

Telehealth Nursing: Revolution, Challenges, Future Landscape

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Abstract

The COVID-19 pandemic accelerated telehealth adoption in nursing, presenting both transformative opportunities and significant challenges. Nurses embraced virtual care, improving patient access and convenience, yet grappled with digital literacy, equitable access, and ethical dilemmas. This shift demanded innovations in education, chronic disease management, and mental health services, alongside crucial policy and regulatory adjustments. Challenges included technology integration, nurse well-being, and data security. The future requires addressing global disparities, strengthening infrastructure, and standardizing virtual care competencies to ensure sustainable, high-quality, digitally-enabled nursing practice.

Keywords

Telehealth; Nursing; Digital transformation; COVID-19; Virtual care; Patient access; Ethical challenges; Nursing education; Chronic disease management; Nurse well-being

Introduction

Nurses quickly adopted telehealth during the pandemic, adjusting to new care models. This shift brought both benefits, like better patient access and convenience, and significant challenges. Issues included ensuring fair access for all patients, improving digital literacy for both nurses and patients, and managing the considerable mental and emotional stress on nurses who were learning new systems while dealing with a crisis. This experience emphasized the strong need for better training, reliable technical support, and policies that truly support virtual care delivery [1].

Nurses had to become proficient with new technologies on the fly. This qualitative study explores their experiences with technol-

ogy in patient care during the pandemic, detailing both its promise and its problems. It talks about the advantages of efficient communication and remote patient monitoring, alongside the frustrations stemming from technical glitches, data security worries, and the sometimes impersonal nature of virtual interactions. The true innovation here isn't just the technology itself, but how nurses creatively modified their practice to make it effective for patients [2].

Moving care into virtual settings naturally brought up new ethical questions. This review highlights major issues such as protecting patient privacy and confidentiality in digital spaces, making sure patients give informed consent for telehealth services, and addressing digital equity concerns, especially for vulnerable groups lacking access or digital skills. The innovative solutions here involve creating strong ethical guidelines and frameworks specifically for virtual care. This ensures that the convenience of telehealth does not compromise patient rights or the quality of care [3].

Integrating telehealth into nursing education is now essential. A systematic review indicates great potential to prepare future nurses for virtual care, though there are obstacles. Educators must develop

curricula that extend beyond clinical skills to include digital patient assessment, effective virtual communication, and an understanding of telehealth ethics. Innovations include using simulation, virtual reality, and structured online learning to give students practical experience, ensuring they are ready to provide excellent care in both in-person and remote settings [4].

Managing chronic diseases through telehealth offers big benefits and complex challenges for nurses. Virtual check-ups and remote monitoring have greatly improved access for many patients, particularly those in rural areas or with mobility issues. Nurses find value in tracking patient progress closely and intervening proactively. However, difficulties arise when connecting with patients who have limited technological access or skills, accurately assessing without physical touch, and dealing with technical integration in multi-disciplinary care. The innovation here is about developing tailored telehealth plans and using hybrid models to support continuous, effective chronic care [5].

Mental health nursing quickly adopted telehealth, and this study sheds light on that transition for practitioners. Virtual sessions broke down geographical barriers, increased patient engagement through convenience, and lessened the stigma of seeking mental health help. Conversely, nurses struggled to build rapport virtually, interpret non-verbal cues, and manage crises remotely. Innovations involve creating specialized telehealth communication methods, integrating digital tools for mood tracking, and setting up clear protocols for remote crisis intervention, all while prioritizing therapeutic relationships [6].

Widespread telehealth requires careful policy and regulatory development. This paper notes that while the pandemic relaxed many rules, a stable framework is needed for telehealth to be sustainably, ethically, and effectively integrated into nursing. Key challenges include licensing across different states, fair reimbursement models for nursing work, and establishing consistent standards of care for virtual practice. The innovations involve advocating for updated laws, creating new regulatory guidance for virtual nursing, and building frameworks that support nurse independence and patient safety in the digital health era [7].

The pandemic sped up nursing's digital transformation, bringing both major chances and tough challenges. Nurses now use a wider range of digital tools, from remote monitoring to Artificial Intelligence (AI)-driven diagnostic support. This shift promises more efficiency and better patient outcomes through data insights. Yet, challenges include overcoming digital exclusion, ensuring data security, and integrating complicated systems without increasing nurse burnout. Innovations focus on designing easy-to-use digital

interfaces, providing thorough digital literacy training, and using technology to enhance, not replace, human nursing care [8].

It's crucial to examine how telehealth impacts nurses themselves. This review explores its effects on their workload and overall well-being. While telehealth offers flexibility and can lessen some physical demands, it also brings new stresses: handling technical problems, feeling isolated from colleagues, and the added mental effort of virtual assessment. The goal is to balance efficiency with nursing's human side. Innovations concentrate on building better technical support, fostering virtual team unity, and putting in place policies that shield nurses from too many virtual demands, making sure digital tools improve, rather than reduce, their well-being [9].

Looking ahead, telehealth in nursing needs to evolve beyond its pandemic origins for true sustainability. A global perspective shows that addressing key challenges like unequal access, ensuring strong technological infrastructure, and standardizing virtual care competencies worldwide is crucial. Innovations will involve integrating telehealth more deeply into universal healthcare plans, promoting international collaboration on best practices, and continuously adapting education and policy to support a diverse, digitally-skilled nursing workforce capable of providing high-quality care globally [10].

Description

The rapid embrace of telehealth by nurses during the pandemic marked a significant shift in care delivery, bringing both advantages and considerable challenges [1]. This adaptation required nurses to quickly become comfortable with new technologies, navigating both their potential and pitfalls in patient care [2]. While improved patient access and convenience were clear benefits, issues like ensuring equitable access for diverse patient populations, the necessity for enhanced digital literacy among both healthcare providers and patients, and the profound mental and emotional toll on nurses managing new systems amidst a crisis were very real [1]. The experience underscored a critical demand for better training, robust technical support, and policies that genuinely back virtual care delivery [1]. Nurses experienced the benefits of efficient communication and remote monitoring, but also the frustrations from technical glitches, data security concerns, and the impersonal nature of some virtual interactions. The true innovation here was not just the technology itself, but how nurses creatively adapted their practice to make it work effectively for patients [2].

Shifting care to a virtual environment introduced new ethical

dilemmas that required careful consideration. Key challenges included maintaining patient privacy and confidentiality in digital settings, ensuring informed consent for telehealth services, and addressing digital equity, particularly for vulnerable populations who might lack adequate access or digital literacy [3]. The innovative response to these issues has been the development of comprehensive ethical frameworks and guidelines specifically designed for virtual care, aiming to prevent the convenience of telehealth from undermining patient rights or the quality of care [3]. Furthermore, the broader digital transformation of nursing, accelerated by the pandemic, introduced a wider array of digital tools, from remote monitoring devices to Artificial Intelligence (AI)-driven diagnostic support [8]. This transformation promised greater efficiency and improved patient outcomes through data-driven insights. However, it also brought challenges such as overcoming digital exclusion, ensuring robust data security, and integrating complex systems without exacerbating nurse burnout [8]. Innovations focused on designing user-friendly digital interfaces, providing comprehensive digital literacy training, and leveraging technology to augment, rather than replace, human nursing care [8].

Integrating telehealth into nursing education has become an imperative. Systematic reviews show immense potential in preparing future nurses for virtual care, despite existing hurdles [4]. Educators need to create curricula that go beyond traditional clinical skills to include digital patient assessment, effective virtual communication strategies, and a solid understanding of telehealth ethics. Innovations involve utilizing simulation, virtual reality, and structured online learning modules to provide students with hands-on experience, ensuring their readiness to deliver high-quality care, whether in person or remotely [4]. In practice, managing chronic diseases via telehealth offers significant advantages, like improved access for patients in rural areas or with mobility challenges, and enables nurses to closely track progress and intervene proactively [5]. However, connecting with patients who have limited technological access or skills, conducting accurate assessments without physical touch, and integrating technical solutions into multi-disciplinary care remain significant hurdles. The innovation lies in developing personalized telehealth plans and employing hybrid models for continuous, effective chronic care [5]. Similarly, mental health nursing rapidly adopted telehealth, revealing both benefits like breaking down geographical barriers and reducing stigma, and challenges in building virtual rapport, assessing non-verbal cues, and managing crises remotely [6]. Specialized communication techniques and digital tools for mood tracking emerged as key innovations [6].

The widespread adoption of telehealth demands a thoughtful approach to policy and regulation to ensure its sustainable, ethical, and

effective integration into nursing. While the pandemic temporarily eased many restrictions, a lasting framework is crucial [7]. Key policy challenges encompass licensing across state lines, establishing reimbursement models that fairly reflect nursing work, and setting consistent standards of care for virtual practice [7]. Innovation here means advocating for updated legislative policies, developing new regulatory guidance for virtual nursing, and creating frameworks that support nurse autonomy and patient safety in the digital health era [7]. It is also important to consider the direct impact of telehealth on nurses' workload and overall well-being. While telehealth offers flexibility and can reduce some physical demands, it introduces new stressors, such as managing technical issues, dealing with isolation from colleagues, and the increased cognitive load of virtual assessment [9]. The challenge is to strike a balance between efficiency and the essential human element of nursing. Innovations aim at creating better technical support systems, fostering virtual team cohesion, and implementing policies that protect nurses from excessive virtual demands, ultimately ensuring that digital tools enhance, rather than deplete, their well-being [9].

The future of telehealth in nursing goes beyond merely continuing pandemic-era practices; it necessitates evolution. A global perspective emphasizes that for telehealth to be truly sustainable, fundamental challenges must be addressed, including disparities in access, the need for robust technological infrastructure, and standardizing competencies for virtual care worldwide [10]. Future innovations will involve integrating telehealth more deeply into universal healthcare designs, promoting international collaboration on best practices, and continuously adapting education and policy to support a diverse, digitally-skilled nursing workforce capable of delivering high-quality care globally [10]. This holistic approach ensures that telehealth remains a powerful tool for advancing healthcare.

Conclusion

The rapid adoption of telehealth by nurses during the COVID-19 pandemic revolutionized healthcare delivery, introducing both significant opportunities and complex challenges. Nurses quickly adapted to virtual care, enhancing patient access and convenience, but faced hurdles like digital literacy gaps, equitable access concerns, and the emotional toll of learning new systems under pressure. The technological shift brought benefits such as efficient communication and remote monitoring, alongside frustrations from glitches, data security risks, and impersonal interactions.

Ethical considerations like patient privacy, informed consent, and digital equity became paramount, spurring the development of

new ethical frameworks. The integration of telehealth into nursing education is now essential, requiring curricula that include digital assessment, virtual communication, and telehealth ethics, often through simulation and online modules. For managing chronic diseases and delivering mental health services, telehealth improved access and engagement but also presented difficulties in remote assessment, building rapport, and crisis management, leading to innovations in personalized plans and specialized communication techniques.

Policy and regulatory frameworks are critical for sustainable telehealth, addressing licensing, reimbursement, and care standards. The broader digital transformation of nursing highlights opportunities for efficiency through new tools but also demands attention to digital exclusion, data security, and preventing nurse burnout. Ultimately, ensuring nurse well-being amid new virtual demands is crucial. Looking forward, the future of telehealth in nursing requires addressing global disparities in access, strengthening infrastructure, and standardizing competencies, moving towards deeper integration into universal healthcare with continuous adaptation in education and policy.

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