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NARRATIVE REVIEW 2

Telehealth in geriatric nursing: A mini narrative review

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Abstract

The growing global ageing population presents significant challenges for healthcare systems, necessitating innovative, scalable solutions to meet the complex needs of older adults. This mini-narrative review examines the role of telehealth in geriatric nursing, highlighting its potential to improve access, continuity, and quality of care for older adults, including those who are socially isolated or living in low-resource settings. Key telehealth interventions discussed include video consultations, remote health monitoring, telephone follow-ups, mobile applications, and ambient assisted living technologies. The review outlines the numerous benefits of telehealth, such as enhanced patient engagement, caregiver support, and reduced healthcare costs. However, it also identifies critical challenges, including technological barriers, digital literacy gaps, ethical concerns related to informed consent and data security, and systemic issues like inadequate reimbursement and policy frameworks. Special attention is given to the unique barriers and facilitators of telehealth adoption among older adults, particularly in low and middle-income countries. The review underscores the importance of user-centred design, supportive infrastructure, culturally competent training, and regulatory policies that prioritise digital equity. Despite promising advancements, research gaps persist in terms of standardised protocols, long-term outcomes, and tailored approaches for diverse geriatric populations. The paper concludes by emphasising the need for sustained investment, ethical vigilance, and nurse-led innovation to ensure that telehealth becomes a reliable, inclusive pillar of geriatric care globally.

Keywords: housing for the elderly, automation, social isolation, remote patient monitoring, self-help devices, telemedicine

Introduction

The demographic transition toward an ageing global population has necessitated innovative strategies in healthcare delivery, especially in the field of geriatric nursing. According to the World Health Organisation, by 2050, over two billion individuals will be aged 60 or above, amplifying the demand for accessible and comprehensive care [1]. Older adults often face chronic illnesses, mobility limitations, and social isolation, particularly those without familial support, usually referred to as socially isolated elders or "elder orphans" [2]. These challenges strain traditional healthcare systems, highlighting the need for scalable, efficient alternatives.

Telehealth, broadly defined as the remote delivery of healthcare services through information and communication technologies, has emerged as a critical tool in addressing these needs [3]. It offers flexible, person-centred care that can bridge physical distance, reduce the burden of travel, and enhance continuity of care. For nurses, telehealth facilitates timely monitoring, chronic disease management, emotional support, and caregiver engagement, even in rural or underserved areas. As nurses have been identified as the health care professionals who effectively facilitate the desire to age in place, the advancement of telehealth in nursing practice will advance geriatric nursing practice [4]. This review examines current telehealth interventions in geriatric nursing and discusses

the ethical, technological, and policy considerations that influence their implementation and sustainability.

Telehealth interventions in geriatric nursing

Telehealth encompasses various digital modalities designed to enhance elder care (Figure 1). The key telehealth interventions include video consultations, remote health monitoring, telephone follow-ups, mobile applications, and smart home solutions.

Video consultations

Video consultations offer real-time, interactive communication between patients and healthcare providers, particularly beneficial for patients in rural or underserved areas. Evidence indicates that video-based care can equal the quality of in-person consultations, particularly in palliative care settings, while enhancing patient satisfaction due to its convenience [5].

Remote health monitoring

Remote health monitoring systems utilise wearable devices and Internet of Things (IoT) technologies to collect vital signs and health data continuously. These systems support timely interventions by allowing early detection of health changes and reducing the frequency of hospital visits [6]. Such tools promote independence and engagement in self-care among older adults [7].

Telephone follow-ups

Telephone follow-ups provide continuity of care and emotional support, particularly for elders recovering post-discharge or dealing with isolation. These follow-ups are especially important for elderly patients who may experience isolation or require reassurance after hospital discharge [8]. Telephone-based care has proven effective in medication adherence and offers a practical solution for mental health support in older populations [9].

Mobile health applications

Mobile health applications further empower older adults by providing medication reminders, educational materials, and tools for managing chronic diseases. These applications can enhance patient autonomy and health literacy, particularly when adapted to the needs of those with limited digital proficiency [10].

Ambient Assisted Living

Ambient assisted living (AAL) and smart home technologies create a safer and more responsive living environment for elderly individuals. These systems incorporate sensors and automated alerts that detect emergencies such as falls, thereby supporting ageing in place and reducing caregiver burden [11,12]. Studies suggest that older adults view these systems as beneficial for their independence and well-being [13].

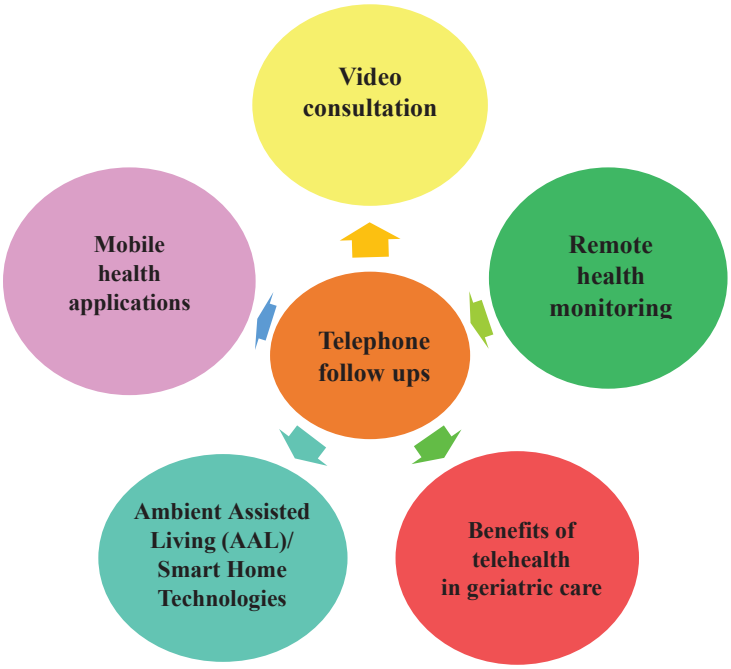

Figure 1. The key telehealth interventions available in geriatric nursing.

Telehealth offers significant benefits in geriatric care by enhancing accessibility, promoting continuity of care, and improving health outcomes. Telehealth reduces travel time and costs for patients, which is particularly advantageous for older adults with mobility limitations or those residing in rural or underserved areas. This reduction in travel time and associated costs improves appointment adherence and access to timely medical interventions [14]. It also enhances caregiver involvement by facilitating easier communication with healthcare providers and reducing psychological stress [15]. In rural or underserved communities, telehealth serves as a critical bridge for reaching isolated patients and improving overall healthcare accessibility [16].

Patient engagement and satisfaction are also enhanced through telehealth, particularly when aligned with frameworks like the Quadruple Aim, which emphasises patient experience, population health, cost efficiency, and provider well-being [17]. Through telehealth, patients are not only better informed but also feel more in control of their health management.

Challenges and barriers

Despite its benefits, telehealth adoption in geriatric nursing is hindered by various challenges. At the individual level, physical limitations such as hearing or vision impairments, cognitive decline, and motor skill deficits complicate the use of digital tools [18]. Technological issues include poor interface design, complex navigation, alert fatigue, and cost-related barriers, especially for those on fixed incomes or living in remote areas [12].

Relational challenges also exist in the context. The lack of technical support and the perception of telehealth as impersonal can discourage participation, especially in mental health contexts where face-to-face interaction is preferred [19]. Nurses are recommended to adapt their communication styles to foster meaningful virtual relationships and address the emotional needs of patients [20; 21].

Healthcare providers themselves face obstacles, such as insufficient training in using telehealth technologies, a lack of confidence, and concerns about the impact on care quality [22]. Financially, many telehealth services are not fully reimbursed by insurers, leading to inequities in access and use [23].

Older adults face several barriers to using digital health technologies, including technology anxiety, low literacy, budget constraints, aversion to change, privacy concerns, and security concerns. Adoption is hindered in low- and middle-income economies due to inadequate infrastructure, support systems, and insufficient policy frameworks [24].

Facilitators of telehealth adoption

Several factors support the successful integration of telehealth among older adults. Intrinsic factors, such as a willingness to improve health, curiosity about new technologies, and altruism (e.g., participation in research), can enhance engagement. Technological facilitators include user-friendly interfaces, audiovisual aids, and personalised content. Providing free or subsidised access to devices and the internet can address financial constraints [18] .

Training programs, peer support, and culturally relevant education can increase digital competence among older adults. Family involvement and culturally sensitive outreach efforts help increase participation, especially among diverse populations. Trust in telehealth systems, fostered by healthcare provider endorsements and transparent data policies, also plays a key role in acceptance and sustained adaptation.

Ethical and policy considerations

The use of telehealth in elder care raises significant ethical and policy-related considerations (Figure 2).

Informed consent challenges

Obtaining meaningful informed consent in telehealth encounters with elderly patients presents unique complexities. Traditional in-person informed consent approaches face notable obstacles, including geographic barriers, transportation costs, and literacy challenges [25]. Healthcare providers must ensure that elderly patients fully understand the nature of virtual care, including its benefits, limitations, and potential risks.

The process becomes particularly challenging when patients have varying degrees of health literacy and digital literacy [26]. Key ethical considerations include informed consent (information about the risks and benefits of remote therapy) and autonomy, patient privacy and confidentiality [27]. Providers must adapt their consent processes to accommodate cognitive impairments, hearing difficulties, and technological unfamiliarity that are common among older adults.

Best practices for telehealth informed consent should include sending consent forms in advance for review, using clear and simple language during discussions, and ensuring patients understand the technology being used and their rights regarding data privacy and security [28].

Digital equity and access barriers

Digital equity is another major concern, as the digital divide disproportionately affects older adults with limited

access to technology or support systems, as older adults in marginalised or low-income groups face disproportionate barriers to access [3]. Policymakers and healthcare institutions must develop inclusive frameworks that address these disparities and promote the ethical implementation of telehealth.

Data privacy and security concerns

The protection of sensitive health information becomes more complex in telehealth environments. Elderly patients may be particularly vulnerable to privacy breaches due to their limited understanding of digital security measures. Privacy concerns were more addressed in-home telecare [29]. Healthcare providers must implement robust security protocols while ensuring that privacy protections do not create additional barriers to access. Key considerations include secure communication platforms, encrypted data transmission, and clear policies regarding data storage and sharing. Providers have a responsibility to educate older adults about basic security practices, such as maintaining privacy during virtual consultations and understanding who may have access to their health information.

Policy framework requirements

Regulatory Standards

Policymakers and professional bodies such as the American Geriatrics Society (AGS) recommend developing comprehensive frameworks tailored to the unique needs of older adults in telehealth. These frameworks should prioritise equitable access to technology, including broadband and assistive devices, while also ensuring adequate digital literacy support through training and caregiver assistance. Incorporating age-friendly design principles, such as readable interfaces and accessible navigation, is essential for usability, particularly for individuals with sensory, physical, or cognitive limitations. Additionally, regulatory clarity and licensing flexibility across jurisdictions are critical to enable consistent and safe care delivery. The AGS position statement further underscores the importance of addressing digital health equity, enhancing digital literacy, accommodating functional limitations, and strengthening caregiver support, while simultaneously resolving reimbursement and regulatory challenges that impact the integration of telehealth into geriatric care [30].

Reimbursement policies

To support equitable access, reimbursement schemes for telehealth in geriatric care must be structured to cover the costs of essential technology, internet access, and technical support services that many elderly users require. These policies should also enable reimbursement for care delivered in non-traditional settings, such as patients' homes, and through diverse remote modalities, thereby expanding the reach of telehealth beyond conventional clinical environments. Evidence indicates that, although Medicare temporarily relaxed restrictions during the COVID-19 pandemic to increase access, reimbursement policies remain constrained by geographic and modality limitations, creating barriers to sustained and equitable telehealth adoption among older adults [31,32].

Clinical quality standards

Healthcare institutions must establish clear guidelines to safeguard clinical quality in telehealth for older adults, including protocols for conducting comprehensive remote assessments, ensuring appropriate followup, and maintaining continuity of care across different delivery modalities. The Collaborative for Telehealth and Ageing (C4TA) highlights the importance of person-centred care, emphasising the need to prepare and engage both older adults and their caregivers while supporting coordination and continuity throughout the care process [33]. Experiences during the COVID-19 pandemic further revealed that although telehealth provided significant benefits in terms of convenience and affordability, substantial challenges remain in evaluating safety, utility, continuity, and scalability, particularly for patients with physical or cognitive limitations [34].

Telehealth in low-resource settings

In LMICs, telehealth has proven particularly valuable during health emergencies such as the COVID-19 pandemic. In Sri Lanka, for instance, telehealth adoption surged, increasing access to care and patient satisfaction, while also revealing critical infrastructure gaps that must be addressed to ensure sustainability [35]. In such settings, mobile-based solutions, community health worker training, and low-bandwidth platforms may offer viable alternatives to more complex digital systems.

Research gaps and future directions

Despite growing evidence on the effectiveness of telehealth in geriatric care, important research gaps remain. There is a lack of standardised intervention protocols specifically designed for older adults, resulting in inconsistent outcomes across studies [36]. Longitudinal research is also needed to assess the impact of telehealth on quality of life, cost-effectiveness, and caregiver burden. Future studies should focus on tailoring telehealth interventions to diverse subpopulations, evaluating implementation models, and developing best-practice guidelines for geriatric nursing.

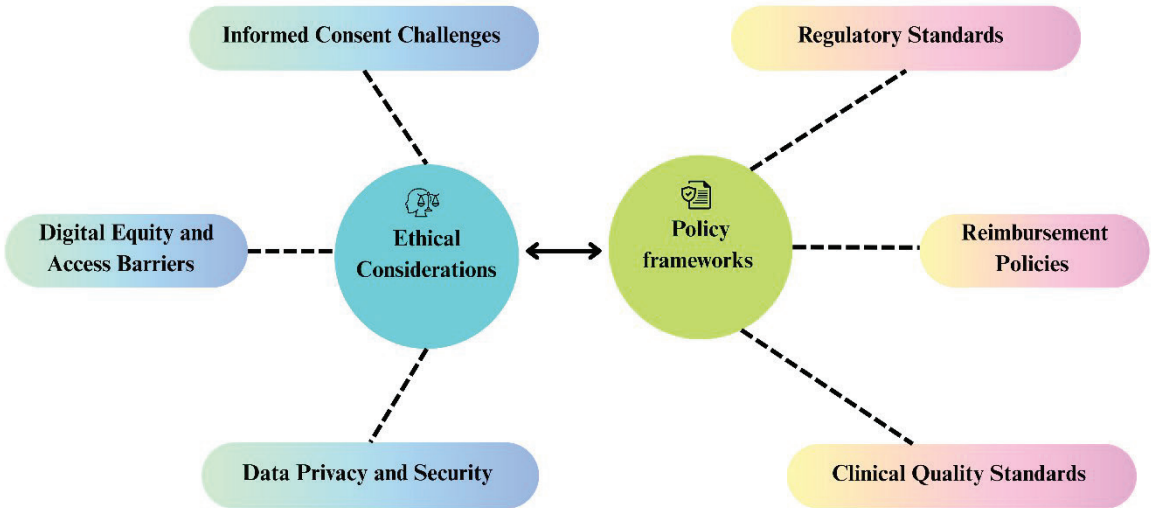

Figure 2. Ethical and Policy Considerations: Telehealth Integration of Geriatric Nursing.

Conclusion

Telehealth holds immense potential to enhance the quality, accessibility, and efficiency of nursing care for older adults. It offers solutions to pressing issues, including limited mobility, chronic disease management, and caregiver strain. However, to realise its full potential, systematic efforts are needed to overcome technological, educational, and infrastructural barriers while addressing ethical and equity concerns. With sustained investment in training, inclusive policies, and nurse-led innovation, telehealth can become a cornerstone of high-quality, age-inclusive care in both high-income and low-resource settings.

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