

EDITORIAL


Nurses are never gone or forgotten: Breaking barriers to enhance nursing care with technology


Eka Sakti Wahyuningtyas¹ , Mira Naguib Abd-Elrazek²

Author information

¹ Department of Nursing, Universitas Muhammadiyah Magelang, Indonesia

² Department of Nursing, Alexandria University, Egypt

 ekasakti@ummgl.ac.id

 <https://doi.org/10.31603/nursing.v11i2.12409>

Abstract

In recent years, healthcare systems around the world have undergone significant transformation, and the integration of technology into nursing care is at the forefront of this evolution. From electronic health records (EHR) to telemedicine, technology is reshaping the way nurses deliver care, improving patient outcomes, and enhancing efficiency. However, as promising as these advancements are, there remain significant barriers that must be overcome to fully leverage the potential of technology in nursing. This editorial explores these challenges and how they can be addressed to pave the way for more effective, patient-centered care. One of the most significant barriers to the adoption of technology in nursing is the lack of adequate infrastructure. Many healthcare settings, particularly in low-resource environments, lack the necessary equipment, reliable internet connectivity, or even the technical support needed to implement advanced technological solutions. Without these foundational resources, even the most innovative tools cannot be effectively utilized, leaving nurses and patients at a disadvantage.

Keywords: Healthcare systems; health records; nursing development; patient care; telemedicine; telehealth

Advanced technologies in health, while potentially cost-saving in the long run, often require significant upfront investments (Booth, Strudwick, McBride, O'Connor, & Solano López, 2021). In addition to infrastructure limitations, the issue of cost cannot be ignored (Luxon, 2015). Hospitals and healthcare facilities, especially in developing countries, may struggle to justify these expenditures when faced with competing priorities (Gudiksen & Murray, 2022). Furthermore, the maintenance and updating of such technologies require ongoing financial commitments, which can strain already tight budgets (Altmiller & Pepe, 2022). Another challenge lies in the digital literacy of the nursing workforce. While new generations of nurses may be more familiar with technology, many seasoned nurses may find it challenging to adapt to new systems (Wilandika, Pandin, & Yusuf, 2023). This can lead to frustration and resistance to change, slowing down the adoption of technological tools. Comprehensive training programs and ongoing support are essential to help nurses develop the necessary skills to effectively use these tools in their daily practice. Moreover, integrating technology into nursing care can sometimes disrupt traditional workflows. Nurses are accustomed to certain routines and processes, and introducing new technology often requires them to alter their established ways of working (Hogan, Hughes, & Coyne, 2024). This adjustment period can lead to inefficiencies and even increased stress for nurses, particularly if the technology is not user-friendly or if it adds to their already heavy workload. Patient privacy and data security are also critical concerns when it comes to using technology in healthcare. Nurses handle sensitive patient information daily, and the increased use of digital platforms raises the risk of data breaches (Tegegne et al., 2022). Ensuring that all technological tools meet stringent security standards is vital to maintaining patient trust and confidentiality. Healthcare organizations must invest in robust cybersecurity measures to protect patient data and comply with privacy regulations (Weston, Paglioli, & Mesquita, 2023).

Telemedicine, one of the most significant advancements in healthcare technology, presents both opportunities and challenges for nursing care. While it allows nurses to reach patients in remote areas and provide care across distances, it also requires nurses to develop new communication skills and adapt to virtual patient interactions (Haleem, Javaid, Singh, & Suman, 2021). Furthermore, the success of telemedicine relies heavily on the patient's access to and comfort with technology, which is not always guaranteed, particularly among older or underserved populations. Despite

these challenges, the potential benefits of technology in nursing are immense. One of the most promising applications is the use of artificial intelligence (AI) and machine learning to assist nurses in clinical decision-making (Rony, Parvin, M. R., & Ferdousi, S. (2024). These tools can analyze vast amounts of data quickly, providing nurses with insights that can help them identify potential complications or predict patient outcomes more accurately. However, it is crucial to ensure that AI tools are used as aids rather than replacements for human judgment. Wearable technology and remote monitoring devices also hold great promise in nursing care. These devices can provide real-time data on patients' vital signs, allowing nurses to monitor patients more closely and intervene when necessary (Robert, 2019). This can be particularly valuable in managing chronic conditions, where continuous monitoring can help prevent hospital readmissions and improve overall patient health.

Interdisciplinary collaboration is another essential factor in successfully integrating technology into nursing care (Ohri et al., 2022). Nurses must work closely with IT specialists, engineers, and other healthcare professionals to ensure that technological tools are designed and implemented with the needs of both patients and nurses in mind. Without this collaboration, there is a risk that technology may become a hindrance rather than a help (Samuriwo, 2022). Moreover, policymakers and healthcare leaders play a crucial role in supporting the adoption of technology in nursing. Allocating resources for infrastructure improvements, providing funding for training programs, and creating policies that promote the use of technology can help remove some of the barriers currently hindering progress. It is essential that healthcare policy is aligned with technological advancements to ensure that nurses can take full advantage of the tools available to them. Telemedicine became a lifeline for many patients, and the use of digital health records allowed for better coordination of care. However, the rapid shift to virtual care also exposed gaps in infrastructure, training, and access that must be addressed to ensure that technology can be used effectively in the future. Looking ahead, the future of nursing will undoubtedly be shaped by technology (Mohammadnejad, Freeman, Klassen-Ross, Hemingway, & Banner, 2023). As new tools and platforms continue to emerge, nurses will need to adapt and embrace these changes to provide the highest level of care to their patients. However, it is essential that this process is guided by a clear understanding of the challenges and barriers that exist, and by a commitment to addressing these issues proactively. While the road to fully integrating technology into nursing care is not without obstacles, the potential rewards are well worth the effort. Investing in infrastructure, providing adequate training, ensuring data security, and fostering interdisciplinary collaboration, the healthcare sector can break down the barriers that currently stand in the way of technological advancement. With the right support, technology has the power to revolutionize nursing care, making it more efficient, personalized, and accessible to all patients (Dykes & Chu, 2021).

Dealing with barriers to technology in nursing care is essential for improving patient outcomes and enhancing the efficiency of healthcare delivery. The integration of technology in nursing practice can significantly streamline processes, improve communication, and facilitate better patient monitoring. However, several barriers can impede this integration, including inadequate training, resistance to change, technological infrastructure issues, and concerns about data privacy and security. Addressing these barriers requires a multifaceted approach that encompasses education, leadership support, resource allocation, and a focus on patient-centered care (Bimerew & Chipps, 2022). One of the primary barriers to technology adoption in nursing is the lack of adequate training and education. Many nurses may feel overwhelmed by new technologies, particularly if they have not received proper training. This can lead to frustration and reluctance to use technology effectively. To overcome this barrier, healthcare organizations should invest in comprehensive training programs that not only introduce new technologies but also provide ongoing support (Carayon, Hundt, & Hoonakker, 2019). Simulation-based training, mentorship programs, and hands-on workshops can help nurses build confidence and competence in using technology (Stenseth et al., 2022). Additionally, fostering a culture of continuous learning can encourage nurses to stay updated on technological advancements and best practices. Resistance to change is another significant barrier in nursing care when it comes to technology. Many nurses may be accustomed to traditional methods and may view new technologies as disruptive or unnecessary. To address this resistance, it is crucial for healthcare leaders to communicate the benefits of technology clearly. Engaging nurses in the decision-making process when selecting new technologies can also foster a sense of ownership and acceptance (Akbar, Lyell, & Magrabi, 2021). Involving nursing staff in discussions about technology implementation can address concerns, gather valuable feedback, and highlight how technology can enhance their daily routines rather than complicate them.

Technological infrastructure can also pose a barrier to effective nursing care. Inadequate hardware, software, or internet connectivity can hinder the implementation of new technologies. For instance, if a hospital lacks reliable electronic health record (EHR) systems or has outdated equipment, nurses may struggle to provide efficient care. To mitigate these challenges, healthcare organizations must prioritize investments in robust technological infrastructure. This includes ensuring that all staff have access to necessary devices, maintaining up-to-date software, and providing

reliable internet access. Regular assessments of technological needs and infrastructure can help identify gaps and inform future investments (Vassolo et al., 2021). Concerns about data privacy and security are critical barriers to technology adoption in nursing care. With the increasing use of digital health records and telehealth services, nurses may worry about the confidentiality of patient information. To alleviate these concerns, healthcare organizations must implement stringent data protection measures and provide education on best practices for safeguarding patient information. Training sessions on cybersecurity, data handling, and compliance with regulations such as HIPAA can empower nurses to use technology confidently while protecting patient privacy. Fostering a culture of security awareness can help mitigate fears surrounding technology use. Addressing the barriers to technology in nursing care requires a comprehensive strategy that includes training, change management, infrastructure investment, and a focus on data security. Prioritizing education and support can empower nurses to embrace technology, ultimately leading to improved patient care and outcomes. Engaging nurses in the implementation process, investing in necessary resources, and addressing concerns about data privacy will create a more conducive environment for technological integration (Vraciu, 1980). As technology continues to evolve, it is essential for nursing practice to adapt, ensuring that nurses are equipped to provide the highest quality of care in a rapidly changing healthcare landscape.

In the current landscape of healthcare, the integration of technology into nursing practice is crucial for enhancing patient care and improving operational efficiency. As healthcare systems increasingly adopt EHR, telehealth services, and mobile health applications, nursing publications should focus on the challenges and strategies associated with technology adaptation. Highlighting successful case studies and best practices can provide valuable insights into how nurses can effectively utilize technology to streamline workflows, enhance communication, and improve patient outcomes. This emphasis on technology adaptation will not only support nurses in their daily practice but also promote a culture of innovation within the nursing profession. Moreover, nursing publications should address the importance of ongoing education and training in technology use. As new tools and platforms emerge, it is essential for nurses to stay informed and skilled in utilizing these technologies effectively. Articles that explore educational frameworks, simulation training, and mentorship programs can help guide nursing educators and leaders in developing comprehensive training initiatives. Fostering a commitment to lifelong learning can empower nurses to embrace technology confidently, ultimately leading to improved patient care and safety. The ethical implications of technology in nursing practice must be a focal point in contemporary publications. As nurses increasingly rely on digital tools for patient management, concerns regarding data privacy, cybersecurity, and the ethical use of artificial intelligence in healthcare arise. Journals should encourage discussions around these topics, providing a platform for nurses to share their experiences and insights. Addressing the ethical dimensions of technology adaptation can help ensure that the integration of technology into practice aligns with the core values of nursing, including patient-centered care, advocacy, and respect for patient autonomy. This comprehensive approach will ultimately contribute to a more effective and ethical nursing practice in an increasingly technological world.

Government funding for research focused on the adaptation of technology in nursing is essential for several reasons (Woods et al., 2023). First and foremost, investing in this area can lead to significant improvements in patient care and health outcomes. As healthcare systems increasingly rely on digital tools, such as EHR, telehealth platforms, and mobile health applications, understanding how nurses can effectively integrate these technologies into their practice becomes critical. Research can help identify best practices, barriers to implementation, and the impact of technology on patient safety and satisfaction. Funding studies that explore these aspects can ensure that nursing practice evolves alongside technological advancements, ultimately benefiting patients and the healthcare system as a whole (Stoumpos, Kitsios, & Talias, 2023). Moreover, government support for research in technology adaptation within nursing can foster innovation in healthcare delivery. Providing grants and funding opportunities can encourage collaborations between academic institutions, healthcare organizations, and technology developers. Such partnerships can lead to the development of new tools and solutions tailored to the unique needs of nursing practice (Doarn et al., 2014). For instance, research can explore the creation of user-friendly interfaces for EHR or the development of telehealth solutions that address specific patient populations. This collaborative approach not only enhances the relevance of research findings but also accelerates the translation of innovative solutions into practice, ensuring that nurses are equipped with the best tools to provide high-quality care.

Lastly, funding research in this area can promote workforce development and retention in nursing (Halpaap, Peeling, & Bonnici, 2019). As technology continues to reshape the healthcare landscape, there is a growing need for nurses who are not only skilled in clinical practice but also proficient in using technology effectively (Tang, Eisenberg, & Meyer, 2004). Government-funded research can inform educational programs and training initiatives that prepare nursing students and current practitioners to navigate the complexities of technology in healthcare (Benjamin & Potts, 2018).

Understanding the challenges and opportunities associated with technology adaptation, nursing programs can better equip their graduates with the necessary skills, ultimately leading to a more competent and confident nursing workforce. This investment in education and training will not only enhance the quality of care provided to patients but also contribute to the overall sustainability and resilience of the healthcare system.

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Editor's insight

Key points

- It is essential to provide comprehensive education and training programs to integrate technology into practice
- Breaking down barriers to technology adoption requires collaboration among healthcare professionals
- The integration of technology in nursing should always prioritize patient-centered care

Emerging nursing avenues

- What specific barriers when integrating technology into practice?
- How can these challenges be effectively addressed?
- In what ways can technology be leveraged to enhance communication and collaboration among nursing teams?

How to cite this article (APA style)

Wahyuningtyas, E. S., & Abd-Elrazek, M. N. (2024). Nurses are never gone or forgotten: Breaking barriers to enhance nursing care with technology. *Journal of Holistic Nursing Science*, 11(2), 52-56. <https://doi.org/10.31603/nursing.v11i2.12409>