Navigating WeChat in COVID Times as a Chinese Care Home Resident

DORIS ZHANG (iD)

GARY CHEUNG (iD)

SARAH CULLUM (iD)

LILLIAN NG (iD)

*Author affiliations can be found in the back matter of this article

ABSTRACT

Context: In New Zealand, COVID-19-related lockdowns led to the implementation of visiting restrictions in care homes. This placed residents at risk of isolation. The Chinese community is a fast-growing ethnic group and faces additional difficulties, including language and cultural barriers. Information and communication technologies (ICTs) may enhance communication and maintain social connectedness between families and care homes during lockdowns.

Objective(s): To explore the role of technology in the experiences of Chinese care home residents living in New Zealand during three lockdown periods from 2020 to mid-2021.

Method(s): We performed semi-structured interviews with predominantly Chinese individuals (n = 18) across two Chinese-run care homes in Auckland, New Zealand. Participants included residents (n = 6), family members (n = 6) and facility staff (n = 6). Interviews were conducted and transcribed in either English or Mandarin Chinese, then coded and analysed to synthesise themes.

Findings: We identified five themes: (i) an online care home community via WeChat, (ii) benefits of technology, (iii) barriers to technology use, (iv) the infodemic: technology as information overload and (v) the use of technology post-lockdowns.

Limitations: Sample sizes for each sub-group were limited. The generalisability of findings is limited to those with no dementia or mild dementia. Residents with more severe dementia were excluded from the study but might also have benefitted from the intervention.

Implications: The main finding of this study is that WeChat is an effective means of maintaining social connections in the Chinese care home community, particularly when usage is facilitated by staff. We recommend care homes consider using social media platforms to connect residents with the outside world. Sufficient resources, training and staff are needed to advocate for care home residents to be part of a digital community in a way that is culturally relevant.

CORRESPONDING AUTHOR:

Doris Zhang

University of Auckland, NZ

dzha643@aucklanduni.ac.nz

INTRODUCTION

During the COVID-19 pandemic, the use of information and communication technologies (ICTs) increased exponentially. This was particularly true of the aged care sector as facilities were locked down for many months (Elbaz et al., 2021). Such technologies included phone or video calling via telephone, smartphone or tablet, and television-based telemedicine services (Elbaz et al., 2021). This widespread implementation of already-existing technology in the pandemic context has been seen as a large-scale trial of feasibility during an unprecedented time (Knapp et al., 2022).

Technology overcomes various barriers to care faced by in-person services, including staffing issues, geographical barriers and difficulties with mobility in the older population (Knapp et al., 2022). Though the literature has widely discussed the benefits of technology use in an aging population, evidence for the positive effects of ICT use for older adults is limited (Hitch et al., 2017; Noone et al., 2020). ICT use may exacerbate feelings of loneliness in this group as many are unfamiliar with technology or face accessibility issues (Damant et al., 2017; Hung et al., 2021; Pike et al., 2018). Despite this, innovations during the pandemic included the delivery of virtual cognitive group interventions for individuals with dementia and telehealth exercise programmes for older adults with functional limitations (Cheung & Peri, 2020; Middleton et al., 2020). As many countries entered lockdowns across the world, ICT use in healthcare delivery has become key to adapting to an unprecedented time.

New Zealand entered a national lockdown on 25 March 2020 to minimise community transmission of the SARS-CoV-2 virus. Internationally, lockdowns have had a significant impact on social connectedness for older adults living in aged residential care (ARC). Visiting restrictions separated care home residents from their families, placing a vulnerable population at further risk of social isolation (Ayalon & Avidor, 2021; Chee, 2020; Gordon et al., 2020). Care home residents in Israel described their facilities as transformed into a 'prison', and residents in Malaysia expressed feelings of entrapment and disconnection from the outside world (Ayalon & Avidor, 2021; Chee, 2020). In New Zealand, a quantitative study on older adults in ARC found that the first national lockdown affected ethnic groups differently. New Zealand European residents reported more severe depressive symptoms, but Māori and Pacific Peoples were largely unaffected in terms of psychosocial health (Cheung et al., 2021).

In New Zealand, the over-65 population is projected to increase markedly in the next three decades, and nearly half of this group will reside in ARC at some point in their lives (Statistics New Zealand, 2015; Broad et al., 2015). Ethnic minority groups, particularly Asian sub-groups, are ageing faster than their New Zealand European counterparts and contribute to the population of older adults choosing to reside in ARC (Office for Seniors, 2020). Half of all care home residents in New Zealand are diagnosed with dementia, and this is expected to increase further (Central Region Technical Advisory Services Limited, 2019). The prevalence of dementia among the Asian over-65 population is likely to double from 6.9% to 13.3% by 2040 (Ma'u et al., 2021). The impact of lockdowns on the Asian ethnic group has not been previously investigated despite their being the third-largest ethnic group in New Zealand (Statistics New Zealand, 2018). Chinese, the largest subgroup, comprises approximately one-third of the total Asian population (Statistics New Zealand, 2018). The diasporas of this subgroup primarily originate from Mainland China, followed by Taiwan and Malaysia (Liao, 2007). Chinese older adults in New Zealand care homes are at increased risk of social isolation during lockdown periods due to cultural and language barriers as well as a lack of culturally relevant services (Nielsen, 2021; Yeung & Allen, 2020).

The use of ICTs for video conferencing has the potential to enhance communication between families and care homes during lockdowns while also maintaining social connectedness among care home residents (Lai et al., 2020; Zamir et al., 2020). For example, WeChat, a free social media application, is widely used by a large proportion of the Chinese population—including older adults—for instant messaging, voice messaging, voice calling and video calling, along with digital payment services. The aim of this study was to explore the role of technology in the experiences of Chinese care home residents living in New Zealand during three lockdown periods from 2020 to mid-2021. Chinese care home residents' engagement and use of technology in lockdown conditions could demonstrate the role of ICTs in enhancing routine care and mitigating the negative impacts of visiting restrictions on the aged care sector.

METHODS

ETHICS
This study was approved by the Auckland Health Research Ethics Committee (reference number: AH1384; date: 22/06/2020).

SETTING
Auckland is a city located on the North Island of New Zealand and is the most populous urban centre of the country, with a population of 1.7 million. From March 25, 2020, New Zealand has entered several cycles of nationwide lockdowns in 2020 and 2021 in response to the pandemic. These ranged from March to June 2020, August to October 2020, February to March 2021 and

August to December 2021. This study was undertaken from April to June 2021, which was a time when there were minimal restrictions in Auckland. This enabled in-person interviewing in care homes.

RECRUITMENT

In April 2021, the research team contacted the care home managers of two Auckland-based Chinese-run care homes. Both managers were previously known to the research team and were purposively chosen to be included in the study. Invitation emails, participant information sheets and consent forms were circulated among care home residents, family members and facility staff through either e-mail or WeChat, a widely used Chinese social media application. The invitation email contained the inclusion-exclusion criteria for the study, which aided facility staff in identifying potential participants. These documents were written in both English and Chinese.

Chinese residents who resided in one of the two care homes during the COVID-19 lockdowns were eligible to participate in the study, while family member participants were eligible if they were a relative of such a Chinese care home resident. Staff participants who were involved in the care of Chinese care home residents during the lockdown periods were included. Participants fluent in either Mandarin Chinese or English were included in the study, while Cantonese Chinese speakers were excluded from the sample as the first author (DZ) who

interviewed participants spoke only Mandarin Chinese. Care home residents who were unable to give consent or undergo interviewing due to significant cognitive impairment, physical limitations or sensory deficits were also excluded. In our inclusion criteria we did not specify that family members needed to be related to resident participants, given that this was not a requirement in order to provide a family member's perspective of the lockdown experience.

Once the care home managers confirmed the availability of potential participants in their respective facilities, the research team arranged times for interviewing to proceed. The characteristics of the two care homes recruited into this project are summarised below in Table 1.

Informed consent was obtained from participants prior to interviews. The first author conducted interviews using a semi-structured topic guide, which contained questions translated in both English and Chinese.

DATA COLLECTION

We conducted face-to-face interviews with care home residents, family members and staff in English and/or Mandarin Chinese. The interviews were audio-recorded, and field notes were taken immediately after each interview. The first author documented the locations of the interviews, brief descriptions of interviewees and reflections about the interview process, including interruptions and interviewer preconceptions.

	CARE HOME A	CARE HOME B
Ethnicity of Owner	Chinese	Chinese
Level of Care	Dementia Care[1]	Rest Home[2] and Hospital Care[3]
Number of Beds	29	58 in total: 18 at rest home-level care, 40 at hospital level-care
Approximate Number of Chinese Residents (during the 2020 lockdowns)	3	Majority Chinese
Examples of Personnel Available	Registered nurse, healthcare assistants, physiotherapist, diversional therapist, activities co-ordinator, dietitian, chaplain	Registered nurse, healthcare assistants, physiotherapist, diversional therapist, activities co-ordinator, dietitian, chaplain
Level of Security	Digital lock on front gate	Digital lock on front gate
Examples of Activities Available	Art, bingo, board games, pet therapy, entertainment (music, performances), exercises, outings, pastoral care, singing	Art, bingo, board games, pet therapy, entertainment (music, performances), piano, exercises, outings, shopping, pastoral care, singing
Garden	Yes	Yes
Chinese Staff Available (Mandarin or Cantonese)	Yes, but most staff cannot speak Chinese	Yes, most staff can speak Chinese
Details About Meals	Mix of Chinese and Western cuisine	Mix of Chinese and Western cuisine

Table 1 A summary of care home demographics.

[1] For individuals with dementia who have safety concerns or possible behavioural issues. Usually have higher levels of security than a typical care home. [2] For older adults who are largely independent, or only require some assistance with personal care and general day-to-day activities. Many have some degree of cognitive impairment. [3] For older adults with significant disability or medical concerns. Most individuals require the assistance of up to two people for daily activities.

TRANSCRIBING OF INTERVIEWS

Three transcribers, including the first author, transcribed the audio recordings of the interviews verbatim. Every transcript was checked against its respective audio recording to ensure accuracy. Participants who expressed interest in checking their completed transcript were sent a password-encrypted file via e-mail along with scanned consent forms. Revisions were asked to be made within ten days' time, and once they were made, identifying features were removed from the transcripts. The finalised transcripts were uploaded to NVivo 12 for coding.

RESEARCH LENS AND THEMATIC ANALYSIS

The transcripts were coded in their original language without translation via NVivo (DZ, English or Chinese). The research team constructed a coding framework through discussion and themes were synthesised. GC and SC were academic old age psychiatrists and LN was an academic adult psychiatrist. All researchers had prior knowledge of Chinese culture, while DZ, GC and LN were of Chinese descent and offered a Chinese perspective to the interpretation of data. For data analysis, transcripts were sent to participants for member checking. Transcripts were read thoroughly and coded initially by the first author, using an inductive approach (Braun and Clarke, 2006). There were three rounds of coding in total. The other co-authors independently co-coded several transcripts. Two of the authors were bilingual and able to code both English and Chinese transcripts in their original text. An audit trail was documented, containing field work reflections and discussion about the analysis. In total, there were three successive rounds of coding. All authors discussed and refined the coding framework, to interpret wider themes. The final themes were agreed between the four authors.

RESULTS

There were eighteen participants in total: six residents, six family members and six staff members. None of the family members interviewed were related to the resident participants.

The mean age of resident participants was 79 years of age; 50% were married and the other 50% were widowed. Five residents were from Mainland China, one from Hong Kong. Residents had resided in New Zealand for an average of 15 years. One resident undertook their interview in English rather than Mandarin Chinese. All residents were from Care Home B, as residents from Care Home A (a dementia unit) were excluded due to cognitive impairment. Resident participants had resided in care for an average of two and a half years.

Of the family participants, four were the wives of residents and two were the daughters of residents. Half of family participants visited their relative on a daily basis prior to the pandemic. All family participants were from Mainland China and all interviews were conducted in Mandarin Chinese. Except for one participant, the other five family participants were recruited from Care Home B.

All staff were from Mainland China, except for one staff member who was from South Africa. They had spent an average of 5 years at the care home. Two staff members from Care Home A were interviewed in English, while four recruited from Care Home B were interviewed in Mandarin Chinese.

Interviews ranged from 20 minutes to an hour in length. The research team constructed a coding framework and generated themes that were refined after robust discussion between members of the coding team.

THEMES

Five themes were identified: (i) an online care home community via WeChat, (ii) benefits of technology, (iii) barriers to technology use, (iv) the infodemic: technology as information overload and (v) the use of technology post-lockdowns.

Key:
R – Resident participant
F – Family participant
S – Staff participant

Theme 1: Creating a virtual community using WeChat

All participants used the Chinese social media application WeChat to maintain social connections during the lockdown periods. Both Care Home A and B utilised WeChat to form group chats, which would include staff, family members, and occasionally residents. These group chats would range from including a single family, as in Care Home A, or spanning an entire care home community, as in Care Home B.

Care home staff made announcements through these chats, including changes in regulations or rules according to alert level changes:

They updated the chat every time the situation changed, so everyone with a mobile phone can see what we should do. (R2)

This paralleled the New Zealand government's daily press conferences during lockdown periods and was reminiscent of village announcements on loudspeakers in rural Chinese communities overseas:

They're all in one group. WeChat is very good to connect all of them. And they are very free to ask questions there. If they have any concerns, they just put it there. It's very open – it's transparent. (S2)

The use of WeChat fostered an online care home community, where family members were able to ask questions, raise concerns, or see snapshots of the daily life of the care home residents. Family members expressed gratitude and support towards staff. Some residents felt reassured by the daily updates:

The care home is very good. They take photos of residents every day, them eating, doing activities, and post it into the group chat so all the family can see. So, we're put at ease. It's been more than 2 years, so I understand them. We're basically a big family. (F6)

The use of WeChat enhanced relationships between residents, family members and staff. There was a sense of shared experience and knowledge between members of the community:

During lockdown [...] suddenly I felt much closer to the relatives of residents. I felt like we were a sort of family. (S3)

As a widely used application in the global landscape, WeChat also served as a cultural tether connecting participants to the broader, international Chinese community. The application allowed access to a wide range of Chinese media outlets and resources.

Theme 2: Benefits of technology

Video calls were the most common form of direct communication among participants:

I would open up the video call, and then he could see me, I could see him. I would give him a few words of comfort and feel at ease. (F4)

Participants were able to see the faces of their loved ones, hear their voices and communicate in real-time. This provided both family members and residents with reassurance during the lockdowns and mitigated residents' feelings of loneliness:

It resolved my feelings of wanting to see them, if I think of them then I can just use WeChat. (R6)

Staff observed that residents seemed more relaxed after video calls. Many participants found video calls to be simple and convenient and preferred them to phone calls:

It's much easier now, not like when we had to dial a phone number—that was troublesome. Before, when I wanted to phone somewhere in Shanghai,

I had to dial 30 numbers. [...] Now it is much easier. If the other person isn't available, you can even leave a message. (R2)

Through technology, family members could be reached regardless of their location. This was helpful for those who lived far away from the facility, or overseas.

Staff participants observed lower mood in residents who were isolated from their loved ones. Despite resource and time restrictions, staff would prioritise assisting residents with more pressing needs during the lockdowns, such as proactively arranging times for phone calls with family for residents with depression:

Some of our residents are diagnosed with depression, so we would proactively organise times for phone calls with their families. (S3)

In Care Home B, staff began uploading photos and videos to a WeChat group chat daily in order to update family members on the status of residents during the lockdowns.

Theme 3: Barriers to technology use

Not all residents were able to independently perform video calls with their families and required staff support. Staff observed that the use of video of phone calls lifted the spirits of some participants during the lockdowns. There were several factors that contributed to difficulty in utilising technology: an unstable Wi-Fi or slow internet connection, navigating time differences between New Zealand and overseas, and physical, hearing or speech impairments that impeded communication. For example:

He needs someone to help him to video call—his hands can't hold the phone. He needs someone to hold it for him. (F4)

Cognitive impairment was also a barrier: difficulties in understanding the process of video calling and the struggle to recognise loved ones on the screen:

Dementia is a little bit weird. A lot of residents, especially one, couldn't understand... couldn't coordinate or [understand] what the phone meant... they couldn't self-initiate holding it or answering, and that upset the families because their family member couldn't talk to them. (S1)

Some residents had difficulty understanding the pandemic situation. Others struggled to understand how to use the technology or did not have technological devices. Speech impairments meant some residents were limited in communicating their needs to staff:

If I'm here, I know exactly what he wants. I understand his each and every movement. (F5)

For some, the inability to hear their relatives' voices during phone calls caused distress for both residents and family members:

His daughter overseas was very upset because he couldn't hear her when she was speaking on the phone, and he refused to wear any hearing aids. So, it was a lot of distress. (S1)

Family participants were concerned that visiting restrictions placed residents at higher risk of social isolation and loneliness. Availability of staff to assist with the use of technology was a limiting factor as demand outstripped supply. Staff enforced time limits for video calls in order to ensure that multiple residents were given a fair opportunity to contact their families:

Usually we don't provide video chats because we just don't have the time. (S6)

During the lockdowns, video calls needed to be scheduled at specific times. Some staff commented that the WeChat group chat was far from a perfect substitute for in-person interactions. Many members were anonymous and did not have clear identifiable details in their profiles:

Some profiles were written in English and we couldn't remember who it was. Others had profile pictures of flowers or dogs, but not themselves. (S3)

Many staff struggled to identify members and their relationship with residents. Furthermore, responses in the group chat were often not spontaneous and it was difficult for staff to confirm if an announcement had been received.

Theme 4: The infodemic: technology as information overload

There was a flip side to the use of technology; the rise of the 'infodemic', as described by Dr Tedros Ghebreyesus, the Director-General of the World Health Organization. Many residents reported an overload of information about the pandemic. The outside world was perceived as dangerous while the care homes were viewed as a place of relative safety:

I see so many news reports about other countries that have it bad, it makes me so afraid. I'm scared of the virus spreading here in New Zealand, of how it might impact us New Zealanders, my family and me. (R5)

Staff also felt this way:

We just felt so...threatened, by people on the other side of the fence. (S1)

Residents also viewed family members as vulnerable and worried about their safety outside the care home:

I told my daughter, 'You have to be careful.' I told them not to take the kids to places with more people. [...] For us, we don't go out so it's okay, but they still need to go shopping, go to work, go to school, so I'm worried that they might catch the virus. (R5)

Communication through technology reassured some residents about their family's safety.

Theme 5: The use of technology post-lockdowns

Once the lockdowns finished, staff in Care Home B reported that the frequency of technology use returned to the baseline level of usage:

We went back to mainly having face-to-face visits between family and residents. Those who were already used to video calling before lockdown still did so, but those who did not used to just temporarily video called during lockdown, and then went back to in-person visits. (S6)

The uploading of photos became less frequent; individual photos were no longer being taken every day in Care Home B. Staff did not offer video calling as they were too busy to facilitate them. Care Home A reported that they continued to use technology more than in pre-lockdown times, though less so than during the lockdown periods. WeChat was still used but not on a daily basis. Group chat and video calls also lessened as the outside world returned to a new era of normality:

As soon as COVID [ended], everybody went back to work, they've forgotten we're here. Except on weekends. (S1)

DISCUSSION

In this study, we aimed to explore how technology was used and experienced by Chinese care home residents during three lockdown periods from 2020 to mid-2021. We found WeChat group chats were an effective means of enhancing connections between members of a care home community, particularly when technology was facilitated by care home staff. This is an example of how culturally relevant ICTs can benefit older adults of minority

groups. The themes of this study show how technology can support Chinese care home residents during times of isolation by maintaining contact with family members. We found that technology fostered relationships within an online care home community and mitigated isolation. There were barriers to older adults using technology, and increasing use had the potential to overwhelm them with information. The use of technology returned to baseline following the lockdowns.

Family and relationships mitigate loneliness among Chinese older adults (Lou & Ng, 2012). Technology can improve relationships between individuals with dementia and their caregivers as well as increase their quality of life in non-pandemic contexts (Hitch et al., 2017; Hung et al., 2021; Tyack & Camic, 2017). Chinese circles are typically communal, and network in culturally specific ways, such as Tai Chi, a form of martial art popular among Chinese older adults (Dong et al., 2010). Group participation in WeChat, a Chinese online platform, was an alternative form of networking. Though literature prior to the pandemic has suggested that older adults may prefer to use ICTs for social connection rather than information gathering (Sims et al., 2017), digital literacy is protective against pandemic anxiety in the general population and may help people to better comprehend COVID-19-related information (Robinson et al., 2021). Digital literacy may also reduce cognitive decline and reduce impairments in instrumental activities of daily living (IADL) among older adults (d'Orsi et al., 2014; Xavier et al., 2014). ICTs have the potential to benefit older adults not only during lockdowns but also routinely.

Our study found that video calling was preferred by residents when using technology. Several resident participants reported difficulty in remembering and dialling phone numbers as well as a lack of visual and auditory stimulation when using telephones, compared to video calls. Videoconferencing is preferred over telephone consultations for delivering telemedicine for persons with dementia during the pandemic (Lai et al., 2020). Sacco et al. (2020) found that while institutionalised older adults tended to use telephone calls more independently than video calls, they were more satisfied with video calls when assistance was provided by caregivers or staff.

This study is an example of how pandemic restrictions necessitated adaptations to using technology. Chinese care home residents used various technology independently, despite common perceptions of older adults as having poor digital literacy. Additional staff support enabled technology use for less independent residents but was limited by a lack of staffing and resources. Previous studies have shown that it is possible for cognitively impaired older adults to utilise technology if devices are available and there is support from family and professionals (Ganeshan et al., 2021; Hackett et al., 2022; Yurkewich et al., 2022). Other barriers identified include issues of resident confidentiality and lack of familiarity with technology among care home staff (Hung et al., 2021). In Chinese care homes, there may be a close-knit and collective community, with the potential to breach privacy. Compared to Western societies that value individualism and clear boundaries, personal privacy is a relatively foreign concept among Chinese circles. Staff must be aware that informed consent should be obtained prior to sharing photos and personal information of residents through social media.

Staff observed that cognitively impaired residents struggled to use technology. ICTs can be used in combination with existing interventions to benefit specific groups in the care home community for which it is appropriate (Knapp et al., 2022). Even in non-pandemic contexts, the acceptance of technology by older adults is influenced by perceptions of personal proficiency in utilising technology as well as the properties of the technology itself (Peek et al., 2016). These areas should be targeted to allow older adults to cross the digital divide and access the benefits of technology. Assessment tools may identify residents with higher support needs or those who would benefit the most from technology, as well as optimise the allocation of resources (Peri et al., 2022). Training programmes can both improve digital skills and reduce anxiety associated with technology use in older adults (Miwa et al., 2017). Current initiatives in New Zealand include the 'Stepping UP' programme, where older adults can participate in a range of free community classes to learn digital skills. Private technology companies such as Spritely have created age-friendly products catered for older adults. Policy and decision-makers can support these existing initiatives and implement new programmes on a large-scale (Martins van Jaarsveld, 2020), including making them available in the care home setting. This support would improve access for minority groups, where many individuals have English as their second language. Specific ethnic groups have different needs and technological preferences. Our participants preferred the Chinese application, WeChat, over Western alternatives such as Facebook. The incorporation of familiar Chinese applications and resources would shape such programmes into a more culturally relevant and appropriate fit for the Chinese older adult population, as would a similar approach for other ethnic groups.

Our Chinese resident participants maintained social connections using WeChat and many were able to use such technology independently. They were contributing members of their community and participated in the online sharing of critical COVID-19 related information and dialogue. Supporting care home residents in utilising technology independently shifts the conventional

portrayal of older adults as passive victims of adversity (Morgan et al., 2021). This applies to the integration of technology into routine practice as well as during lockdowns. The aged care sector can adopt an inclusive approach to technology use in the older population and support residents as contributing members of the wider society (Morgan et al., 2021).

STUDY STRENGTHS AND LIMITATIONS

Interviews were conducted in person, which allowed for a more personal interviewing experience for participants to express themselves freely. The first author was fluent in both English and Mandarin Chinese and was able to interview participants in their preferred language, allowing her to build rapport. Reflexivity was enhanced by documenting thorough field notes after each interview. All interview transcripts were double-checked against the original audio file to ensure accuracy and were checked by willing participants. The first author was involved in data collection, transcription, coding and analysis, which provided consistency in data handling. The data was co-coded by three additional coders, two of whom were of Chinese descent. This allowed for nuanced discussion around the data. The inclusion of three groups of interviewees allowed for triangulation which contrasted experiences.

Limitations included the sample size for each sub-group. The majority of interviews were conducted in Care Home B. Residents with severe dementia were excluded from the study. The transferability of findings to other contexts may be a limitation. The study explored three lockdown periods in 2020, whereas subsequent lockdowns may have presented different experiences than the 2020 counterpart, due to lockdown fatigue and the presence of the infectious delta and omicron variants.

CONCLUSION

Pandemic conditions have necessitated a shift towards technology use in care homes and highlighted the changing role of technology in enhancing social connection. We recommend care homes consider using social media platforms to connect residents with the outside world and enable their participation in the digital world. The aged care sector can advocate for older adults in the digital community by identifying those in higher need by using assessment tools and ensuring care homes are supported with sufficient resources, training and staffing numbers. Culturally relevant forms of technology can benefit older adults in minority groups. More innovative incorporation of technology may improve care for older adults of other ethnicities.

COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR AFFILIATIONS

Doris Zhang orcid.org/0000-0002-7008-6415
University of Auckland, NZ

Gary Cheung orcid.org/0000-0002-0239-9356
University of Auckland, NZ

Sarah Cullum orcid.org/0000-0003-0785-9101
University of Auckland, NZ

Lillian Ng orcid.org/0000-0002-7189-1272
University of Auckland, NZ

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