiye Faculty of Health	Descriptive and cross-sectional	To examined the anxiety levels of nurses and nurse candidates regarding	The nurses and nursing students stated that they experienced ethical-moral concerns about humanoid

	Sciences	study.	humanoid nurse robots and artificial Intelligence health technologies in perioperative patient care.	nurse robots and Artificial Intelligence health technologies. Our study revealed that both groups would accept nursing care provided by Humanoid nurse robots and AI health technologies if they were to become patients. In case of any issues, arising in patient care related to humanoid nurse robots and Artificial Intelligence health technologies, most nurses and nursing students indicated that the hospital should take responsibility. Furthermore, this finding emphasizes that the responsibility should lie with individuals other than nurses. No previous literature findings encountered on this matter, indicating the originality of this study. **Conclusions** At the conclusion of the study, it found that both nurses and nursing students exhibited a moderate level of Artificial Intelligence anxiety and readiness. Analysis of responses to questions about humanoid nurse robots and Artificial Intelligence health technologies revealed that while more than half of the participants had knowledge about these technologies, most had not received formal training in this area. Although both nurses and students expressed a preference for not using these technologies in surgical patient care, many acknowledged that they could facilitate patient care if implemented. However, over half of the participants reported experiencing ethical and moral concerns. Incorporating Artificial Intelligence and AI health technologies into nursing education curricula would Positively contribute to awareness development. Creating practical applications for Artificial Intelligence health technologies would be a significant step for nurses.

Almagharbeh et al (2026) **[21]**	Saudi Arabia, Tabuk,	Following PRISMA 2020	To examine whether nurse-used Artificial Intelligence-reshaping clinical decision support systems improve patient-important outcomes in acute and critical care contexts and summaries effects on care processes and nurse-reported outcomes.	Artificial intelligence clinical decision support systems may support early recognition of deterioration, sepsis risk and care escalation in acute and critical care settings. Nurses are central users of these systems because they provide continuous monitoring, interpret changing clinical states and initiate escalation or responses. Evidence specific to nurse-used artificial intelligence clinical decision support systems remains limited, particularly for nurse-reported outcomes, workflow burden, safety and equity. The available evidence suggests potential improvements in mortality, length of stay, readmissions and process outcomes, but confidence varies by setting, design and risk of bias. For critical care nursing, implementation should priorities workflow fit, training, safety monitoring, equity audits and preservation of nurses' clinical judgment. The strongest critical care relevance came from acute wards, intensive care units, and sepsis, deterioration and delirium-prevention contexts. Chronic or community care represented by a home health telemonitoring trial . **Conclusions** Nurse-Artificial intelligence centric clinical decision support systems AI-CDSS may strengthen acute and critical care nursing when tools are embedded thoughtfully into bedside workflows. Current evidence suggests support for earlier recognition of deterioration, timelier escalation, better protocol adherence and selected patient-outcome improvements, including pooled hospital mortality. However, evidence remains limited and heterogeneous, particularly for nurse workload, burnout, satisfaction, trust and equity. Rigorously tested AI support, guided by nursing values, may contribute to safer and more equitable care.

Watson et al. (2025) [22]	Multi University " Sheffield Hallam University, Sheffield, UK , Oxford Brookes University,	Integrative review	To critically appraise and synthesize empirical evidence on the clinical applications, outcomes, and implications of generative artificial intelligence in nursing practice.	Given the rapid advancement and increasing integration of Gen Artificial intelligence in various healthcare settings, it is essential to understand the scope of the empirical literature on its applications in clinical nursing practice. This integrative review is timely and necessary to ensure that technological innovation translates into meaningful improvements in both nursing practice and patient outcomes. Although generative artificial intelligence could reduce nurses' documentation workload and routine decision-making burden, these gains cannot assumed. Safe and effective integration will require rigorous nurse training, robust governance, transparent labelling of AI-generated content, and ongoing evaluation of both clinical outcomes and equity impacts. Without these safeguards, generative artificial intelligence risks introducing new errors and undermining patient safety and trust. **Conclusions** Generative artificial intelligence holds promise for enhancing nursing efficiency, supporting clinical decision making, and extending patient communication. However, consistent human validation, ethical boundary setting, and more rigorous, longitudinal outcome and equity evaluations are essential before widespread clinical adoption. However, fully realizing these promising identified benefits depends critically on thoughtful integration, robust clinician training, explicit governance frameworks, and sustained ethical vigilance. As Gen AI continues to evolve, the nursing profession must remain actively engaged in shaping its trajectory to reflect core nursing values and priorities.

El Arab, et al (2025) [23]	Saudi Arabia	Umbrella Review	To evaluate the integration of Artificial intelligence into nursing practice and education, with a focus on ethical and social implications, responsible.	Despite substantial advancements in AI research, the transition from development to operationalization remains a critical challenge. Although AI technologies—including predictive analytics, clinical decision support systems, and workflow automation—offer great potential for nursing practice, the literature shows a disproportionate emphasis on early-stage development, with only a limited number of studies addressing implementation and even fewer exploring operationalization. This disconnect hinders the realization of AI's transformative potential in real-world nursing environments, where systemic barriers such as financial constraints, infrastructure readiness, and workforce training remain inadequately addressed. Practical strategies that leverage AI's capabilities can offer immediate benefits to nursing practice. Automating administrative tasks such as documentation, scheduling, and resource allocation not only reduces nurse workload but also enhances workflow efficiency and patient safety. **Conclusions** AI holds substantial promises for revolutionizing nursing practice and education. However, realizing this potential necessitates a strategic approach that addresses ethical concerns, integrates AI literacy into nursing curricula, and ensures equitable access to AI technologies. This review comprehensively explored the integration of AI into nursing practice and education. However, the adoption of AI in nursing is fraught with critical ethical and social challenges. Key concerns include data privacy breaches, algorithmic bias, and a lack of transparency and accountability in AI-driven decisions. To address these challenges, a strategic and holistic approach is

				essential. Future research should focus on evaluating the long-term impacts of AI integration and developing standardized implementation strategies to facilitate its responsible adoption in health care
El-Gazar et al. (2024) **[24]**	Egypt.	Mixed-method	To explore the behavioral intentions of nurses to accept robots in their workplace and to examine the willingness of patients to use service robots in healthcare settings	This study provides a comprehensive overview of the impact of artificial intelligence on nursing practice, contributing to a better understanding of how this technology can leveraged to improve care quality, operational efficiency, and the well-being of healthcare professionals. Highlights not only the benefits but also the challenges of AI implementation, offering a valuable knowledge base for policymakers, hospital administrators, and nurses seeking to integrate technological solutions in an ethical and effective manner. Furthermore, this study reinforces the need for continuous professional training and the establishment of appropriate regulations to ensure that AI used safely and efficiently, while preserving the crucial role of nurses in delivering humanised care. Ultimately, it promotes a positive nursing practice environment, leading to significant improvements in patient safety and care quality. Artificial Intelligence Contribution to the Promotion of Positive Nursing Practice Environments • Patient-centered care Challenges and Opportunities of AI Implementation in Nursing Practice Environments • Impact on employability • Resistance to change • Continuous training, **Conclusions** Artificial intelligence has the potential positively transform the nursing practice environment, optimizing decision-making, enhancing patient

				safety, and improving operational efficiency, with clear benefits for professionals, patients, and healthcare institutions. The transformative potential of AI in nursing practice environments, identifying AI-driven tools that enhance decision-making, optimize workflows, reduce administrative burdens, improve patient safety, and create a more efficient, sustainable nursing practice. Automated monitoring systems and predictive analytics further improve clinical outcomes and quality of care. However, challenges in AI adoption and implementation persist, including ethical concerns, data privacy issues, and resistance to technology adoption. Successful integration requires structured implementation

RESULTS AND DISCUSSION

The result of systematic review impact of Artificial Intelligence on the Five Stages of the Nursing Process through 7 cross-sectional studies published between 2020 and 2026 present systematic review (Table 1).

Our review the research quality was rated highly and perceived to improve Artificial, Intelligence in the nursing process . The search strategy yielded 7 eligible studies after screening 150 records. These studies encompassed diverse methodologies and focused on nursing professionals and researchers. First, ethical and social implications consistently highlighted, with studies emphasizing concerns about data privacy, algorithmic bias, transparency, accountability, and the necessity for equitable access to AI technologies. Second, the transformation of nursing education emerged as a critical area, with an urgent need to update curricula by integrating AI-driven educational tools and fostering both technical competencies and ethical decision-making skills among nursing and professionals. [25] Third, strategies for integration were identified as essential for effective implementation, calling for scalable models, robust ethical frameworks, and interdisciplinary collaboration, while also addressing key barriers such as resistance to AI adoption, lack of standardized AI education, and disparities in technology access [23]

Although affects collaboration, research output, and securing funding were more moderate. Uptake of the funding scheme was low, largely due to lack of awareness and perceived barriers. Communication channels were widely used and positively evaluated for supporting awareness and engagement with AI but had fewer effects on collaboration and research outputs. Interactive events such as hackathons were highly valued for fostering networking and collaboration. The articles incorporated in this systematic review mainly involved nurses and Artificial, Intelligence in the issues pertaining to the effects of health informatics systems on performance, communication, empowerment, and occupational stress. A survey of registered and clinical nurses working in tertiary hospitals, primary care centers, and multi-hospitals showed that digital communication platforms and informatics tools enhance the effectiveness of the working process, the accuracy of data, collaboration, and decision-making. [26] In addition, nurse research focused on the influence of informatics integration on supervision, feedback, and professional development, with a focus on nurse empowerment as a means to improve autonomy and confidence. [3]The other site explored the issue of occupational stress and adjustments and concentrated on the way those training program, managerial support, and convenient interfaces with systems can help to decrease stress levels among nurses and maintain their performances. [27] The studies reflect a variety of health informatics' effects on the performance

and wellbeing of nurses across various hospital, professional, and technological settings. [28] The wide range of study designs and settings makes the results relevant to a wide scope of nursing outcomes

CONCLUSIONS

Artificial, Intelligence holds substantial promises for revolutionizing nursing practice and nursing process. However, realizing this potential necessitates a strategic approach that addresses ethical concerns, integrates Artificial, Intelligence literacy into nursing curricula, and ensures equitable access to Artificial, Intelligence technologies. Limitations of this review include the heterogeneity of included studies and potential publication bias. Our findings underscore the need for comprehensive ethical frameworks and regulatory guidelines tailored to nursing applications, updated nursing process to include Artificial, Intelligence literacy and ethical training, and investments in infrastructure to promote equitable Artificial, Intelligence access. Future research should focus on developing standardized implementation strategies and evaluating the long-term impacts of Artificial, Intelligence integration on nursing process and patient outcomes

REFERENCES:

[1] Pereira, S. C. D. A., Ferreira, R. A., Ventura-Silva, J. M., Santos, E. J. F., Fassarella, C. S., & Ribeiro, O. M. P. L. (2026). The effect of artificial intelligence in promoting positive nursing practice environments: Mixed methods systematic review. *Journal of Clinical Nursing*, *35*(10), 4066-4080.

[2] Alqaisi, O., Al-Ghabeesh, S., Dibas, M., Sijarina, L., & Tai, P. (2026). The Role of Machine Learning and Artificial Intelligence in Enhancing Critical Care Nursing Practice: A Scoping Review. *Nursing in Critical Care*, *31*(5), e70629.

[3] NI-BC, A. I. M. P., CPHIMS, C., FHIMSS, S. H. H., & MSHI, R. (2025). NURSES embracing artificial intelligence: A guide to artificial intelligence literacy for the nursing profession. *Nursing outlook*, *73*(4), 102466.

[4] Aljohani, N. H. (2026). Artificial Intelligence in Nursing Leadership Decision-Making Opportunities, Challenges, and Future Directions: A Review Article. *Journal of Intelligent Decision Making and Information Science*, *3*(11s), 488-520.

[5] Scholar, M. N. P., & Cum, H. O. D. Artificial intelligence and robotics in patient monitoring and robotic patient handling: Reducing nurse burnout and improving patient outcomes.

[6] Egbeh, N. C., Emesowum, A., Nwagwu, A. S., Vincent, C., Ibebuike, J., & Onyekwuo, F. (2026). Teaching Nurses in The Digital Age: The Transformative Roles of Artificial Intelligence. *ICON Journal of Applied Medical Sciences*, *2*(7), 14-21.

[7] Whitmore, J. A., Harrington, E. C., Bennett, O. T., Montgomery, S. E., & Fletcher, W. H. Impact of Digital Health Technologies on the Quality of Nursing Care.

[8] Alharbi, T., & Azam, F. (2026). The Impact of Artificial Intelligence Capabilities on E-Governance Excellence within the Saudi Ministry of Health. *Journal of Natural Ramedies*, *1*(1), 342-356.

[9] Manishimwe, T., Gunn, V., & Eappen, P. Decision-Making Transparency Beyond Clinical Settings: Explainable AI Innovation in Telehealth and the Role of Social and Developmental Factors in AI Adoption. In *Enhancing Healthcare Informatics with Transparent and Explainable AI* (pp. 39-61). Auerbach Publications.

[10] Alarfaj, S. J., Wahsh, E., Saad, K., & Sawan, E. S. (2026). Digital health in clinical pharmacy practice: transforming precision medicine and pharmacometrics in Africa. *Frontiers in Pharmacology*, *17*, 1924654.

[11] Lehtinen, A., & Collan, M. (2026). Scandinavian Healthcare AI Landscape and Trends 2026: Norway, Denmark & Sweden.

[12] Almasalha, F., Darabseh, M. Z., Abu Beidar, M., Bin Sheeha, B., Jebreel, S. F. H., Al Tawil, A., ... & Aburub, A. (2026, October). Digital Health and Artificial Intelligence Continuing Professional Development Needs Among Rehabilitation Professionals in Jordan: A National Mixed-Methods Study. In *Healthcare*. Multidisciplinary Digital Publishing Institute.

[13] Alsahli, S. (2026, September). Stakeholder Perspectives on Health System Readiness for Integrating Artificial Intelligence into Public Health in Saudi Arabia. In *Healthcare* (Vol. 14, No. 18, p. 3008). MDPI.

[14] Aljohani, N. H. (2026). Artificial Intelligence in Nursing Leadership Decision-Making Opportunities, Challenges, and Future Directions: A Review Article. *Journal of Intelligent Decision Making and Information Science*, *3*(11s), 488-520.

[15] Sang, B. (2026). Evaluating The Impact of An Ai-Driven Clinical Decision Support System on Nursing Students' Accuracy in Care-Plan Formulation During Telemedicine Practicum. *Fastlane Journal*, *2*(3), 15-33.

[16] Vishwakarma, S., & Chaudhary, S. (2026). From Intelligent Systems to Intelligent Nursing: Artificial Intelligence in Medical-Surgical Nursing Current Applications, Challenges, and Future Perspectives.

[17] Amine, B. M., Bouzit, M., Mahlaq, S., Mohamed, M., & Ahmed, K. (2026). Artificial intelligence-assisted nursing education: Effect of a GPT-based ADPIE assistant on care planning performance and cognitive workload. *Teaching and Learning in Nursing*.

[18] Zhang, P. M., Chong, H., & O'Connor, P. S. (2026). Evaluating the AI Nurses Network: A cross-sectional survey on the resources and impact of a global network on artificial intelligence in nursing. *Nursing Outlook*, 102914.

[19] Alshammari, A. T. A., & Ahmad, N. S. H. N. (2026). Artificial Intelligence-Enabled Health Informatics and Nurse Performance: A Systematic Literature Review of Communication, Empowerment, and Occupational Stress. *Journal of Management Practices, Humanities and Social Sciences*, *10*(4), 637-657.

[20] Maraş, G., Albayrak Günday, E., & Sürme, Y. (2026). Examining the anxiety and preparedness levels of nurses and nurse candidates for artificial intelligence health technologies. *Journal of Clinical Nursing*, *35*(10), 4256-4264.

[21] Almagharbeh, W. T., Alkubati, S. A., Alasmari, A. A., Alharbi, A. A., Alfanash, H. A., Abuadas, F. H., ... & Alatawi, A. (2026). Harnessing Artificial Intelligence to Strengthen Acute and Critical Care Nursing Practice: A Systematic Review. *Nursing in Critical Care*, *31*(5), e70606.

[22] Watson, A. L., Bond, C., Aveyard, H., Smith, G. D., & Jackson, D. (2026). Generative AI at the bedside: an integrative review of applications and implications in clinical nursing practice. *Journal of Clinical Nursing*, *35*(10), 4022-4037.

[23] El Arab, R. A., Al Moosa, O. A., Abuadas, F. H., & Somerville, J. (2025). The role of AI in nursing education and practice: umbrella review. *Journal of medical Internet research*, *27*, e69881.

[24] El-Gazar, H. E., S. Abdelhafez, A. M. Ali, M. Shawer, T. A. F. Alharbi, and M. A. Zoromba. 2024. "Are Nurses and Patients Willing to Work With Service Robots in Healthcare? A Mixed-Methods Study." BMC Nursing 23

[25] El Arab, R. A., Al Moosa, O. A., Abuadas, F. H., & Somerville, J. (2025). The role of AI in nursing education and practice: umbrella review. *Journal of medical Internet research*, *27*, e69881.

[26] Abbas, A. F., & Al-Lawati, E. H. (2026). Revisiting artificial intelligence in start-ups: A theoretical perspective on integration, opportunities, challenges, and strategic advancement. *Journal of the International Council for Small Business*, *7*(4), 1113-1156.

[27] Liu, Y., Huang, Y., Huang, A., Chen, X., Chen, Y., & Li, L. (2026). How nursing informatization impacts nurses' humanistic caring: a qualitative study based on Social Cognitive Theory. *Frontiers in Medicine*, *13*, 1929882.

[28] Westerhof, A., Hilhorst, C., & Bos, W. J. (2024). The impact of health information technology on hospital performance: a systematic integrative literature review. *Health*, *16*(4), 257-279.