Ageing in a digital world

The Western Pacific region is home to the world’s largest and fastest-growing ageing population. In 2019, population estimates from WHO indicated more than 245 million residents of the region were aged 65 years and older—a number that is predicted to double by 2050. The concentration of the ageing population is unsurprising given that 28% of the Japanese population is older than 65 years—the highest proportion compared with any other country in the world. Within the region, older people account for 17% of Hong Kong, 16% of Australia, New Zealand, and South Korea, and 13% of the Singapore population—figures that are much greater than the average 9% of the world’s total population. The impact of the ageing population will be immense on society: the rates of non-communicable diseases are expected to soar, health-care systems will be stretched even further to meet the increased demand, and the resulting cost will place a substantial burden on individuals. However, we have an increasingly used technique to help mitigate these challenges: digital health technologies.

Much of the Western Pacific region is already engaged with the digital world, with 69% of East Asia and the Pacific region using the internet. According to 2020 data from the World Bank, countries including Australia, Brunei, Japan, South Korea, and Malaysia have at least 90% of their populations actively using the internet. The connectivity and versatility of digital technology allow it to engage, prevent, and manage health care while allowing individuals to take agency of their wellbeing and provide a sense of independence. Examples of digital health include using websites to disseminate health information, wearable technology such as fitness trackers, the delivery of non-pharmaceutical interventions such as cognitive behavioural therapy and virtual exercise programmes, or even automatic emergency services alerts in accidents.

In the wider population, some recent examples of successful digital health include a self-management smartphone app for people with gout, a web-based intervention with professional support for those with anxiety and alcohol use disorders and using artificial intelligence (AI) in a decision or referral to a radiologist approach for breast cancer screening. A key denominator for these successful studies was sustainability, with the interventions providing lasting beneficial effects and AI reducing the workloads of over-burdened healthcare professionals. These tangible results are an outcome of well developed technologies that have been appropriately designed and evaluated for feasibility, effectiveness, and efficiency. This approach is crucial when creating digital resources for an ageing population and the unique challenges that the older community face.

One main challenge is the common misconception in society that the older population do not use digital technologies. Although there might be some truth to that assumption, the gap in internet usage between older people and the general population is reducing. In China alone, the number of older internet users doubled during the global pandemic; as of December, 2021, 119 million users were at least 60 years of age. Furthermore, recent retirees are more likely to engage with digital technologies after probably using them as part of their working lives. For example, in 2018, 74.5% of 65–74-year-old Australians accessed the internet compared with just 26.7% of those aged 85 years and older. Over time, we can expect that more and more, this age group will be saturated with those willing to use digital technology. However, attention must also be given to the unique needs and abilities that might accompany ageing, such as poor eyesight or reduced dexterity, by using larger text and interactive features to encourage technology use.

Another challenge is the digital fluency of the population and the susceptibility to misinformation. The wave of false information during the COVID-19 pandemic highlighted the role of misinformation in undermining health advice. Early in the vaccination efforts, misinformation fuelled vaccine hesitancy in Australia before the country faced its biggest outbreak. Studies have shown that older people are more vulnerable to false information, especially when they have no previous knowledge about the topic. Ensuring exposure to evidence-based information and helping people identify credible data are crucial considerations for development.

Despite the challenges, the digital health field is filled with opportunities. Wearable fitness trackers can help prevent, manage, and treat many non-communicable diseases. Pedometers have successfully promoted increased levels of regular physical activity among older adults. AI-derived personal activity metrics integrated into wearable devices have also successfully helped participants lose weight and subsequently avoid cardiovascular diseases. Other mechanisms of digital health, such as web-based education, e-monitoring, and tele-health coaching, are also beneficial. Older adults achieved increased daily physical activity and improved metabolic health when exposed to a web-based

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education and coaching resource. Digital health tools also have incredible potential for promoting increased independence and health agency for older adults through self-management. A device for automatic self-detection of acute coronary artery occlusion has been shown to empower patients while reducing delays to treatment and increasing survival. In patients with cancer, a web-based self-management programme enabled more hopeful and inspiring approaches to their mental health for surviving cancer.

Beyond direct benefits to the population, digital technology has an essential role in clinical health-care delivery. Detection systems for falls, which older adults are at an increased risk of, have been used to contact emergency services from the households of older people. AI in clinical decision making to improve diagnosis timelines and treatment of neurocognitive decline can also help preserve the autonomy of affected older adults.

The potential of digital health technologies to combat the challenges of an ageing population is immense. In the Western Pacific region, where more than a quarter of the world’s population lives and with a geographical area that spans from Mongolia to New Zealand, digital health could be a great equaliser. Digital health technologies could provide those who face geographical, physical, and financial barriers with the quality health care they are entitled to receive. However, successful integration of these technologies will require careful planning and forethought for each instrument. We must ensure that the tools are feasible and that the changes in resource allocation benefit the health-care system. The COVID-19 pandemic has increased societal dependence on digital health while exposing the cracks of our overburdened health-care systems. We are faced with an opportunity to capitalise on the looming health-care system reforms to build the infrastructure to support digital health and prepare for the demands of the ageing population. The opportunity to improve health equity for the geographically and socioeconomically disadvantaged is now.

The Lancet Regional Health — Western Pacific