



University of Southern Denmark

'Like an unbridled horse that runs away with you'

a study of older and disabled people during the COVID-19 pandemic and their use of digital technologies

Clayton, David; Vries, Kay de; Clifton, Andrew; Cousins, Emily; Norton, Wendy; Seims, Melissa

Published in:
Disability & Society

DOI:
10.1080/09687599.2023.2217470

Publication date:
2024

Document version:
Final published version

Document license:
CC BY-NC-ND

Citation for pulished version (APA):

Clayton, D., Vries, K. D., Clifton, A., Cousins, E., Norton, W., & Seims, M. (2024). 'Like an unbridled horse that runs away with you': a study of older and disabled people during the COVID-19 pandemic and their use of digital technologies. *Disability & Society*, 39(10), 2565-2587. <https://doi.org/10.1080/09687599.2023.2217470>

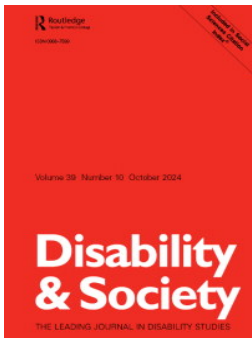
Go to publication entry in University of Southern Denmark's Research Portal

Terms of use

This work is brought to you by the University of Southern Denmark.
Unless otherwise specified it has been shared according to the terms for self-archiving.
If no other license is stated, these terms apply:

- You may download this work for personal use only.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying this open access version

If you believe that this document breaches copyright please contact us providing details and we will investigate your claim.
Please direct all enquiries to puresupport@bib.sdu.dk



'Like an unbridled horse that runs away with you': a study of older and disabled people during the COVID-19 pandemic and their use of digital technologies

David Clayton, Kay de Vries, Andrew Clifton, Emily Cousins, Wendy Norton & Melissa Seims

To cite this article: David Clayton, Kay de Vries, Andrew Clifton, Emily Cousins, Wendy Norton & Melissa Seims (2024) 'Like an unbridled horse that runs away with you': a study of older and disabled people during the COVID-19 pandemic and their use of digital technologies, *Disability & Society*, 39:10, 2565-2587, DOI: [10.1080/09687599.2023.2217470](https://doi.org/10.1080/09687599.2023.2217470)

To link to this article: <https://doi.org/10.1080/09687599.2023.2217470>



© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 31 May 2023.



Submit your article to this journal [↗](#)



Article views: 817



View related articles [↗](#)




View Crossmark data [↗](#)



Citing articles: 1 View citing articles [↗](#)

'Like an unbridled horse that runs away with you': a study of older and disabled people during the COVID-19 pandemic and their use of digital technologies

David Clayton^{a#} , Kay de Vries^a, Andrew Clifton^b, Emily Cousins^a,
Wendy Norton^a and Melissa Seims^c

^aSchool of Nursing and Midwifery, De Montfort University, Leicester, UK; ^bSchool of Health and Sports Science, University of Suffolk, Suffolk, UK; ^cIndependent Assistive Technology Consultant, Loughborough, UK

ABSTRACT

This study explored the uses of digital technologies by older and disabled people who were social distancing and shielding during the early Covid-19 pandemic lockdowns. The study considers the benefits, difficulties, and technical support needs of these groups of people during this time. Using a case study methodology, in-depth interviews were undertaken with 11 older and disabled people recruited from a local digital support service, and their support workers. Five main themes were identified by the research team. These were: technology was a mixed blessing and caused frustration; technology use increased during lockdown; technology supported resilience and contributed to identity through 'stimulation, knowledge and friendship'; technology needs to be accessible, and support was required to facilitate technology use. Understanding these experiences will enable policymakers, commissioners, and providers to develop better and more responsive digital support for older and disabled people in the future.

ARTICLE HISTORY

Received 3 April 2022
Accepted 16 May 2023

KEYWORDS

Older people; disabled people; digital technologies; support services; COVID-19 pandemic

POINTS OF INTEREST

- This study explored the experiences of using digital technology by older and disabled people who were social distancing and shielding during the first period of lockdown over the Covid 19 Pandemic.
- The pandemic saw a greater need for support to use digital technologies as face-to-face social activities were limited.
- The biggest change in the use of digital technology and support requested from older and disabled people over the lockdown was the growth of video calling.

CONTACT David Clayton  david.clayton2@dmu.ac.uk

[#]Present Address: Department of Health Sciences, University of Leicester, Leicester UK.

© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group
This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

- Digital technologies were also used for entertainment like watching online videos, playing computer games, and listening to audiobooks and music.
- The study found older and disabled people used digital technologies to help them, but the increased use could be challenging and stressful.
- Both initial and ongoing digital support must be available to older and disabled people, and digital technology support workers need knowledge and experience of digital technology and disability to offer good support.

Introduction

The COVID-19 pandemic was an ongoing global pandemic of coronavirus disease. The virus was first identified in December 2019 following an outbreak in Wuhan, China. The World Health Organization (WHO) declared the outbreak a pandemic on 11th March 2020; it became one of the deadliest in history. Following WHO advice, on 20th March 2020 (WHO 2020), the UK Government ordered all social venues to be closed across the whole of the United Kingdom. In a television address on 23rd March 2020, Prime Minister Boris Johnson told Britons that they could only go outside to buy food, exercise once a day or go to work if they were unable to work from home.

Those who caught the virus were required to self-isolate and shielding was introduced for people considered to be most at risk of serious illness from the virus. Restrictions and lockdowns continued to be imposed over 2020 and 2021. It wasn't until August 2021 that most restrictions ended, and society was 'unlocked' following a vaccination programme, and in April 2022, separate guidance on shielding was removed for those considered clinically extremely vulnerable.

This period meant social distancing from others in society, effectively not leaving homes or having any face-to-face social contact with other people outside of their households. Many able-bodied people gained an insight into what it could mean to be socially isolated, lonely, or both, because of these lockdowns (O'Sullivan et al. 2021). For older and disabled people, the combination of being at higher risk of hospitalisation, death and bereavement, and the need to physically isolate put added constraints on their social movements. This consequential loss of face-to-face social contact with family and friends saw the further potential for loneliness and mental health issues to occur; as such, people with disabilities were disproportionately affected by the COVID-19 pandemic (Smith et al. 2021).

The necessity to shield, as a condition of the lockdowns, intensified the focus on utilising digital technologies to connect with older and disabled people. During this time, support agencies continued to work by utilising digital technologies to connect with older and disabled people. One such support agency was the setting for this research. The objective of the study was to gain insight into how digital technology and related support, helped support older and disabled people during this period of crisis.

Background

Pre Covid-19, there was a variety and diversity of organised responses to supporting mental well-being and tackling social isolation and loneliness, such as befriending or social groups. The potential for utilising or incorporating new technologies for social connectivity needs pre-Covid-19 had largely been ignored by the social care sector (Damant and Knapp 2015). Few studies focused on how social inclusion for disabled people could be facilitated using digital technologies (Manzoor and Vimarlund 2018). The pandemic provided an opportunity to consider these issues. For example, some research found older people became more reliant on technology during the pandemic (Centre for Ageing Better 2021). However, issues of digital exclusion, such as not having suitable equipment or connection to the internet, lack of skills, confidence and support were still an issue (All-Party Parliamentary on Social Integration (APPG) 2020). In this respect, it has been argued that the increase in the use of digital technology had been from those already using it rather than those who did not (Age UK 2021a).

Before the pandemic, research into disability and digital technology had focused on digital inequalities and exclusion (Seale 2019; Parsons et al. 2020; Egard and Hansson 2021) and how it could be made more inclusive, for example in situations of work (Grijseels, Zuiderent-Jerak, and Regeer 2021; Gauci 2021) or creativity (Creed 2018). Many of the digital barriers faced by older and disabled people did not go away with the pandemic. It was already recognised, pre-pandemic, that digital exclusion increased with age, as older people find it hard to keep up with the changes in technology (Age UK 2021a), use significantly fewer digital applications and spend less time online than younger adults (Knowles and Hanson 2018), and are slower to adopt new technologies than younger adults (Czaja et al. 2006).

Although age was one risk factor for being digitally excluded, other factors include having a low income, being a woman and being disabled (Office for National Statistics (ONS) 2022). Often, a lack of skills and lack of support, rather than costs, stopped people from using digital technologies. For example, some older people who felt that they lacked digital skills, stop using the internet (Centre for Ageing Better 2021). Individuals with impairments in domains such as memory, attention and organisational skills were likely to face significant challenges in learning how to use this technology as they struggled to retain new information and/or initiate new behaviours (Desmond et al. 2018). Research suggested that, for those with visual impairments, the use of assistive devices like screen readers, and braille display were being replaced by using mainstream devices such as smartphones, iPads and tablets which incorporate built-in assistive features like voice assistants (Sayago, Neves, and Cowan 2019). However, those with less than five years of experience with visual loss and multiple conditions were less likely to use accessibility apps, and those that did use them, struggled with technical issues and glitches in the apps (Locke et al. 2022).

There were also significant factors holding back technology use among older adults including; personally held values about the appeal of technology, wider concerns regarding its impact on society, and fears of getting things wrong when using the software (Centre for Ageing Better 2021). Many lacked confidence in their knowledge of how to use online tools properly, such as security concerns about online banking (Knowles and Hanson 2018). A person's mood state could also affect their engagement in digital technology use and alter perceptions of self, energy, and receptivity to new and alternative ways of doing things (Desmond et al. 2018). Even with access, people had frustrations about the unreliability of technology (Think Local Act Personal (TLAP) 2020) and this frustration with new technology could lead older adults to be unsure of their ability to use it, leaving them unmotivated to even try (Wang et al. 2019).

Some research had found that people do not know where to get digital support and so often rely on informal support (Centre for Ageing Better 2021). In this respect, social isolation and digital exclusion often go hand in hand (Clayton 2018). Digital inclusion, therefore, became a priority during the pandemic and using it to tackle loneliness brought the issue into 'sharp focus' (All-Party Parliamentary Group on Loneliness (APPG) 2021). Social isolation and loneliness were believed to affect approximately one-third to one-half of older people before the pandemic and were considered to be a significant public health concern for policymakers (Landeiro et al. 2017). The pandemic created new issues for groups at risk of loneliness. One study found that 41% of adults felt lonelier than at the start of the lockdowns and that people with long-term conditions were more at risk or may have already been experiencing loneliness before COVID-19 (British Red Cross 2020). Those most likely to experience chronic loneliness (feeling lonely often or always) included older and disabled people (Campaign to End Loneliness (CTEL) 2021).

Being chronically lonely means a greater risk of many physical and mental health conditions. For example, older people are twice as likely to develop frailty or dementia (House of Lords 2021), and loneliness is associated with depression and anxiety, fatigue, headaches, stroke, and heart disease (Andersson 1998; Holwerda et al. 2014; Steptoe et al. 2013; Valtorta et al. 2016). Loneliness has been shown to increase the risk of mortality (Brittain et al. 2017; Perissinotto, Cenzer, and Covinsky 2012) and some estimates suggest the impact on mortality is comparable to smoking and alcohol consumption (Holt-Lunstad, Smith, and Layton 2010). There are suggested five causal pathways through which chronic loneliness adversely affects health (Cacioppo and Patrick 2008):

1. Increasing self-destructive habits (such as overeating, greater alcohol consumption, and smoking)
2. Increasing exposure to stress
3. Withdrawal and not seeking emotional support

4. Adverse effects on the immune and cardiovascular systems
5. Difficulty sleeping which has negative effects on metabolic, neural, and hormonal regulations

Being connected to others through social relationships, both with family and friends is an important protector against loneliness and for improving health and quality of life (Rafnsson, Shankar, and Steptoe 2015). Developments that increase or decrease connectivity, like the use of digital technology, may therefore be beneficial and offer the potential for loneliness experiences to change. Geraedts et al. (2014) found that using technology has the potential to provide timely interventions to assist older adults in keeping healthy and independent for longer. Adoption of technology can also improve quality of life and facilitate independent living for longer, providing a positive impact on both body image and self-concept, and influencing how disabled people viewed themselves and experience disability (Orpwood et al. 2010). Before the pandemic, however, research on the extent to which digital technologies had helped with loneliness remained mixed (Damant and Knapp 2015). Masi et al. (2011) found loneliness reduction interventions had yet to harness the power of technology and Chen and Schulz (2016), in their systematic review, found that the results from loneliness interventions using information communication technologies were inconclusive.

Research process

The objective of the study was to gain insight into how digital technology and related support, helped support older and disabled people during the pandemic. We wanted to understand people's personal stories and circumstances about using digital technologies within this real-life context including experiences of social isolation and loneliness. Participants were recruited from a local digital support service. Ethical approval was gained from De Montfort University, Faculty of Health and Life Sciences Research Ethics Committee. The study only included people who were able to decide to participate in the study and give informed consent.

The digital support service was delivered by a national charity that supports older people and disabled people to enjoy active and independent lives. The support agency was known to one of the university researchers from a previous project. The agency offered several services such as befriending and social groups and had recently applied and been awarded funding from the National Lottery to run a computing support service aimed at older and disabled people. The service had previously been delivered by a local council but had been decommissioned. The university research team had previously worked on projects focusing on loneliness and social isolation and technology and saw an opportunity to work with the agency on a small study with this focus during the lockdown.

The service supported older and disabled people who had limited ability to communicate and access information online and who required one-to-one computer training to build confidence to do this. During the pandemic, this service was well placed to provide digital support for older and disabled people due to its long and rich history of working in this area. The participants included clients who currently used this digital support service and their support workers. Those recruited for the study included older and disabled people who were receiving long-term support from the service whilst shielding from COVID-19.

Methodology

Case study methodology was used to undertake this project. This qualitative research approach is considered particularly valuable when exploring contemporary phenomenon (the case) within its real-life context (Baxter and Jack 2008; Stake 2013; Yin 2014). A purposive sampling approach was used in the recruitment of participants, that is, research participants were selected because they had knowledge and experience of the phenomenon under study (Palinkas et al. 2015). Case study allows for multiple sources of data to be used, as well as multiple methods of data collection (Fusch, Fusch, and Ness 2018; Baxter and Jack 2008; Stake 2013; Yin 2014). To this end, we recruited 11 participants (Table 1) and three support workers, as data sources, and used interviews and field notes as data collection methods.

A team approach was taken for this study; one of the team members was also a support worker for the support charity, and in keeping with an ethos of co-production in research (Lokot and Wake 2021), was involved in the design, data analysis and publication of the final reports. This member of the team was, however, not involved in interviewing, as they provided technical support for some participants to enable them to be interviewed. Each remaining member of the team interviewed two or more of the participants. These were conducted using the Microsoft Teams platform due to the

Table 1. Characteristics of the participants.

Pseudonym	Gender	Age	Presenting need for the digital support service
John	Male	70	Visual impairment, physical disability (muscular-skeletal)
Marion	Female	60	Visual and hearing impairment
Julie	Female	48	Visual impairment
Angela	Female	74	Physical disability, respiratory disorder
Violet	Female	91	Visual impairment
Nicola	Female	48	Physical disability
James	Male	62	Visual impairment
Barbara	Female	88	Visual and hearing impairment
Sandra	Female	66	Visual impairment
Emma	Female	91	Physical disability (muscular-skeletal), frailty
Grace	Female	89	Visual impairment, physical disability (muscular-skeletal), cardiac disease

COVID-19 pandemic, in keeping with ethical approval requirements. Interviews were undertaken during the first lockdown in the winter of 2020/21.

In-depth, semi-structured interviews were conducted with the 11 participants; this allowed open-ended responses from participants in the form of narrative or 'stories' about their experiences of shielding and technology use during the pandemic (Kvale 1996; Mahat-Shamir, Neimeyer, and Pitcho-Prelorentzos 2021). Data were supplemented by recruiting and interviewing three support workers who had experience working with older and disabled people during the same period. All the support workers had been employed in this capacity for several years.

The researchers made field notes during the interviews and 11 case reports were developed and analysed thematically, following Braun and Clarke (2006, 2014, 2021) framework for analysis. The field notes and the interview data from the three support workers were used to augment the thematic analysis within and across cases (Ayres, Kavanaugh, and Knaf 2003; Braun and Clarke 2021). In the interests of confidentiality and to protect the anonymity of the participants, in this paper, we present the themes rather than the case reports.

As part of the validation process (Birt et al. 2016), in October 2021, following the analysis of the data and identification of the main themes, a face-to-face meeting was organised with participants and the supporting agency to discuss the findings. Participants reported that the themes resonated with their experiences and no changes were made to these.

Results

The 11 participants had a range of disabilities: eight had visual impairment; four had a physical disability, primarily muscular-skeletal in nature; two had hearing impairment, and three had a combination of disabilities (Table 1). The names included with quotes are pseudonyms.

The range of technological equipment used across the participant group was wide and varied and included: desktop computers, laptops, tablets and iPads, Smart mobile phones, and voice-activated technology such as Amazon Echo (Alexa) and Google Home. Participants also utilised speech recognition software, text readers, audiobooks, YouTube, Zoom, Skype, and online banking and shopping.

Five main themes were identified; technology was a mixed blessing and caused frustration: *'It's like an unbridled horse that runs away with you'*, technology use increased during lockdown: *'It is all about Zoom... it is Zoom, Zoom, Zoom!'*, technology supported resilience and contributed to identity through *'stimulation, knowledge and friendship'*, technology needs to be accessible: *'Some people give up easily'*, and support was required to facilitate technology use: *'We have nicknamed her [support worker] the computer queen.'*

Technology was a mixed blessing and caused frustration: 'it's like an unbridled horse that runs away with you'

Being compelled to use digital technologies created tension between the benefits and additional stresses and anxieties borne out of increased use, and the heightened expectations of use by participants:

We lap it up when we're on it, and we enjoy what we do, and it does enhance our lives. But always there is the battle...sometimes controlling the beast is the problem, ***it's like an unbridled horse that runs away with you.*** (Angela)

The metaphor, of a bolting, '*unbridled horse*', depicted the many challenges to using digital technologies. There was both the sense of excitement, of a galloping horse, combined with the realisation that there was a need to control the unfamiliar technology.

Furthermore, the increased necessity to use digital technologies, because of shielding, for some, felt like they were being '*forced*'; or compelled to use the technology:

We were forced at gunpoint really! At gunpoint, we've learnt a great deal, and we've benefited a great deal. (Angela)

This was in the absence of other alternatives, such as attending day services and other face-to-face activities they normally participated in, that were halted by the pandemic. It was within this context that a digital support service was important as participants found using the technology frustrating and traumatic at times:

When they work it is great but when they don't work it is frustrating [laughs]. Sometimes you want to chuck these things out the window [laughs]. Send them flying. (Marion)

I would go as far as to say it is traumatic...some of the older people, you know they're struggling to get the connection, things play up on them, and really stop them coping really ... the frustration has reduced me to tears more than once, it must be said... (Angela)

Although the challenges and barriers to using digital technologies during the pandemic were not ubiquitous or unique to all the participants, several aspects were brought into focus over this period. For example, and in keeping with the unbridled horse metaphor, some participants found that aspects, such as predictive text, meant that the technology had a 'mind of its own':

I find it frustrating when it doesn't do what I tell it to [voice-activated software]. If I'm doing an email it puts in extra words in between what I'm saying. (Sandra)

Or they became anxious that they may inadvertently make an error that would put them at risk when using the online technology:

I sometimes see something coming up on the Tablet and I'm frightened to do it in case it involves money...you're worried about stepping into zones that you might have difficulties with, or fraud. (Angela)

For the support workers, given that the digital support service was also restricted to remote rather than face-to-face support, this added complications in trying to provide support to those using digital technology:

Ordinary I would always have done that in person, there is an advantage with that in that I can make a visual judgement, calls on their mobility, their hands, how bad their eyesight is. (Support Worker)

Technology use increased during lockdown: 'it is all about Zoom... it is Zoom, Zoom, Zoom!'

As solitude and being alone before shielding already existed amongst some participants, in some cases, physically distancing had little impact for these participants. Digital technologies were already an existing feature of their care and support, and they were already familiar with a range of technology devices. These participants did not report increased loneliness:

Zoom has been fantastic. I contact family. Every so often there is a works webinar, once a week. Then from the church, we do a lot of that as well. So it is quite busy. (James)

I was housebound before covid; so I'd been isolated a bit before that. (Barbara)

I would have done [felt lonely] if I'd not had my iPad, but I'm fairly used to being a bit isolated anyway as I can't see or hear very well anyway. (Sandra)

The use of digital technologies offered many benefits for those using the support service. These included access to hobbies, support with daily tasks, playfulness and laughter, cultural enrichment and help with practical matters. For most of the participants, the biggest change in the use of digital technology and support requested was the growth of video calling, particularly the use of Zoom; a software programme that enabled videotelephony where users could connect to other people online, through virtual meetings and attendance at events:

I have looked forward to my Zoom meeting with people and I have stuck with them even when it has been hard to hear sometimes. I have met, I suppose it sounds funny to say you have met people, interesting people through the Zoom meetings. (Marion)

...what it has become this year. It is all about Zoom. Never mind all the perfectly good video calling systems, it has been about Zoom. Of course, there are a lot of good Zoom online meetings now... I mean you can do all these groups and it is Zoom, Zoom, Zoom! (Support Worker)

Some of the participants already had well-established ways of using digital technologies that supported their resilience, however, the pandemic built on and amplify the use of these. The participants acknowledged the multiple benefits of technology use during the COVID-19 pandemic:

I am using something every day, whether my iPhone, laptop or something like Zoom, WhatsApp. I am using something pretty much every day ... we have done church on Zoom, coffee mornings on Zoom, I have sent pictures. I have been doing this since I started having one. I have even put them on Facebook... (John)

Several participants highlighted how video calling had become a kind of *'lifeline'* given the need to physically distance themselves from others because of shielding. As one participant reported, the first six months had been difficult until Zoom was set up for them:

Crawling up the wall getting frustrated but once I got on Zoom things improved and I did...having a laugh and joke over Zoom in light of other social activities stopped. (Julie)

A driving force behind the use of this technology was often family. Before the pandemic, the digital support service tended to support video calling when family members moved abroad. With shielding, the physical distance between family members had become a reality and they adopted video calling as a response. Participants used video calls to contact friends and take part in activities with online groups, such as book clubs, singing groups, coffee mornings, trustee meetings, and attending lectures, theatre productions, and church services:

Zoom is new to me since the lockdown. I've used a lot of Zoom to keep in touch with others- we have a book group, and I'm in the WI [Women's Institute]...and I've listened to a lot of lectures on Zoom, so that's been terrific. (Grace)

Using digital technologies, like video calling, was a benefit reported by participants because a major impact of the pandemic and physical distancing was the stopping of social groups and day services for some participants. These digital technologies became a surrogate for these social contacts and activities as people were forced to stay at home. Shielding saw a greater need and expectation of being connected online, in the absence of being able to meet people in other ways.

Technology supported resilience and contributed to identity through 'stimulation, knowledge and friendship'

Several participants had developed resilience and ways of maintaining a positive sense of self and well-being using digital technologies. Several reported how much their confidence in using technology had improved due to the lockdown:

Used to say, I will never be able to do that. I will never be able to use the computer. I hear people saying I could not do that, and I say you could, you could do it. You see this is it and it is having confidence and others being confident in you. (Grace)

Utilising digital technologies for creativity was important. Participants highlighted they liked finding information, getting advice, and online shopping but also creating art, poetry, making music, photography, writing and keeping a diary. One older participant who had just started to use an iPad reported:

...taking pictures – that’s my favourite – I have a lot of fun taking pictures and receiving them – taking pictures of flowers from my balcony, and I like taking pictures of the sky too. (Sandra)

Digital technologies were also described by participants as being entertaining through watching online videos, playing computer games, and listening to audiobooks and music. These activities were seen as enjoyable, fun and during the lockdown, a welcome relief from the anxieties of the pandemic:

I think computers can really help for stimulation, knowledge and friendship. Really well. I think they are marvellous for all kinds of things, like music, literature, poetry and what have you. Things like that. I think that they are invaluable...(Grace)

It is an antidote to loneliness I think...people who are actually on their own, it must be a real godsend to them. (Angela)

The connectivity that occurred for almost all the participants was a significant factor, particularly for those who had, before the lockdown, been relatively isolated already:

[I like] just seeing peoples’ faces, their expressions, and you sort of feel more connected than you do just speaking on the phone, or just sharing emails, it’s not quite the same, is it? I think seeing faces and expressions is lovely. (Emma)

[video conversations] made you feel less isolated because you felt as if you’d been locked in and the key had been thrown away, a bit like prison really, a bit like prison. (Angela)

Technology needs to be accessible: ‘some people give up easily’

The limitations of technology were also recognised. These included the accessibility and the potential for technology to exclude older and disabled people. This was particularly problematic for those who were visually impaired:

I don’t do online shopping I can’t see the labels on the screen. (Violet)

It can be frustrating. I mean I am grateful if someone can help me with it, but it would be nice to be able to register things by myself and log in easily without having to give people my log in details. (Julie)

Although accessibility features on computers were reported to be developing and improving, some participants highlighted the need for specialised

equipment and software, again, this was especially challenging for those with visual impairment:

Some people give up easily. They have a bad episode and do not try again but if it was easier to access people would use it and get more enjoyment from it, I think. Not everybody is persistent like me and not everybody is able to motivate themselves to keep trying and find things. They just decide I can't do that! I can't do that...(Marion)

Accessibility was also a challenge for those with other disabilities, in different ways:

Because of the wheelchair, it is difficult to use the iPad. Still trying to get an arm for support to get more freedom of movement and support. (Nicola)

For those who struggled with dexterity, it was the finer aspects of using the technology that they struggled with:

It's a question of remembering, or not pressing buttons too soon, and not expecting the computer to wait for me because it doesn't always, in effect. (Emma)

Physically accessing the computer is a problem...a mouse can be easier than the little flat thing that you've got. (Angela)

Computers were referred to as 'complicated', 'surrounded by jargon' and 'stressful', and this hampered accessibility. Furthermore, as some participants had degenerative conditions, they may need to change equipment and seek software updates, however, these were not always easy:

What I was saying is that because it has gotten old [the computer] and I have got older as well and my eyes have got worse, it is more difficult to use. I have missed it because I really enjoyed it. It filled my life in lots of areas. I used to go on and get lots of information and knowledge, things I wanted to know about. I would get on there and look it up and think oh gosh, that is marvellous, you know. So that was really helpful but because things have happened in my life [bereavement], the last few years anyway, and I have got older and my machine got older, so you get more problems with it. (Grace)

Technology equipment and software also changed over time, even during the lockdown, and the pace of these changes was often a problem. This meant that getting the equipment and software right was an important aspect of supporting clients to access and use digital technology from the perspective of support workers. As technology could be expensive, and clients were often on benefits so did not have disposable income to enable them to purchase new equipment, the provision and upgrading of equipment by the digital support service were seen as essential to digital support:

We also do get people coming to us saying that they have this old laptop, but it has not worked for years, So the first thing I do is ask how old the equipment is and if it is within 6 or 7 years. I will say that I will come out and have a look, troubleshoot their equipment because I am very proficient in windows. (Support Worker).

One of the impacts of the pandemic was the huge increase in demand for laptops and tablets, which meant that less equipment was given to the digital support service to recycle for their clients. Where equipment could be found or was already owned by clients, ensuring it was in working order and that the client was able to access the Internet was another priority. Without the Internet (which normally means broadband access), the benefits of using digital technologies would be limited:

I do think people who are disabled, whatever the disablement, [computer] teaching it is valuable to them, it should be encouraged so they can use it because it is so helpful. I mean it is contact with the outside world like the phone is contact. I mean what would we do without the phone? I mean the phone you can get some information, but it is not like a computer where it comes up in front and you can swiftly control it and it takes you into another stage. (Grace)

Advice and support about access to broadband, including free or shared access with a neighbour had also become an increasingly important aspect of helping participants to access digital services over this period:

The first thing I do is try to ascertain if they are in a financial position to buy broadband and if not I ask if they have a neighbour whose broadband they can share and perhaps contribute towards the costs. If that is a no, I am just basically trying to gauge, because there is little point in us trying to give them equipment if they do not have broadband access. (Support Worker)

Support was required to facilitate technology use: 'We have nicknamed [support worker] the computer queen'

A working computer and access to broadband were the start of setting up a client to use digital technologies for the support agency. The agency did not provide broadband but helped those it supported to purchase this or share with a willing neighbour. The agency would also provide advice about purchasing new digital equipment or provide a second-hand recycled computer with an affordable option to buy if they liked it.

The hardware and software used also had to match the need of the older and disabled person in terms of their functional and/or sensory impairment. Learning to use specialised equipment and software required time, patience, and encouragement. Having a knowledgeable person to turn to for support when the technology went wrong was highlighted:

If I have a technical problem, it is great. **We have nicknamed [support worker] the computer queen** because anything technical she can deal with...they are great. They help wherever they can. (James)

Support delivered by 'trainers', within the digital support service, saw participants develop expertise in using specialised equipment and software aimed at specific needs and impairments. This expertise was seen as an

important aspect of the digital support service by those who delivered and received the support:

[The support worker] has been an important helpas my eyes have got worse things changed IT wise over time ... having to change to Windows 10. I had to change so I had to buy an update normally I would have walked through and enjoyed doing this I have been very grateful to [support worker] who has helped me. (Violet)

Participants were encouraged to seek help from their support worker, and they did not hesitate to request help when they needed it:

What I've learnt so far is when something's gone wrong or I can't do something, I ring [support worker] up and she tells me how to do that one thing. (Barbara)

The participants were incredibly grateful to the support workers who offered help and assistance throughout the pandemic. They often lacked confidence and/or were experiencing life-transforming issues that support workers became involved with. Support to explore and use new technologies within this context was important and valued by those who used the digital support service. Support experiences therefore often went beyond the technical aspects of set-up and training to become emotional:

It is just that it has been a bad year in lots of ways, and so all this has interfered and with me being depressed as well, people weren't able to come and then they have problems. The girls are very good, particularly [support worker] is marvellous. She is so good. I mean the YouTube wasn't working, the sound wasn't coming through very well and [support worker] came and just like that, she put something in it. (Grace)

For support workers, a challenge was at which point a client should leave the service or decide whether support should remain ongoing. At times professional boundaries could become blurred:

It's...when we go into people's own homes, you kind of become almost like a friend, particularly if they are regular users and particularly so with the trainers. (Support Worker)

The support provided by the digital support service led to the development of a special and lasting type of relationship between clients and support workers which made it difficult to see clients leave the service:

[Support worker] has been brilliant with the resources and time they have had. We have had some fun with new apps that take photos and describe pictures. It is not perfect but good fun. (Marion)

Yes, and I have always had the same people. [Support worker] is marvellous. She is good with the computer. What she can't do with the computer, she is so intelligent. (Grace)

I've learnt most of what I know from telephone calls to [the support worker] during lockdown...she's always there for me....I couldn't do anything without [support worker]. (Barbara)

Discussion

This study aimed to explore the experiences of using digital technology by older and disabled people social distancing and shielding during the first period of lockdown over the Covid-19 pandemic. There was a greater need for support to use digital technologies because of the pandemic, however, the increased usage was, at times, challenging and stressful. A pre-pandemic study of older people found that digital technologies can help reduce social isolation, particularly by helping participants keep in touch with family and friends when face-to-face social contact is impossible (Clayton 2018). This study supported this finding during a period of lockdown. Although Zoom existed before the pandemic, there was a general increase in its use during lockdowns, for work, education, and social relations (The Guardian Newspaper 2020; Greenwood-Hickman et al. 2021; Derynda et al. 2022; O'Connell et al. 2022). Along with this, there was also wider use of text, email, and social media platforms (Centre for Ageing Better 2020).

Tackling issues of loneliness and mental well-being are however multi-dimensional. The participants in this study talked about their loneliness experiences during the lockdown but didn't report the more acute and intense forms of loneliness found to be experienced by others during the lockdown (British Red Cross 2020). The universal experience of the lockdown may have made isolation more bearable and so loneliness less acute for some (Campaign to End Loneliness (CTEL) 2021). Also, the participants already lived lives that were somewhat isolated, due to their disabilities, so the imposed isolation was relative in terms of the Covid19 Pandemic and no different from before (Age UK 2021b). The increased use of technology, particularly accessing leisure activities and meeting friends and family easily through Zoom, enhanced their lives (Brown 2021).

Our participants also showed resilience when faced with lockdown conditions. In the context of this study, resilience is contextualised as the process of effectively negotiating, adapting to, or managing significant sources of stress or trauma (Windle 2011). Thus, resilience was further encouraged through the support they received from the agency. Social support has been identified as particularly important for creating individual resilience in times of crisis (Netuveli et al. 2008). In keeping with our findings, engaging in hobbies and activities is an effective coping strategy for people with mental health conditions including disabilities (What Works Wellbeing 2021). The ability to positively respond to stressful life events sees better health outcomes and positive self-perception of managing successfully, particularly for older people (MacLeod et al. 2016; Pan, Bloomfield, and Boyd 2019. Randall et al. (2015), highlight that psychological resilience in older age is also inseparable from our self-identity and the 'stories' we tell about ourselves. During the lockdown, digital technologies therefore could support

'storytelling' by providing opportunities for shopping, learning, creativity, and amusement. For older and disabled people without access to digital technology support, this could mean social exclusion, particularly when not receiving care and support from other local organisations or services (All-Party Parliamentary on Social Integration (APPG) 2020).

Poverty remained an underlying factor for many issues faced by older and disabled people. Accordingly, systemic failures highlighted during the pandemic remain present during non-crisis times (Smith et al. 2021). This study found barriers still existed to digital inclusion like access to the appropriate equipment and the internet and difficulties in developing digital skills, confidence, and trust (Age UK 2021a; Campaign to End Loneliness (CTEL) 2021).

The lockdown presented additional challenges in delivering remote digital technological support. Personal circumstances rarely stay the same for long, and the interplay of changing needs and changing technologies was particularly challenging for older and disabled people in this study. Greater time was needed to support those who lack digital skills and confidence in this context (Age UK 2021a). Although the telephone could be an effective way to support people remotely, some issues will be harder to fix.

Most participants in this study had a visual impairment and those individuals had specific needs when accessing digital technology (Choi et al. 2020). For example, for those with visual impairment, a lack of accessible software made it harder to log on and required ongoing support, and the issue was not always easily resolved. Okonji et al. (2015) found that complex website interface designs did not fully consider the vision needs of their research participants and the increasing cost of some assistive devices, such as screen readers, was an additional barrier to those with a visual impairment. Also, it has been documented that older people with visual impairment had a broad range of physical and mental comorbidities compared to those of a similar age without visual impairment and are more likely to have multiple comorbidities (Court et al. 2014). As one report highlighted, during the lockdown, it was harder for those with hearing or sight loss, learning disabilities or cognitive impairment to interact online (Campaign to End Loneliness (CTEL) 2021); this was an issue found in this study as well.

The COVID-19 pandemic has highlighted the shortcomings of existing technologies; challenges to their uptake and use by older and disabled people, and so the need to co-design solutions with older and disabled people (Haase et al. 2021). For example, video conferencing software had not been developed with visually impaired older or disabled people in mind. The result had been a risk of digital exclusion without support. For some, continued investment by Governments to increase digital skills and confidence was essential (All-Party Parliamentary Group on Loneliness (APPG) 2021). As Locke et al. (2022) highlight, having access to digital technology for older and disabled people was not an abstract thing but is relational. 'It

exists within evolving cultural practices, beliefs and power structures.’ (Locke et al. 2022, p. 122)

Although the lockdown had seen an expansion of services providing digital technology support to help digitally challenged people, many organisations did not have the capacity or skills to deliver the specialist digital support identified in this study without further support from experts (Centre for Ageing Better 2021). There was a need for additional capacity targeted at those who would benefit most from ongoing and specialist digital technology support. As identified in this study, ‘trusted relationships’ and ‘wrap-around digital skills support’ were required for this to be successful (Centre for Ageing Better 2021). Further supported by our participants was that, for older people to become confident in using digital technology, support needs to be person-centred and delivered on a one-to-one basis (Age UK 2021a).

Services who would want to support loneliness and mental well-being had seen an increase in demand for support for services but also a reduction in incomes given their inability to undertake fundraising social events (All-Party Parliamentary Group on Loneliness (APPG) 2021). However, the creation of organisations like Mutual Aid UK (see covidmutualaid.org) and increased interest in volunteering could support those agencies that aim to tackle loneliness and offer mental health support. Utilising digital technologies may see new opportunities to connect to older and disabled people who perhaps previously would not have been able to engage with these services in person.

The pandemic has therefore seen opportunities and inclusiveness lacking for some older and disabled people (Brown 2021). Older and disabled people will continue to be vulnerable to COVID-19, and potentially face continued limitations on their movements and so real-life social contact. Services will need to continue to find ways to include them like using digital technologies. At the time of writing, restrictions had been eased but uncertainty exists. The likelihood is that many services will remain online even post-pandemic and so the need for digital inclusion and support remains (All-Party Parliamentary Group on Loneliness (APPG) 2021).

Importantly, however, although the lockdown has highlighted the importance of digital inclusion for older and disabled people, it has also seen the need for non-digital ways of communicating, such as postal letters, to ensure those who are digitally excluded are not left out by services (All-Party Parliamentary on Social Integration (APPG) 2020).

Services need to recognise that the quality of the social contact provided through digital technologies may not always be satisfactory for clients and may not help mitigate feelings of social isolation and loneliness. Many older people may prefer real social contact and find it difficult to make or maintain friendships online (Clayton 2018). Although online interaction may provide important respite from social distancing, it should not replace the physical and mental health benefits of older and disabled people participating in

face-to-face interactions. Personal interaction is required to avoid both physical health deterioration and reduce anxiety about returning to social settings post-pandemic (Campaign to End Loneliness (CTEL) 2021). It is also important to recognise that some people will never go online, even if a pandemic was a strong prompt for them to use digital technologies or will only want to use technology in a limited way (Age UK 2021a). Access to services and support of any kind, therefore, will always need to be delivered in ways that will cater for everyone, digitally included, and digitally excluded alike.

Limitations

The study reports findings at one point in time, from a small and unique client group who were not representative of all aged or disabled people during the lockdown. The focus was also on the limited timescale of the early lockdowns and so subsequent lockdowns and the post-lockdown pandemic situations may have seen different experiences as participants adapted their use of digital technology to these situations. Although the study shows there are considerable challenges for some older and disabled people in using digital technology even with digital support, it didn't provide any insights into those who did not have digital support during the early lockdown.

The study also relied on self-reported interview data, which, although useful for exploring how people made sense of their experiences, may also see a 'hermeneutics of suspicion', where what people say they do and what they do are different (Hammersley 2012). What participants said about their experiences of using digital technology during the early lockdowns may have been influenced by their interactions with support workers. The participants were supported by support workers they were closely involved with; their involvement in the research could therefore have influenced their responses. However, the support workers enabled participation in the study which was important so that people who are not often the focus of research were involved.

Conclusion

This study has captured a picture of the experiences of older and disabled people using digital technologies during the early COVID-19 lockdowns. The technologies offered multiple benefits during the pandemic which contributed to the resilience of participants. However, these technologies could be a mixed blessing. When technology did not work in the ways that it should, some participants experienced frustration and distress. This study found digital technology support cannot be removed from these emotional aspects and requires understanding and reassurance. Digital support workers, working with older and disabled people, need to know about digital technology, but also have skills to support people who have various physical, mental, and

social impairments. It is this combination of support that helped create positive relationships between the older and disabled people and their digital technology support workers in this study.

Acknowledgements

The authors would like to thank those involved in this study and the digital support service for their support. They would like to acknowledge the work of the branch manager and support workers of the digital support worker for their contribution. They have not been named to maintain confidentiality for those involved.

Disclosure statement

No potential conflict of interest was reported by the authors.

ORCID

David Clayton  <http://orcid.org/0000-0002-9278-9138>

References

- Age UK. 2021a. "Briefing Paper. Digital Inclusion and Older People - How Things Changed in a Covid-19 World?" <https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/active-communities/digital-inclusion-in-the-pandemic-final-march-2021.pdf>.
- Age UK. 2021b. "Same as it Ever Was: 'Life During the Pandemic Was no Different to Normal... I'm Always Lonely' Loneliness and Covid-19." <https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/consultation-response-s-and-submissions/health-wellbeing/loneliness-and-covid-19--december-2021.pdf>.
- All-Party Parliamentary Group on Loneliness (APPG). 2021. "A Connected Recovery. Findings of the APPG on Loneliness Inquiry." <https://www.redcross.org.uk/about-us/what-we-do/action-on-loneliness/all-party-parliamentary-group-on-loneliness-inquiry/a-connected-recovery>.
- All-Party Parliamentary on Social Integration (APPG). 2020. "Social Connections in the Covid-19 Crisis." <https://socialintegrationappg.org.uk/wp-content/uploads/2020/06/Social-Connection-in-the-COVID-19-Crisis.pdf>.
- Andersson, L. 1998. "Loneliness Research and Interventions: A Review of the Literature." *Aging & Mental Health* 2 (4): 264–274. doi:10.1080/13607869856506.
- Ayres, L., K. Kavanaugh, and K. A. Knaf. 2003. "Within-Case and Across-Case Approaches to Qualitative Data Analysis." *Qualitative Health Research* 13 (6): 871–883. doi:10.1177/1049732303013006008.
- Baxter, P., and S. Jack. 2008. "Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers." *The Qualitative Report* 13 (4): 544–559.
- Birt, L., S. Scott, D. Cavers, C. Campbell, and F. Walter. 2016. "Member Checking: A Tool to Enhance Trustworthiness or Merely a Nod to Validation?" *Qualitative Health Research* 26 (13): 1802–1811. doi:10.1177/1049732316654870.
- Braun, V., and V. Clarke. 2006. "Using Thematic Analysis in Psychology." *Qualitative Research in Psychology* 3 (2): 77–101. doi:10.1191/1478088706qp0630a.

- Braun, V., and V. Clarke. 2014. "What Can "Thematic Analysis" Offer Health and Wellbeing Researchers?" *International Journal of Qualitative Studies on Health and Well-Being* 9 (1): 26152. doi:10.3402/qhw.v9.26152.
- Braun, V., and V. Clarke. 2021. "Can I Use TA? Should I Use TA? Should I Not Use TA? Comparing Reflexive Thematic Analysis and Other Pattern-Based Qualitative Analytic Approaches." *Counselling and Psychotherapy Research* 21 (1): 37–47. doi:10.1002/capr.12360Citations.
- British Red Cross. 2020. "Life After Lockdown: Tackling Loneliness Among Those Left Behind." <https://www.redcross.org.uk/about-us/what-we-do/we-speak-up-for-change/life-after-lockdown-tackling-loneliness>.
- Brittain, K., A. Kingston, K. Davies, J. Collerton, L. A. Robinson, T. B. L. Kirkwood, J. Bond, and C. Jagger. 2017. "An Investigation into the Patterns of Loneliness and Loss in the Oldest Old –Newcastle 85 Study." *Ageing and Society* 37 (1): 39–62. doi:10.1017/S0144686X15001142.
- Brown, N. 2021. "Make Enablement the Legacy of the COVID-19 Pandemic." <https://www.transformingsociety.co.uk/2021/05/25/make-enablement-the-legacy-of-the-covid-19-pandemic>.
- Cacioppo, J. T., and W. Patrick. 2008. *Loneliness: Human Nature and the Need for Social Connection*. New York: WW Norton & Company.
- Campaign to End Loneliness (CTEL) 2021. "Lessons from lockdown. Loneliness in the Time of Covid-19." <https://www.campaigntoendloneliness.org/blog/lessons-from-lockdown>.
- Centre for Ageing Better. 2020. "How Has COVID-19 Changed the Landscape of Digital Inclusion?" <https://www.ageing-better.org.uk/publications/how-has-covid-19-change-d-landscape-digital-inclusion>.
- Centre for Ageing Better. 2021. "Digital Skills to Connect: Exploring the Digital Experiences of People Aged 50–70 and the Organizations Supporting Them During COVID-19." <https://www.ageing-better.org.uk/publications>.
- Chen, Y. R. R., and P. J. Schulz. 2016. "The Effect of Information Communication Technology Interventions on Reducing Social Isolation in the Elderly: A Systematic Review." *Journal of Medical Internet Research* 18 (1): E 18. doi:10.2196/jmir.4596.
- Choi, N. G., D. M. DiNitto, O. E. Lee, and B. Y. Choi. 2020. "Internet and Health Information Technology Use and Psychological Distress among Older Adults with Self-Reported Vision Impairment: Case-Control Study." *Journal of Medical Internet Research* 22 (6): E17294. doi:10.2196/17294.
- Clayton, D. 2018. "Exploring Loneliness among Older People and Their Related Use of New Technologies." PhD thesis. University of Sheffield. <http://etheses.whiterose.ac.uk>.
- Court, H., G. McLean, B. Guthrie, S. W. Mercer, and D. J. Smith. 2014. "Visual Impairment is Associated with Physical and Mental Comorbidities in Older Adults: A Cross-Sectional Study." *BMC Medicine* 12: 181. doi:10.1186/s12916-014-0181.
- Creed, C. 2018. "Assistive Technology for Disabled Visual Artists: Exploring the Impact of Digital Technologies on Artistic Practice." *Disability & Society* 33 (7): 1103–1119. doi:10.1080/09687599.2018.1469400.
- Czaja, S. J., N. Charness, A. D. Fisk, C. Hertzog, S. N. Nair, W. A. Rogers, and J. Sharit. 2006. "Factors Predicting the Use of Technology: Findings from the Center for Research and Education on Aging and Technology Enhancement (CREATE)." *Psychology and Aging* 21 (2): 333–352. doi:10.1037/0882-7974.21.2.333.
- Damant, J., and M. Knapp. 2015. "What are the Likely Changes in Society and Technology Which Will Impact Upon The Ability of Older Adults to Maintain Social (Extra-Familial) Networks of Support Now, in 2025 and in 2040?" London, Government Office for Science. <http://eprints.lse.ac.uk/63146>.
- Derynda, B., J. Siegel, L. Maurice, and N. Cook. 2022. "Virtual Lifelong Learning among Older Adults: Usage and Impact during the COVID-19 Pandemic." *Cureus* 14 (4): 1–8. e24525. doi:10.7759/cureus.24525.

- Desmond, D., N. Layton, J. Bentley, F. H. Boot, J. Borg, B. M. Dhungana, P. Gallagher, et al. 2018. "Assistive Technology and People: A Position Paper from the First Global Research, Innovation and Education on Assistive Technology (GREAT) Summit." *Disability and Rehabilitation. Assistive Technology* 13 (5): 437–444. doi:10.1080/17483107.2018.1471169.
- Egard, H., and K. Hansson. 2021. "The Digital Society Comes Sneaking in. An Emerging Field and Its Disabling Barriers." *Disability & Society* 1–15. (ahead-of-print). doi:10.1080/09687599.2021.1960275.
- Fusch, P., G. E. Fusch, and L. R. Ness. 2018. "Denzin's Paradigm Shift: Revisiting Triangulation in Qualitative Research." *Journal of Social Change* 10 (1): 19–32. doi:10.5590/JOSC.2018.10.1.02.
- Gauci, V. 2021. "Dis/Ability-Producing Technology Assemblages and Networks at the Workplace: A New Materialist Analysis." *Disability & Society* 36 (3): 488–507. doi:10.1080/09687599.2020.1758038.
- Geraedts, H. A. E., W. Zijlstra, W. Zhang, S. Bulstra, and M. Stevens. 2014. "Adherence to and Effectiveness of an Individually Tailored Home-Based Exercise Program for Frail Older Adults, Driven by Mobility Monitoring: Design of a Prospective Cohort Study." *BMC Public Health* 14: 570. doi:10.1186/1471-2458-14-570.
- Greenwood-Hickman, M. A., J. Dahlquist, J. Cooper, E. Holden, J. B. McClure, K. D. Mettert, S. R. Perry, and D. E. Rosenberg. 2021. "They're Going to Zoom It": A Qualitative Investigation of Impacts and Coping Strategies during the COVID-19 Pandemic among Older Adults." *Frontiers in Public Health* 1–10. doi:10.3389/fpubh.2021.679976.
- Grijseels, M., T. Zuiderent-Jerak, and B. J. Regeer. 2021. "Technologies for Inclusive Employment: Beyond the Prosthetic Fix—Social Transformation Axis." *Disability & Society* 1–24. doi:10.1080/09687599.2021.1997720.
- Haase, K. R., T. Cosco, L. Kervin, I. Riadi, and M. E. O'Connell. 2021. "Older Adults' Experiences with Using Technology for Socialization during the COVID-19 Pandemic: Cross-Sectional Survey Study." *JMIR Aging* 4 (2): e28010. doi:10.2196/28010.
- Hammersley, M. 2012. *What is Qualitative Research?* London: Sage.
- Holt-Lunstad, J., T. B. Smith, and J. B. Layton. 2010. "Social Relationships and Mortality Risk: A Meta-Analytic Review." *PLoS Medicine* 7 (7): e1000316. doi:10.1371/journal.pmed.1000316.
- Holwerda, T. J., D. J. Deeg, A. T. Beekman, T. G. Van Tilburg, M. L. Stek, C. Jonker, and R. A. Schoevers. 2014. "Feelings of Loneliness but Not Social Isolation, Predict Dementia Onset: Results from the Amsterdam Study of the Elderly (AMSTEL)." *Journal of Neurology, Neurosurgery, and Psychiatry* 85 (2): 135–142. doi:10.1136/jnnp-2012-302755.
- House of Lords. 2021. "Ageing: Science, Technology and Healthy Living, Science and Technology Select Committee." *1st Report of Session 2019–21*. London: The Stationery Office.
- Knowles, B., and V. L. Hanson. 2018. "The Wisdom of Older Technology (Non)Users." *Communications of the ACM* 61 (3): 72–77. doi:10.1145/3179995.
- Kvale, S. 1996. *Interviews: An Introduction to Qualitative Research Interviewing*. Thousand Oaks, CA: Sage.
- Landeiro, F., P. Barrows, E. Nuttall Musson, A. M. Gray, and J. Leal. 2017. "Reducing Social Isolation and Loneliness in Older People: A Systematic Review Protocol." *BMJ Open* 7 (5): e013778. doi:10.1136/bmjopen-2016-013778.
- Locke, K., L. McRae, G. Peaty, K. Ellis, and M. Kent. 2022. "Developing Accessible Technologies for a Changing World: Understanding How People with Vision Impairment Use Smartphones." *Disability & Society* 37 (1): 111–128. doi:10.1080/09687599.2021.1946678.
- Lokot, M., and C. Wake. 2021. *Co-production of Research Between Academics, NGOs and Communities in Humanitarian Response: A Practice Guide*. London: London School of Hygiene & Tropical Medicine.

- MacLeod, S., S. Musich, K. Hawkins, K. Alsgaard, and E. R. Wicker. 2016. "The Impact of Resilience among Older Adults." *Geriatric Nursing (New York, N.Y.)* 37 (4): 266–272. doi:10.1016/j.gerinurse.2016.02.014.
- Mahat-Shamir, M., R. A. Neimeyer, and S. Pitcho-Prelorentzos. 2021. "Designing in-Depth Semi-Structured Interviews for Revealing Meaning Reconstruction after Loss." *Death Studies* 45 (2): 83–90. doi:10.1080/07481187.2019.1617388.
- Manzoor, M., and V. Vimarlund. 2018. "Digital Technologies for Social Inclusion of Individuals with Disabilities." *Health and Technology* 8 (5): 377–390. doi:10.1007/s12553-018-0239-1.
- Masi, C. M., H. Y. Chen, L. C. Hawkley, and J. T. Cacioppo. 2011. "A Meta-Analysis of Interventions to Reduce Loneliness." *Personality and Social Psychology Review: An Official Journal of the Society for Personality and Social Psychology, Inc* 15 (3): 219–266. doi:10.1177/1088868310377394.
- Netuveli, G., R. D. Wiggins, S. M. Montgomery, Z. Hildon, and D. Blane. 2008. "Mental Health and Resilience at Older Ages: Bouncing Back after Adversity in the British Household Panel Survey." *Journal of Epidemiology and Community Health* 62 (11): 987–991. doi:10.1136/jech.2007.069138.
- O'Connell, M. E., K. R. Haase, K. S. Grewal, I. Panyavin, A. Kortzman, M. E. Flath, A. Cammer, T. D. Cosco, and S. Peacock. 2022. "Overcoming Barriers for Older Adults to Maintain Virtual Community and Social Connections During the COVID-19 Pandemic." *Clinical Gerontologist* 45 (1): 159–171. doi:10.1080/07317115.2021.1943589.
- O'Sullivan, R., B. Lawlor, A. Burns, and G. Leavey. 2021. "Will the Pandemic Reframe Loneliness and Social Isolation?" *The Lancet Healthy Longevity* 2 (2): e54–e55. doi:10.1016/S2666-7568(20)30066-0.
- Office for National Statistics (ONS). 2020. "Disability and Loneliness". <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/disability/datasets/disabilityandloneliness>.
- Okonji, P., M. Lhussier, C. Bailey, and M. Cattan. 2015. "Internet Use: Perceptions and Experiences of Visually Impaired Older Adults." *Journal of Social Inclusion* 6 (1): 120–145. doi:10.36251/josi.95.
- Orpwood, R., J. Chadd, D. Howcroft, A. Sixsmith, J. Torrington, G. Gibson, and G. Chalfont. 2010. "Designing Technology to Improve Quality of Life for People with Dementia: User-Led Approaches." *Universal Access in the Information Society* 9 (3): 249–259. doi:10.1007/s10209-009-0172-1.
- Palinkas, L. A., S. M. Horwitz, C. A. Green, J. P. Wisdom, N. Duan, and K. Hoagwood. 2015. "Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research." *Administration and Policy in Mental Health* 42 (5): 533–544. doi:10.1007/s10488-013-0528-y.
- Pan, E., K. Bloomfield, and M. Boyd. 2019. "Resilience, Not Frailty: A Qualitative Study of the Perceptions of Older Adults towards "Frailty"." *International Journal of Older People Nursing* 14 (4): 12261. doi:10.1111/opn.12261.
- Parsons, S., N. Yuill, J. Good, and M. Brosnan. 2020. "Whose Agenda? Who Knows Best? Whose Voice? Co-creating a Technology Research Roadmap with Autism Stakeholders." *Disability & Society* 35 (2): 201–234. doi:10.1080/09687599.2019.1624152.
- Perissinotto, C. M., I. S. Cenzer, and K. E. Covinsky. 2012. "Loneliness in Older Persons: A Predictor of Functional Decline and Death." *Archives of Internal Medicine* 172 (14): 1078–1083. doi:10.1001/archinternmed.2012.1993.
- Rafnsson, S. B., A. Shankar, and A. Steptoe. 2015. "Longitudinal Influences of Social Network Characteristics on Subjective Well-Being of Older Adults: Findings from the ELSA Study." *Journal of Aging and Health* 27 (5): 919–934. doi:10.1177/0898264315572111.

- Randall, W., C. Baldwin, S. McKenzie-Mohr, E. McKim, and D. Furlong. 2015. "Narrative and Resilience: A Comparative Analysis of How Older Adults Story Their Lives." *Journal of Aging Studies* 34: 155–161. doi:10.1016/j.jaging.2015.02.010.
- Sayago, S., B. B. Neves, and B. R. Cowan. 2019. "Voice Assistants and Older People: Some Open Issues." In *Proceedings of the 1st International Conference on Conversational User Interfaces*, 1–3.
- Seale, J. 2019. "Wilderness and Resistance: Illuminating the Digital Inequalities Experienced by Adults with Learning Disabilities between 1970 and 1999." *Disability & Society* 34 (9–10): 1481–1503. doi:10.1080/09687599.2019.1576504.
- Smith, E. M., M. MacLachlan, I. D. Ebuenyi, C. Holloway, and V. Austin. 2021. "Developing Inclusive and Resilient Systems: COVID-19 and Assistive Technology." *Disability & Society* 36 (1): 151–154. doi:10.1080/09687599.2020.1829558.
- Stake, R. E. 2013. *Multiple Case Study Analysis*. New York: Guilford Press.
- Step toe, A., A. Shankar, P. Demakakos, and J. Wardle. 2013. "Social Isolation, Loneliness, and All-Cause Mortality in Older Men and Women." *Proceedings of the National Academy of Sciences of the United States of America* 110 (15): 5797–5801. doi:10.1073/pnas.1219686110.
- The Guardian Newspaper. 2020. "A lifesaver: US seniors turn to Zoom to connect with friends and family." September 18. <https://www.theguardian.com/us-news/2020/sep/18/us-seniors-video-calls-zoom-coronavirus>.
- Think Local Act Personal (TLAP). 2020. "A Telling Experience. Understanding the Impact of Covid-19 on People Who Access Care and Support - A Rapid Evidence Review With Recommendations." <https://www.thinklocalactpersonal.org.uk/covid-19/tlap-insight-group/TIG-report>.
- Valtorta, N. K., M. Kanaan, S. Gilbody, S. Ronzi, and B. Hanratty. 2016. "Loneliness and Social Isolation as Risk Factors for Coronary Heart Disease and Stroke: Systematic Review and Meta-Analysis of Longitudinal Observational Studies." *Heart (British Cardiac Society)* 102 (13): 1009–1016. doi:10.1136/heartjnl-2015-308790.
- Wang, S., K. Bolling, W. Mao, J. Reichstadt, D. Jeste, H. Kim, and C. Nebeker. 2019. "Technology to Support Ageing in Place: Older Adults' Perspectives." *Healthcare* 7 (2): 60. doi:10.3390/healthcare7020060.
- What Works Wellbeing. 2021. "What helped the UK cope with the Covid-19 pandemic and lockdowns". <https://whatworkswellbeing.org/resources/what-helped-the-uk-cope-with-the-covid-19-pandemic-and-lockdowns/>
- Windle, G. 2011. "What is Resilience? A Review and Concept Analysis." *Reviews in Clinical Gerontology* 21 (2): 152–169. doi:10.1017/S095925981000042.
- World Health Organisation (WHO). 2020. "Strengthening Resilience: A Priority Shared by Health 2020 and the Sustainable Development Goals." <https://www.euro.who.int/en/countries/monaco/publications/strengthening-resilience-a-priority-shared-by-health-2020-and-the-sustainable-development-goals-2017>.
- Yin, R. K. 2014. *Case Study Research: Designs and Methods*. 5th ed. London: Sage.