

COVID-19 and AgeTech

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Abstract

Purpose – This paper aims to provide an overview of the emerging AgeTech sector and highlight key areas for research and development that have emerged under COVID-19, as well as some of the challenges to real-world implementation.

Design/methodology/approach – The paper is a commentary on emerging issues in the AgeTech sector, with particular reference to COVID-19. Information used in this paper is drawn from the Canadian AGE-WELL network.

Findings – The COVID-19 pandemic has particularly impacted older adults. Technology has increasingly been seen as a solution to support older adults during this time. AgeTech refers to the use of existing and emerging advanced technologies, such as digital media, information and communication technologies (ICTs), mobile technologies, wearables and smart home systems, to help keep older adults connected and to deliver health and community services.

Research limitations/implications – Despite the potential of AgeTech, key challenges remain such as structural barriers to larger-scale implementation, the need to focus on quality of service rather than crisis management and addressing the digital divide.

Practical implications – AgeTech helps older adults to stay healthy and active, increases their safety and security, supports independent living and reduces isolation. In particular, technology can support older adults and caregivers in their own homes and communities and meet the desire of most older adults to age in place.

Social implications – AgeTech is helpful in assisting older adults to stay connected. The COVID-19 pandemic has shown the importance of the informal social connections and supports within families, communities and voluntary organizations.

Originality/value – The last months have seen a huge upsurge in COVID-19-related research and development, as funding organizations, research institutions and companies pivot to meet the challenges thrown up by the pandemic. This paper looks at the potential role of technology to support older adults and caregivers.

Keywords Dementia, Technology, Telemedicine, Older adults, Assisted living, Social isolation, COVID-19, Assistive devices, AgeTech, Silver economy

Paper type Viewpoint

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Introduction

The COVID-19 pandemic has had a huge impact on societies and economies worldwide, but has particularly impacted older adults. Physical distancing and restrictions on face-to-face contact were implemented in most countries to limit infection, particularly amongst older adults for whom the risk of severe complications and subsequent mortality was much higher. Technology has increasingly been seen as a potential solution for supporting seniors and caregivers during this time – helping to *connect people at a time of disconnection*. For example, Justin Trudeau, the Prime Minister of Canada, announced in April 2020 the creation of a \$350m fund for community organizations that support vulnerable groups, including seniors, and specifically referred to using technology to replace in-person, face-to-face contact and social gatherings with virtual contact through telephone, texts, teleconferences or the Internet. Even before the pandemic, *AgeTech* had become an important part of research and innovation programs worldwide, such as the “Active and Assisted Living Programme” in Europe (www.aal-europe.eu) and the “Industrial Strategy Challenge Fund (ISCF) Healthy ageing innovation and investment in

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the UK” (www.ageing-better.org.uk/publications/industrial-strategy-challenge-fund-iscf-healthy-ageing-innovation-and-investment-uk) and Canada’s Age-Well Network (www.agewell-nce.ca). In this paper, I will provide a brief overview the emerging AgeTech sector and will highlight some of the key areas for research and development that have emerged under COVID-19, as well as some of the challenges that need to be addressed. These discussions will suggest policy directions for AgeTech, research, and technology based assistive devices for older adults while also addressing the contributing effects of the COVID-19 pandemic.

What is AgeTech?

There is an established tradition of older adults using assistive devices, such as spectacles, walkers and prosthetics. However, the focus of AgeTech is on using existing and emerging advanced technologies, such as digital media, information and communication technologies (ICTs), mobile technologies, wearables, and smart home systems (Sixsmith, In Press). Health-related technologies include eHealth (or telehealth) that allows people to connect with health services and to monitor and manage their health conditions at home. Telecare includes remote monitoring and call systems that enhance the safety and security of frail or disabled people and their ability to remain living at home. In recent years, technologies have been developed specifically for people with dementia, such as home alert systems to warn of wandering, as well as reminder devices, such as automatic pill dispensers (Bossen *et al.*, 2015). Going beyond specific technologies, it is useful to think of AgeTech as a sector within the wider economy. Older adults are a growing consumer market and the baby boom generation has different expectations and aspirations for their lifestyles and care options. While still lagging the general population, older adults have been the biggest growth demographic in Internet usage, especially amongst the younger old (Davidson and Schimmele, 2019). Private sector businesses, not-for-profits and governments are re-imagining consumer goods, housing, employment, financial services, leisure, tourism and travel, and direct-to-consumer health-care products and services, with the *silver economy* valued at US\$7tn per annum (European Commission, 2015). AGE-WELL NCE has identified eight key Challenge Areas for research and innovation in coming years, including mobility and transportation, healthy aging and wellness, social connectedness, financial wellness and employment, as well as more health-related technologies (AGE-WELL NCE, 2019). AgeTech is seen as helping older adults to stay healthy and active, increase their safety and security, support independent living, and reduce isolation. In particular, technology can support older adults and caregivers in their own homes and communities and meet the desire of most older adults to age in place (Sixsmith and Sixsmith, 2008). This may help to create more sustainable health-care systems in the face of increasing demand due to ageing populations, as well as open up business opportunities in an increasingly important market sector.

AgeTech and COVID-19

A number of trends and issues have emerged under the COVID-19 pandemic where AgeTech is being seen as playing an increasingly significant role.

Long-term residential care

The inadequacies of care home systems worldwide have been highlighted by the pandemic: high levels of infection, serious illness and death, painful separation from families who are no longer able to visit, debilitating stress and fear among workers, inadequate resources, poor levels of training and ineffective management. While

technology will never be a panacea for these systemic problems, AgeTech has to be part of a long overdue serious conversation and shake-up of the sector.

Social isolation and mental health

Even before the COVID-19 crisis, about 25% of older adults experienced social isolation ([National Seniors Council, 2016](#)), which in turn can lead to stress, depression and poor health outcomes. The issue of physical distancing, isolation and mental health has now been identified as a priority for health research. Preliminary results from a survey by the Institute of Aging – Canadian Institutes of Health Research – identified this as a key area for research and highlighted the role of technology in connecting with isolated older adults and virtual care delivery models.

Using what we already have

Telehealth and *telecare* are not new, but health-care providers and funders have been painfully slow to be adopt and scale-up these services ([Owens, 2018](#); [Virtual Care Task Force, 2020](#)). Under the pandemic lockdown, we have seen these become more readily available as a convenient and effective way of providing basic health advice and care. Health-care agencies need to be much more proactive in adopting the kinds of technology-based products more broadly as a means of supporting aging in place and improving care even after the pandemic passes.

Communications and social media

We are seeing increasing awareness of the importance of technology amongst older adults themselves. A poll commissioned by AGE-WELL NCE found that some three-quarters of older Canadians thought that technology can help them to live independently, stay active and healthy and reduce social isolation ([AGE-WELL News, 2020](#)). Anecdotally, we are seeing many older adults using communications technology and social media because of the pandemic restrictions, belying the stereotype that they are intrinsically technophobic.

Cognitive health and dementia

The above issues are general to older adults, but we should probably assume that the challenges of the COVID-19 pandemic are doubly significant for people with dementia and their caregivers. People with dementia often find it difficult to deal with disruption in their routines, while the longer-term impact on cognitive health could be significant. The pandemic will also have contributed to the stress and isolation that is often felt by the families of people with dementia either at home or at a distance.

Innovative approaches

The last months have seen a huge upsurge in COVID-19-related research and development, as funding organizations, research institutions and companies pivot to meet the challenges thrown up by the pandemic. The European Connected Health Alliance (<https://echalliance.com/news-and-events/covid-19/>) has created a “pop-up ecosystem” to allow health-care providers, governments and companies to quickly share their expertise. In Canada, many of the efforts have been coordinated within the CanCOVID expert network (<https://cancovid.ca>) where there is a Slack channel to help connect Canadian researchers and innovators who are working in the aging and health sector. While it is not possible to review these in any kind of detail in this paper. This discussion will highlight a couple of initiatives in Canada that focus particularly on the role of the family caregiver and social support networks.

Famli.net, for example, has developed the “Connections” platform that helps prevent loneliness and isolation by keeping older adults in contact with family and friends (www.famlinet.com/). It is an easy-to-learn platform that uses pictures of the user’s contacts and simple icons to access the different types of messaging. While the technology itself is relatively straightforward, a key feature is the delivery model that allows the platform to be easily adapted within a family situation. The primary customer is the caregiver who customizes the system for an older adult who may have very limited technology skills. Another example is *Curatio* (www.curatio.me). It is a company that provides digital health solutions to create personalized peer support networks to improve health behaviors and outcomes. Their *Stronger Together* project aims to extend health care and support to those people who are isolated by COVID-19. It provides personalized peer support, educational programs, daily tracking tools and monitoring within a privacy-compliant social network platform. The social network operates like Facebook platform built specifically for health care. Wearables and remote monitors that detect medical information can be integrated and the network connects them to their hospital’s platform, to peers facing the same situation, and provides feedback on their progress and health. AgeTech solutions are often designed with the individual older adult in mind. However, the COVID-19 pandemic has shown the importance of the informal social connections and supports within families, communities and voluntary organizations, as the providers of formal services have strained to cope with the most ill and most needy.

Discussion

The pandemic has been a crisis of huge proportions around the world and technology has been recognized as one potential solution to managing the various problems that have emerged. Despite the huge potential, it is worthwhile highlighting some challenges:

Crisis, what crisis?

The idea of “healthcare in crisis” has been part of the narrative of old age and aging populations for many years (Wayne, 2019). Part of the *raison d’être* of AgeTech has been that it will help to avoid the health and caring services being overwhelmed by a rising tide of vulnerable, frail, and sick older adults. Hopefully, the pandemic will have sparked a long overdue review and dialogue about the inadequacies in care systems and how we better support older adults to remain living at home. However, we need to be careful that the motivation for adopting AgeTech more widely is about quality of care and support, and not just a matter of crisis management.

Access-for-all

Our societies and economies more than ever have started to rely on technology-based ways of working, caring and connecting socially. Lack of access to devices and the Internet as well as barriers to using technology – the digital divide (Fang *et al.*, 2019) between the technology haves and have-nots – has now become a life and death matter. There have been numerous *ad hoc* initiatives by technology retailers, network providers, and local government and community organizations, to help people to become digitally connected. However, governments worldwide need to recognize that citizenship in addition to social and economic participation in the twenty-first century has to mean digital participation and more needs to be done to ensure this as a right for everyone.

Structural challenges

Despite the substantial investment in research and development in AgeTech, the sector has typically failed to turn great ideas, prototypes and research into real-world products and services. Sixsmith *et al.* (2017) identified a number of barriers to larger scale adoption and implementation. In many ways, the health-care sector can be characterized as innovation averse, while researchers and companies often fall afoul of the so-called “valley of death” (Hudson and Khazragui, 2013). Another key barrier is the weak evidence base (e.g. trials and impact evaluation) to support wider adoption. These structural challenges are not going to disappear overnight and will require ongoing effort by policy makers, service providers, and innovators to develop a mature AgeTech market.

While the longer-term implications of COVID-19 are yet to emerge, we should learn from the difficult experiences of the crisis and let them be the catalyst for meaningful and creative change at the individual, community, institutional and governmental level. AgeTech has enormous potential to not only improve health and the quality of all our lives as we age but also create jobs and generate economic growth as well as to have a “new normal” supported by technology. It is important that we continue to support and nurture it.

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