

Review Article

Telemedicine in geriatrics care during the covid-19 pandemic- A review

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ABSTRACT:

Globally, the COVID-19 pandemic has affected older people disproportionately. Prior to the pandemic, some studies reported that telehealth was an efficient and effective form of health care delivery, particularly for older people. Telehealth offers futuristic promise for the provision of essential health care services for older people worldwide. However, the extent of these services via telehealth appears to be currently limited in low and low-middle income countries. Optimizing telehealth services that can be accessed by older people requires greater government investments and active engagement by broader participation of older people, their caregivers, physicians and other health care providers, technology experts, and health managers. There has been increased use of telehealth and publication of new literature on this topic during the pandemic, so we conducted a scoping review and evidence synthesis for telehealth use in geriatric care to summarize learning from these new data.

Keywords: Coronavirus disease 19, telehealth, telemedicine, older people, gerontology, evidence mapping

Received: 18 September, 2021

Accepted: 24 October, 2021

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This article may be cited as: Patil VS, PP Jawad EMA, James JV, Ahmed JB, PA Rafeeqe, MM Siraj, K Azhar M. Telemedicine in geriatrics care during the covid-19 pandemic- A review. J Adv Med Dent Scie Res 2021;9(11):106-109.

INTRODUCTION

Three years after the invention of the telephone in 1876, physicians first used the telephone to reduce unnecessary office visits. By the early 1900s telephone communication between physicians and patients was becoming not uncommon. In 1924 the cover of Radio News showed a picture of a visionary radio doctor who was connected to his patient by a live picture and audio. Later in the 1920s Dr. Hugo Gernsback created the concept of “teledactyl” where the physician could not only hear and see their patient, but also examine them with robotic arms.¹⁻⁴ At the end of the 1920s radio communication was used to provide medical care in remote areas such as Australia and to ships to care for sick passengers. By the end of the 1940s radiographs were being transmitted by telegraph. In 1964 the first telelink was established in Nebraska to provide psychiatric and neurological services. In 1967, the Massachusetts General Hospital established a telehealth link to provide care to persons at Boston’s Logan Airport.^{1,2} In the 1960s with the advent of space travel, NASA established systems to

collect biometric data and to provide medical care to astronauts. In 1977 the Veterans Administration developed its telehealth outreach system to veterans in the USA who predominantly lived in rural areas. The GRECC Connect was established in 2008 to provide geriatric services to older veterans in rural centers.³ In the last decade telehealth has become established in the USA, particularly in the Veterans Administration.⁴ Much data now suggests that video conference health professional visits are comparable to in person visits.⁵

GERIATRICS

Geriatrics is that specialty of medicine that addresses the health needs of the elderly. Telemedicine is the use of information technology and telecommunications to support healthcare at a distance. Telemedicine is presented as a highly effective and necessary tool in geriatrics. Geriatrics is a subspecialty of internal medicine and primary care that was named in 1909 by Ignatz Leo Nascher. This specialty was recognized by a certificate of special qualifications under the Internal Medicine board

certification by the American Board of Medical Specialties in 1988.⁶⁻¹⁰

ADVANTAGES OF TELEMEDICINE IN GERIATRICS

The major advantage of telemedicine for older persons is that it allows most of their medical visits to be at home rather than in a physician’s office. It also means that when an older person is developing a problem, they can rapidly interact with a health professional. The disadvantage is the problems an older person may have with using the technology, but as many older persons visit their health professional with a family member this can solve the problem. Over the past year the Saint Louis University geriatrics team has successfully done complex geriatric consults, predominantly in persons with moderate dementia, successfully over Zoom. Besides regular visits for persons who are stable with chronic diseases, telehealth is an excellent way to manage geriatric syndromes. We have developed the Rapid Geriatric Assessment (RGA) which is an excellent approach to diagnose and follow frailty, sarcopenia, anorexia of aging and cognitive dysfunction.^{6,7} We have also developed a computer assisted program that can identify and suggest management approaches for the syndromes.⁸ The RGA also asks that older person what matters to them and explores their approach to advance directives. At Saint Louis University, we have developed a computer based annual wellness visit which can be completed annually with the assistance of a caregiver. For persons with sarcopenia exercises can be delivered by the telehealth “geroton”. For persons with dysphoria, we have used the Finnish “Circle of Friends” approach by telehealth.⁹ Cognitive Stimulation Therapy (CST) is an excellent approach

to slow cognitive decline and can be delivered by telehealth.¹⁰ Provided technical glitches can be solved, caregivers and patients are happy with video telehealth.¹¹ It is important to health professionals delivering telehealth that they be aware that there are many unique factors involved to do this successfully and they be able to adapt to them.¹² A home telehealth program can enhance an older person’s quality of life and in addition telehealth can be used to deliver rehabilitation programs in the home. Telemedicine is a reasonable alternative for older persons with cognitive problems in comparison to in person visits.¹³ Telemedicine can decrease emergency department visits in community dwelling seniors.¹⁴ Telemedicine can decrease emergency department visits in community dwelling seniors. Telehealth is a reasonable alternative for care for nursing home residents and can reduce the visits needed by the physician.¹⁵⁻¹⁷ Telehealth care in nursing homes appears to reduce hospital admissions. In 2020, the COVID-19 pandemic resulted in the need to make many adaptations to clinical care for older persons. Of these, the one positive would appear to be the increased awareness of the positive components of telehealth.¹⁸⁻²⁰ In a research done by Doraiswamy S et.al.²⁰ review; the top three specialties discussed in their review were Psychiatry (31.8%), Neurology (22.7%), and Preventive Medicine (13.6%). Discussion on sub-specialties and/or specific disease conditions were found in (30.4%) articles.²⁰ Dementia (37.5%) and frailty (20.8%) were the most common conditions for which telehealth services were used. The medical specialties/subspecialties and specific disease conditions (*in italics*) discussed in the articles are depicted in Figure 1²⁰.

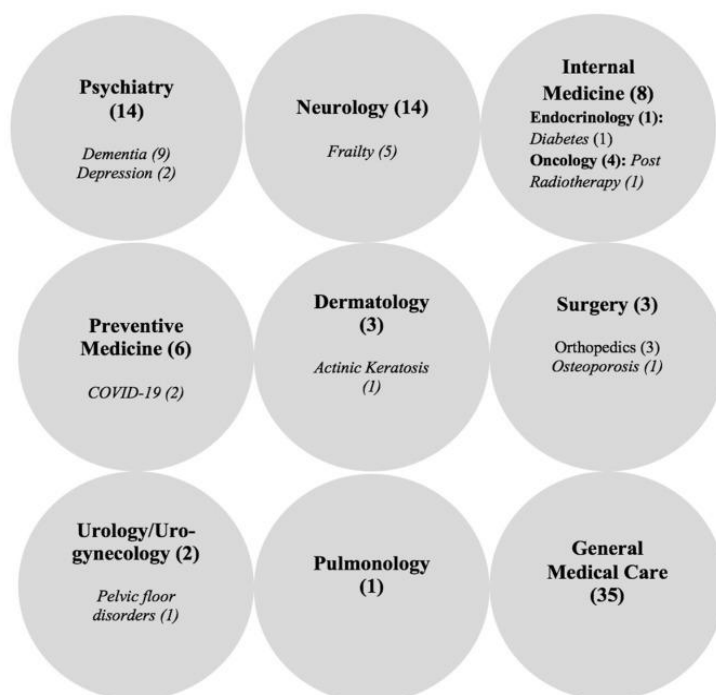


Figure 1: The medical specialties/subspecialties services asked by geriatric patients via telehealth

AVAILABILITY, ACCESSIBILITY, AFFORDABILITY, AND QUALITY OF TELEHEALTH IN GERIATRIC CARE DURING THE COVID-19 PANDEMIC

COVID-19 has demonstrated the value of telehealth in providing geriatric care during the pandemic. Relying on telehealth to provide continuity of geriatric care services and avoid the risk of contagion by reducing the need for visiting health care facilities has been shown to be feasible during the pandemic.¹¹ It is noteworthy that a majority of the articles in this review were written in the context of high-income countries, notably the United States of America (USA), and were published predominantly in geriatrics-related journals published in those countries. This is similar to other studies, which have found that the vast majority of published articles on telehealth were from studies carried out in high-income countries, and a vast majority of them were from the USA.¹² In high-income countries, access to and use of telehealth for older people has improved during the pandemic. This occurred due to the relaxation of legal restrictions for providing health care and the inclusion of telehealth as a reimbursable service by insurance companies in countries such as Australia.¹³ The same cannot be said about low- and low-middle-income countries from which the telehealth literature is sparse. A wide application of telehealth services has been seen during the pandemic in both home and long-term care settings in which older people live. In long-term care settings, telehealth has been used as an adjunct to provide collaborative support for getting advice from multiple specialists concurrently. The articles included in our review provide some evidence of the application of telehealth in providing a whole spectrum of health care services, including preventative, curative, and rehabilitative services but with a greater focus on curative services. Among the curative services provided to older people during the pandemic, our review finds that there is more literature on telehealth application for neuropsychiatry services than other specialty services. This finding reflects the fact that frailty and dementia are the more common conditions managed by telehealth services. There seems to be a limited number of other medical specialties using telehealth to provide services to older people. Worldwide though, the use of telehealth in other specialties such as dermatology, pathology, and radiology has been well documented as part of non-geriatric health care.¹³⁻¹⁷ There is much potential to expand various telehealth services to older people in the future. Only a small proportion of the articles identified in our review were based on empirical research, so there is clearly a need for additional research to generate good quality evidence on telehealth use by older people. Nevertheless, the available evidence provides invaluable information. Prior to COVID-19, telehealth was not widely available to older people, citing a lack of capacity on their part to navigate the technology

needed for its use. However, a majority of the articles in our review report an increasing interest and uptake of telehealth by older people since the onset of the COVID-19 pandemic. When telehealth is provided in an age-friendly manner with active collaboration between older persons and their health care providers, we are likely to see an increased service uptake. This is a significant finding.¹⁹

STRENGTHS, WEAKNESS, OPPORTUNITIES, AND THREATS FOR TELEHEALTH USE IN GERIATRIC CARE DURING THE COVID-19 PANDEMIC

In our SWOT analysis, strengths identified for telehealth use in geriatric care are the convenience and affordability for older people. The weaknesses identified showcase that telehealth as a field must evolve and adapt to meet the needs of older people, specifically those with physical and cognitive limitations. Also, the gap in telehealth knowledge and capacity for use by health care providers must be addressed. The threats focus on inequity and the lack of standardization in the provision of age-friendly telehealth services. The articles included in our review identify opportunities primarily in the technological advancements driven by simplicity and user friendliness. All these identified areas offer broad scope for future exploration.²⁰

IMPLICATIONS FOR PRACTICE AND RESEARCH GAPS

Our scoping review found that optimizing telehealth services for older people requires broader engagement with broader participation by older people, their caregivers, physicians, and other health care providers, as well as technology experts and health managers. Our scoping review found a limited number of articles that can answer all questions. Therefore, there is a clear need for additional research in these areas during the pandemic and beyond. That being said, since all articles are from peer-reviewed journals, the quality can be assumed to be reasonably assured.

CONCLUSION

The COVID-19 pandemic has posed a major challenge to humanity. However, this crisis has allowed us to explore and better understand the use of telehealth for older populations. Telehealth offers futuristic promise for the provision of essential health care services to older people. Currently, the extent of these services via telehealth appears to be limited in low and low-middle income countries. A greater commitment to and resource allocation for telehealth services are needed in these countries to allow older people to avail of and benefit from these services. Social responsibility also rests on middle- and high-income countries with the available technologies for the provision and sharing of telehealth services with socio-economically disadvantaged communities.

Countries already advanced in geriatrics and telehealth services should continue to invest in innovation and robust research to ensure the adoption of age-friendly telehealth services that not only meet the care needs of older people and their caregivers but also allay any concerns that may exist.

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