Technology access is a human right!
Illuminating intersectional, digital determinants of health to enable agency in a digitized era

Mei Lan Fang¹,², Karen L.Y. Wong³, Leslie Remund⁴, Judith Sixsmith⁵, Andrew Sixsmith²
¹School of Health Sciences, University of Dundee
²Science and Technology for Aging Research (STAR) Institute, Simon Fraser University
³Providence Health Care
⁴411 Seniors Centre Society

Digital technology can help to increase the health, autonomy, and well-being of older adults by enhancing information access and social connectedness. However, digital exclusion can increase social and economic disparities and should be seen as a determinant of health outcomes. A community-based participatory action research (CBPAR) project was conducted to identify and explore opportunities for community-based supports and services to enable digital inclusion and improve the health and wellbeing of older adults. The CBPAR study of information and referral services for older adults service was undertaken in British Columbia (BC), Canada between April - August 2020 in partnership with 411 Seniors Centre Society. Semi-structured individual and group interviews were conducted with 28 participants involving paid staff (89%), volunteers (7%) and policy makers (4%) who worked in the area of older adult community services. To support the interpretation and analysis of the interviews and participant observations, detailed field notes were produced and thematically analyzed as part of the overall dataset. Reflexive thematic analysis revealed that the key barriers to technology access are structural in nature and are associated with both ageism and poverty. The analysis revealed how digital service challenges facing older people were best understood according to issues of human rights; intersectionality; and availability and accessibility of assets. To illuminate the digital determinants of health as supported by the need for intersectional service provision, more research is required for examining the unique social categories that individuals hold and how these shape diverse social service needs in the realm of technology access.

Keywords: technology access, human right, older adults, digital determinants of health, digital inclusion

The technology landscape is changing globally at a rapid pace. The COVID-19 pandemic has also been a disruptive force in terms of the way individuals access services and communicate with each another (Crawford & Serhal, 2020). Restrictions on travel and face to face interaction have seen digital communications become an everyday necessity. While digital technology has the potential to increase the health, autonomy, and well-being of older adults through enhancing information access and social connectedness (Sixsmith & Gutman, 2013; Haight, Quan-Hasse & Corbett, 2014), significant challenges and barriers remain such as digital literacy, adoption, and access (Chang, McAllister, & McCaslin, 2015; Wu, Damnée, Kerhervé, & Ware, 2015). Consequently, exclusion from the benefits of technology can increase social and economic disparities and should be seen as a determinant of health outcomes (Fang, Canham, Battersby et al., 2019). Literally, digital exclusion has only now been brought to the forefront propelled by the pandemic as a life and death issue. Yet, this concern goes as far back as 2011 when the United Nations in 2011 emphasized in a report that the Internet not only enables individuals to exercise their freedom of opinion and expression but is also indicative of a range of human rights. In this paper, we use a human rights lens to identify and explore opportunities for developing supports and services to enable digital inclusion and protect human rights.

This article was published [to be completed by publisher].
© (ORCID 0000-0003-1990-7537)
The authors acknowledge the following people and organizations: 55+ Programs, Britannia Community Services Centre; Daisy Au, MOSAIC; Pam Borghardt, STAR Institute; Lysandra Cha, Frog Hollow Neighbourhood House; Edwin Chau, Seniors Come Share Society; Patsy Craig, 411 Seniors Centre Society; Morgan Donahue, North Shore Community Resources; Brenda Fowler, People for a Healthy Community on Gabriola; Camille J. Hannah, United Way of the Lower Mainland; Emem-Obong Lucia Iyang, South Vancouver Neighbourhood House; Louise Leclair, MA Communications SFU, 411 Seniors Centre Society; Susan Moore, Brightside Community Homes Foundation; Sarah Moreheart, MPH, Student, PhD in Public Health at Simon Fraser University; Julija Krliu Nanevska, Vancouver Coastal Health; Susan Pare, West End Seniors’ Network; Marta Rogic, Seniors First BC; Kelly Talayco, 411 Seniors Centre Society; Sharon Tong, Alzheimer Society of British Columbia & Juliet Neum-Hornick, STAR Institute
This research was supported in part by 411 Seniors Centre Society. The authors have no conflict of interest to disclose.

Correspondence concerning this article should be addressed to Dr Mei Lan Fang, School of Health Sciences, University of Dundee, Dundee, Scotland, DD1 4HJ, United Kingdom.
Email: m.l.fang@dundee.ac.uk
services to enable digital inclusion and improved health outcomes for older adults.

**Method**

**Design.** This paper draws on a community-based participatory action research study of information and referral services for older adults service undertaken in British Columbia (BC), Canada between April - August 2020. In partnership with 411 Seniors Centre Society – a community organization in Vancouver, BC that provides senior-led programs and services to mobilize the diverse strengths, talents, interests and expertise of older people – a multimethod inductive approach, guided by principles of ethnography was implemented to conduct this participatory study. Interviews, participant observation, and reflexive journaling methods enabled methods triangulation which generated a combined dataset that was thematically analysed using Braun and Clarke’s (2019) reflexive thematic analysis.

**Participants.** Participants included paid staff (89%), volunteers (7%) and policy makers (4%) who work in the area of older adult community services. Participants were from across BC, and the majority based in Vancouver, followed by Surrey, Nanaimo, North Vancouver, and Kelowna and lastly Burnaby and Kamloops.

**Data Collection.** Semi-structured individual and group interviews were conducted with 28 participants, lasting between 0.5 – 2 hours. During interviews, participants were asked to share their experience and thoughts on working with older adults before and since the start of the COVID-19 pandemic, with specific focus on information and referral services, older adults and technology use, older adults living in complex situations, harder-to-reach older adults, older adults from diverse cultural backgrounds, and opportunities to collaborate with community organizations from other sectors. 

Participant observations were conducted virtually as part of a conference, meetings and service provision sessions that focused on older adult community service provision. Particular attention was paid to the opinions of stakeholders and service users who had expressed challenges of providing services to older adults using technology.

**Data Analysis.** To support the interpretation and analysis of the interviews and participant observations, detailed field notes were produced and were thematically analyzed as part of the overall dataset. Reflexive thematic analysis was conducted at two-levels. At the individual level, the second author identified initial concepts by: (1) becoming familiar with the data, (2) generating initial codes and (3) searching for themes. At the meta-level the authors engaged in group discussions to (4) review the themes (5) agree on and define the themes which subsequently shaped the (6) thematic write-up.

**Results**

Digital infrastructures, systems, and devices have been arguably designed by and for persons in more advantageous social positions, which has inadvertently created inequitable access to publicly funded supports and services hosted on digital platforms (Fang et al., 2019). In response to inevitable technology-driven challenges, a social justice framework for bridging the digital divide developed by Fang and colleagues (2019) revealed how digital service challenges facing older people were best understood according to issues of human-rights; intersectionality; and availability and accessibility of assets.

Access to technology is a human right and has without a doubt become a requirement for human survival. When there is a need, there is a right (Ife, 2012). In the context of older adults, findings indicate that the key barriers to technology access are structural in nature and are associated with both ageism and poverty. Ageism in this paper refers to a broad societal belief that older adults are apathetic to technology (Hulko, Brotman, Stern et al., 2020). Our analysis reveal that ageism is a key determinant of the limited range of technological products in the market targeted at older adults. It also explains why there are few technology literacy programs suitable for older adults. Meanwhile, poverty in this paper refers to a lack of resources and by definition (World Health Organization & United Nations, 2008), whereby findings indicate that some older adults are perpetually experiencing poverty due to their inability to access digital platforms which host public resources; while others are also hampered by the inability to afford important and often necessary information and communication technologies (ICTs).

Multi-level digital access challenges emerged from the analysis and can be understood in two ways. The first concerns the fragmented interactions between different sectors – though the majority have a shared goal for improving older adults’ access to technology. Collaboration between different sectors can improve this outcome. However, sectors – each with unique mandates – are often challenged by infrequent and non-transparent communication and lack of integrated servicing which results in their initiatives and efforts being misaligned. One example pertains to the academic and the community service sector. Although both are interested in improving older adults’ access to technology, academia is often more concerned with developing technology innovation while the community sector is more focused on older adults’ access and use needs. Without sufficient communication between the two sectors, the impact of technology development, use and uptake is limited.

The second explanation is situated at the individual level and involves the intersection of social identities which shape access to digital learning opportunities and resources. A person has multiple intersecting identities, and apart from the identity of age, other identities which intersect to shape health and wellbeing outcomes constitute gender, ethnicity, ability and income for example (Hankivsky, 2011).

An analysis of intersectional identities helped to explain why older adults experience diverse challenges and opportunities to digital access. Intersectionality and access challenges involved the interactions between age, ethnicity, ability and income. At the intersection of age, ethnicity and ability, service providers in the study highlighted that older migrants with limited English language ability were less able to access online information and services that were available only in English.
Shaped by age and income, older adults with minimal income experienced similar digital access challenges hampered by their limited financial ability to purchase ICTs. It is important to note that although access to technology applications and services are becoming increasingly free and publicly available, older adults with limited income still experience significant financial access challenges i.e., as it pertains to equipment and Internet subscription (Fang, Siden, Korol et al., 2018).

Consequently, according to study participants, older adults and community organizations have begun to form their own alliances to raise awareness of the immense difficulties that a digitized public infrastructure can bring.

**Discussion**

The analysis revealed how digital service challenges facing older people were best understood according to issues of human-rights; intersectionality; and availability and accessibility of assets. Each of these perspectives shaped the juncture of how information and referral services and stakeholders can interact and possibly disadvantage older adults living in BC. Based on the results, several directions for policy and practice are outlined, aimed at addressing some of the digital inequities that are likely to impact on health, and well-being. Particular attention needs to be given to facilitating digital access for people who are socially marginalized and economically disadvantaged.

**Cultural Sensitivity**

Information and referral services need to be appropriate for diverse cultures and languages (Anderson, Scrimshaw, Fullilove et al., 2003). Community organizations should offer a range of culturally-sensitive and linguistically-specific technological programs. For example, there are technology literacy and tech help programs provided in some community organizations that offered in an array of languages. Reportedly, some older adults from certain cultural and linguistic groups have an abundance of experience, knowledge, and preferences using culturally-specific communication applications. Community organizations can use these applications to spread information, provide online servicing, and launch community programs, tailoring to the diverse needs of older adults.

**Reaching the “Hard-to-reach”**

Digital exclusion is symptomatic of a broader social exclusion and social isolation (Hulko et al., 2020). Community organizations, in general, however understand that older adults have different levels of digital literacy and confidence when using the technology which are shaped by varied physical, mental, and cognitive abilities. Therefore, they provide programs and servicing are offered in various ways, such as in-person, by phone, and using video calls and communicate information in a range of formats such as through emailing, social media, and newspapers. According to participants, some organizations offer digital training to older adult volunteers, enabling them to reach other older adults who are more isolated in their community.

**Resourcing**

There are increasing resources and initiatives for digitally-based health initiatives, particularly for economically marginalized people (Crawford & Serhal, 2020). For example, study participants indicated local initiatives that involved the collection and redistribution of digital products specifically offered to older adults to enhance their access to ICTs. Volunteers have also provided free tech help programs for older adults. Community organizations are also frequently advocating for ICT education and equipment for low-income older adults.

**Age-friendly Design**

Information and links to resources in key necessity areas, such as health and social care need to be made easy to identify, understand and access (Fang et al., 2019). Complex information systems requiring technological know-how need to be made intuitively easy to navigate, especially for older generations where ICTs were not a part of standard education and everyday work practice.

**Community-based initiatives**

Not-for-profits and volunteer-based organizations are essential assets within the welfare economy and can play a crucial role in connecting with their local communities (Casey, 2016). They are also initiatives for digital inclusion. Some community organizations have built trusting relationships with older adults. Older adults trust these organizations and consider them as places to go to when they encounter challenges. These organizations can be an avenue for introducing ICTs to older adults and support older adults to cope with technology challenges such as providing tech help programs.

**Multi-Level Implications for Change**

Our findings suggest that to initiate real world change, we need to intervene at multiple levels. Enabling equitable access to technology for the diversity of older adults can be made possible through a collective effort towards ameliorating ageism, addressing systemic barriers to accessing vital resources and facilitating collaborative working through cross-sectoral partnerships grounded on co-construction of ideas and pooling resources.

**Micro / Individual-level**. Diverting blame from the older person towards reconceptualising the digital divide as a broader structural and systemic problem requires a person-centred and social justice approach. There is a tendency for some older adults, particularly those in more marginalized social positions to harbour self-blame and internalize stigma shaped by ageism and ageist stereotypes (Gendron, Welleford, Inker et al., 2016). Findings indicate a need for service providers to help older adults experiencing difficulties accessing ICTs to avoid perpetuating self-blame and understand that barriers to access is not as one participant described as a “personal misfortune” but rather it is a wider societal issue.

**Meso / Community-level**. In linking micro / individual-level implications for change, at the meso / community level, to reduce technology access barriers and optimize user experience for the
diversity of older adults, service organizations must work together and pool ideas and resources. A key challenge is the unintended siloed working practices of service sectors (Grigorovich, Fang, Sixsmith et al., 2019), which can, in turn create fragmentation of social services and exacerbate difficulties to accessing vital resources by service users. Our findings suggest that integrated working across services sectors (e.g. senior services and immigrant settlement service agencies) can help to address unique intersectional challenges of older adult individuals. For example, integration of settlement services and senior services to enhance technology training alongside technology support for older adults who are from a cultural minority community may alleviate structural barriers associated with intersecting identities of age, ethnicity and ability.

Macro / Societal-level. To enable macro / societal level change requires a dedicated effort towards ‘conscientization of the public’ – raising consciousness of the critical mass to view technology access as a human rights issue (Freire, 1970; United Nations, 2011). In linking meso / community-level implications to shape the macro / societal level change, communities must work together as an ecosystem and advocate for digital infrastructure in rural and remote places, low-cost or no-cost Internet access for those most in need of social supports, innovative intergenerational solutions for technology training, learning and support – all of which backed by policies and legislation from governing bodies across global nations.

Concluding Remarks

In conclusion, to illuminate the digital determinants of health as supported by the need for intersectional service provision, more research is required for examining the unique social categories that individuals hold and how these shape diverse social service needs in the realm of technology access. Our study was limited by the specific focus on the Canadian context particularly as our investigation was situated within the policies and practices of the province of BC. Therefore, the findings may not be applicable in various other global contexts that are not comparable in health and social care systems and digital infrastructure. We therefore recommend future research to be undertaken across different geographic locations with unique socio-cultural contexts that shape the technological landscape. We also recommend that aging and technology access investigations be conducted by applying a social justice perspective and through a human rights lens focusing on: information and referral services; intersectional technology use and access behaviours and patterns; culturally-aware and supportive technology supports and services; poverty and resource limitations that impinge on technology access; complex technology system navigation; and inequities experienced by volunteers to address unmet technology support and service gaps.

Last, to enable relevance and application in diverse socio-cultural and geographic settings, a discussion on how concepts of intersectionality and human rights to reframe issues of digital access and digital proficiency on a global scale is urgently needed.  

References


