

Older adults can use technology: why healthcare professionals must overcome ageism in digital health

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Abstract

Older adults rapidly adopted technology for healthcare, known as digital health, during the COVID-19 pandemic. Older adults are increasingly using telehealth, smartphone apps, and other digital health technologies to reduce barriers to care, maintain patient-provider communication, and promote disease self-management. Yet, many healthcare professionals have maintained outdated beliefs rooted in societal ageism that digital health and older adults are incompatible. As a result, older adults have been disproportionately excluded from health services and clinical trials that use digital health relative to their younger counterparts. In this commentary, we urge all healthcare disciplines to challenge ageist beliefs and practices that have contributed to the “digital health divide” among older patients. We provide examples of evidence-based strategies and current scientific initiatives that can promote digital health inclusion in research, clinical practice, and training. By achieving digital health inclusion, we can increase access, provide preventative and comprehensive care, and decrease healthcare costs for older patients.

Lay Summary

The use of technology among older adults (age ≥ 65) increased during the COVID-19 pandemic. Many older adults are using computers, smartphones, wearable devices, and other technologies for healthcare purposes, known as “digital health.” Digital health is valuable for older patients because it eliminates barriers to treatments, such as cost, travel, and access to doctors. Yet, many professionals in healthcare believe that their older patients are unwilling or unable to use digital health. We believe that these harmful beliefs are explained by ageism that is deeply rooted in our society (e.g., “*you can’t teach an old dog new tricks*”). Clinicians do not receive training to teach older patients new technology. In research, technology is developed for younger patients because older adults are excluded from studies. As a result, older adults are getting left behind in our increasingly technical healthcare system. The goal of this article is to raise our colleagues’ awareness to this problem and to support older adults’ use of digital health. We provide solutions for researchers, clinicians, and educators. A growing number of older adults recognize the potential of digital health and time for healthcare professionals to join them.

Keywords Digital health, Technology, Access to care, Interdisciplinary, Public health

RAPID GROWTH OF DIGITAL HEALTH

Consumer technology is ubiquitous in modern society and increasingly embraced by older adults (age ≥ 65). The number of older adults who own a smartphone has risen dramatically from 18% in 2013 to 83% (age 50–64) and 61% (age 65+) in 2021 [1]. An even larger portion of older adults own a laptop or computer (90%) and use the internet [2]. As people live longer, technologies become more affordable, and broadband access increases, we can expect that prevalence of “plugged in” older adults will continue to rise [3]. The use of technology in healthcare, known as digital health, has proliferated in many forms including mobile health, health information technology, wearable devices, telehealth, and personalized medicine [4]. Digital health offers a promising solution to improve medical outcomes and enhance the efficiency of healthcare for all individuals, including older adults [5, 6].

Upward trends of digital health adoption by older adults were further accelerated by the COVID-19 pandemic. The number of older adults (age ≥ 70) who completed telehealth

visits with their provider increased to 21.1% from 4.6% pre-pandemic [7]. Older adults have also engaged with digital coaching platforms that promote disease self-management and lifestyle changes at rates that exceed younger patients [8]. Digital health has provided a safe alternative to in-person visits for vulnerable and home-bound patients, reduced travel burden, and facilitated communication with providers [9–11]. For these reasons, older adults are increasingly viewing digital health as essential to their lives [12, 13]; however, many healthcare professionals remain reluctant [14, 15].

AGEIST BELIEFS AND PRACTICES IN DIGITAL HEALTH

Ageism has deep roots in our society, and it negatively impacts older patients [16]. Common ageist beliefs (e.g., “*you can’t teach an old dog new tricks*”) in healthcare can lead to harmful generalizations that all older adults are unwilling or unable to use technology [17, 18]. In a recent qualitative

interview study, healthcare professionals equated older age with poor technological skills and endorsed a lack of competence of digital health competence [14]. As a result, clinicians may be unprepared to implement digital health into practice, recommend digital health treatments to older patients, and tailor technologies to their specific needs. In research, older adults are excluded from clinical trials due to advanced age, medical comorbidities, and concerns regarding technology use [19]. Institutional barriers, such as the design of patient portals, deter older adults from accessing health information [20]. As a result, older adults are at-risk for becoming under-represented in digital health at all levels of healthcare.

Generalizations that older adults are technologically incompetent disregards the complex biopsychosocial factors that contribute to digital health exclusion. These factors can include visual and hearing impairment, physical disability, speech language difficulties, cognitive impairment, lack of familiarity with technology, and not owning devices [7]. Older adults with lower income, remote or rural residences, and medical complexities face even greater obstacles using and accessing digital health [21]. In a survey of home-bound older adults during COVID-19, Black non-Hispanic and Hispanic/Latino individuals had the lowest rates of digital health [22]. Disparities in access and prior negative experiences with technology, along with the lack of support from healthcare professionals, can make some older adults less likely to adopt digital health and ask for help. Over 10 million older Americans are not ready to use digital health due are a result of these biopsychosocial factors [21]. A new approach is needed to prevent the widening “digital health divide”, a term used to describe the disparity between older (and lower) versus younger (and higher) users of healthcare technology [23, 24].

COMBATING AGEISM IN DIGITAL HEALTH

Colleagues in all healthcare disciplines should challenge ageism and embrace and support older adults’ use of digital health. The modification of ageist beliefs and practices starts with raising our collective awareness. We can re-examine blind spots instilled by society and the medical model of aging, which emphasize loss and dysfunction over wisdom and growth. This may decrease self-blame or defensiveness from singling out individual healthcare professionals for displays of ageism. Greater buy-in from healthcare professionals and training opportunities to build digital health competence could improve the provision of services to older patients. To promote digital inclusion, we must collaborate on improving access to health services and participation in transformational research. Below are concrete strategies for clinicians and researchers intended to promote equitable digital health practices with older patients.

Education and training

Educators play an important role in preparing the healthcare systems to provide quality and equitable digital health for older adults. The widely documented lack of formal education in both geriatrics [25] and digital health among healthcare professionals suggests that enhanced training is needed at all career stages [26]. These knowledge gaps can be filled by the inter-disciplinary field of gerontechnology, which specializes in matching digital health to the diverse needs of older

adults [27]. Gerontechnology curriculum on the appropriate, effective, and ethical use of digital health with older adults can be implemented throughout healthcare systems, such as on-boarding programs, yearly compliance courses, and continuing education on digital health best practices. These topics can form the basis for core digital health competencies [28] for healthcare providers across research, clinical practice and at the organizational level. Research is needed to determine whether these educational interventions can lead to greater acceptance among healthcare professionals and increased use of digital health with older patients.

Clinical practice

Consistent with standards in geriatrics and general medicine, providing quality and equitable digital health services starts with a comprehensive biopsychosocial assessment. Clinicians should assess the multitude of factors that influence digital health readiness, such as preferences, access to technology, sociodemographic, health literacy, and impairments during routine medical visits [29]. Older patients identified as having low digital health readiness could be matched with individualized needs, such as technological support from a medical assistant or providing devices when available. Prior research has identified a variety of evidence-based skills that clinicians can use to teaching older adults new digital health technology. These can include a combination of engaging caregivers, linking to personal relevance, allowing time for experimentation, and avoiding common pitfalls (e.g., speaking too loudly or slowly). We encourage clinicians to follow guidelines for delivering digital health interventions (e.g., National Council on Aging) [30] with older patients and promoting digital inclusion in healthcare settings [31]. Improving the quality of clinician-patient interactions using digital platforms may also lead to further downstream effects, such as reduced staff burnout, increased patient adherence, and greater efficiency of appointments. However, additional research is needed to confirm these healthcare outcomes and determine the most effective strategies for improving the uptake of digital health in routine practice, particularly with underserved older populations.

Inclusion in research studies

Increased representation of older adults is urgently needed across the planning, execution, and translation stages of digital health research. Older adults can participate as key stakeholders through a range of methods such as patient advisory boards and community-engaged studios. Feedback from older adults is valuable for preventing poor design choices, refining digital health interventions, and increasing the likelihood of implementation into healthcare services. Research can increase representation by broadening eligibility criteria and modifying procedures that disproportionately exclude older adults (e.g., multiple comorbidities) [32]. This will generate more data on the potential to leverage digital health for multimodal assessments and treatments of comorbid conditions that become more common with aging. Modifications (e.g., large bold font), consultations (e.g., address privacy concerns), and support (e.g., caregiver involvement) can promote perceived ease of use and increase participation [33]. Study designs can use digital health to reduce the burden of participation (e.g., passive data collection) and compensate for cognitive or functional limitations (e.g., reminder systems).

Including older adults as end-users will help break the cycle of digital health being developed for and by younger people.

DIGITAL HEALTH INITIATIVES

Current initiatives, such as BLINDED FOR REVIEW and BLINDED FOR REVIEW, demonstrate the ability of clinical research studies to address current barriers to using digital health with older patients.

BLINDED FOR REVIEW is a 9-week cognitive behavioral therapy program for insomnia tailored for older adults. The BLINDED FOR REVIEW program incorporates evidence-based modifications targeting older adults, such as changes to the user interface (e.g., increased text size) and instructional design principles in intervention delivery. Over 300 older adults were successfully recruited and enrolled for an internet-based efficacy trial of BLINDED FOR REVIEW [34]. Concurrently, older adults with mild cognitive impairment were recruited from memory and aging clinics for a pilot study to determine the feasibility and preliminary efficacy of the same BLINDED FOR REVIEW intervention [35]. The intervention required a wrist-worn actigraph nighttime for 2 weeks at baseline and post-assessments. In-person recruitment for this population was critical for rigorous diagnostic purposes and determining feasibility for future trials. BLINDED FOR REVIEW and actigraph watches were found to be feasible and acceptable for this population. Study findings suggested study refinements, such as providing technological support via phone, and consistency in study-specific tasks.

BLINDED FOR REVIEW is a live video mind–body and walking program that teaches older adults how to manage chronic pain and early cognitive decline [36]. BLINDED FOR REVIEW integrates several technologies for both clinical and research purposes including live video (to deliver the intervention and assessments), a wrist-worn digital monitoring device (for real-time step count tracking and reinforcement of walking goals), and smartphone apps (to access skill recordings and log weekly homework). Research assistants are trained to assess participants' familiarity with technology (e.g., experience with Zoom, devices owned), identify individual preferences (e.g., text, email, or phone communication), and create individualized plan for support (e.g., specific family members who can help). In qualitative exit interviews, participants reported that encouragement from study coordinators, scheduling learning sessions, and on-call technical support helped overcome initial intimidation with technology. BLINDED FOR REVIEW showed high feasibility, acceptability, and satisfaction when delivered virtually and with remote data collection. A subsequent remote efficacy trial is expected to increase recruitment of a more diverse older population by budgeting for devices and wireless plans.

CALL TO ACTION

Digital health has reached a critical point. Advances in digital health allow for greater personalization, scalability, and sustainability of healthcare services, enabling a precision medicine approach to promoting the health and wellbeing of diverse aging populations. Yet, older adults are at-risk from becoming marginalized from our increasingly digitized healthcare system. We believe that ageism among healthcare

professionals that older adults are unable or unwilling to use digital health, and not solely the ineptitude of older adults, has widened digital health divide. The actionable strategies and initiatives in this article offer a roadmap for overcoming these ageist beliefs and practices in research, clinical practice, and training. By achieving digital health inclusion, we can increase access, provide preventative, and comprehensive care, and decrease healthcare costs for older patients. A growing number of older adults recognize the potential of digital health and it is time for healthcare professionals to join them.

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Compliance with Ethical Standards

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Human Rights: This article does not contain any studies with human participants performed by any of the authors.

Informed Consent: This study does not involve human participants and informed consent was therefore not required.

Welfare of Animals: This article does not contain any studies with animals performed by any of the authors.

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