

Social Constructs of Frailty Among Older People in Hong Kong: Qualitative Insights from a Co-Designed Workshop

Jed Montayre

jed-ray.montayre@polyu.edu.hk

The Hong Kong Polytechnic University

Kay Kuo

The Hong Kong Polytechnic University

Ka Man Carman Leung

The Hong Kong Polytechnic University

Chun Hei Cheng

The Hong Kong Polytechnic University

Research Article

Keywords: Social frailty, Older People, Hong Kong, Social engagement, Well-being, Qualitative study

Posted Date: June 2nd, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-9745120/v1>

License:   This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Additional Declarations: No competing interests reported.

Abstract

Background:

Social frailty among older adults involves the loss of resources essential for physical, mental, and social well-being. In Hong Kong, where 40% of the population is projected to be over 65 by 2050, this issue is intensified by high population density, limited housing, and busy lifestyles. Key neglected activities include visiting friends, seeking advice, and dining with others. This study aimed to explore the constructs of social frailty most relevant to older adults in Hong Kong and co-design actionable strategies to enhance their social well-being.

Methods:

The study utilized a qualitative design involving co-designed workshops with thirty-seven older adults (26 females, 11 males; ages 61–77; mean: 67.57 ± 4.30) participating in semi-structured focus group discussions. These discussions focused on three themes: connecting with friends, seeking support, and dining with others. Open-ended questions were employed to gather insights, which were analyzed using thematic analysis.

Results:

The analysis identified three key insights: (1) Social connections were valued but limited to planned occasions due to small living spaces and privacy concerns, leading to a preference for outdoor or virtual interactions. (2) While trusted individuals were important for support, participants often sought solutions independently. (3) Dining was largely spontaneous, influenced by schedules and preferences, with many favoring the flexibility of eating alone. Participants co-designed strategies such as technology training, group activities, and emotional support systems.

Conclusions:

Social frailty among older adults in Hong Kong is shaped by cultural and contextual factors. Effective interventions must be tailored to their preferences, promoting virtual connections and enhancing community engagement.

1. Background

Aging is inherently a social process, heavily influenced by an individual's lifelong exposure to cultures and communities, access to resources (e.g., economic and social reserves), and responses to life events such as health challenges [1]. Aging experience is largely socially determined, including older adults' vulnerability and levels of frailty. Frailty in older adults is multifaceted and often involves physical decline,

cognitive impairment, and social vulnerability, which significantly affect well-being [2]. Addressing social frailty is complex because it can serve as both a precursor to and a consequence of physical and cognitive frailties [3, 4].

Social frailty is the loss or lack of resources needed to maintain a healthy physical and mental state [5, 6]. Such resources include general resources (socio-economic status), social resources (living situation and social network size), social behaviors and activities (social participation), and social need fulfillment (regular interaction with social networks and social support) [7]. Tools for assessing social frailty vary. A recent study indicates that the most common questions examine social resources (e.g., frequency of visiting friends, having someone to rely on or seek advice from, feelings of loneliness), social behaviors and activities (e.g., eating with others, neighborhood engagement, attendance events), and sense of purpose (e.g., perceived contributions to others) [8].

Hong Kong is expected to have one of the largest aging populations by 2050, with about 40% of residents over 65 [9]. High population density, limited housing space, intense work pressure, and high living costs may leave many with little time or energy to connect with older family members [11]. Chow et al. (2024) [12] also reported elevated loneliness levels among Hong Kong older adults. Recent findings show that 34.5% and 24% of older adults in Hong Kong are pre-frail and socially frail, respectively, significantly higher than the rates for older adults in Singapore (28.8% and 7.4%) [13, 14]. Thus, frailty is a pressing concern, considering the association of social frailty with increased mortality risk and physical frailty [15, 16].

A local study by Montayre et al. (2024) [13] used the Social Frailty Scale – 8 items (SFS-8) and found that social frailty in Hong Kong often arose from the lack of three activities: having friends to visit, turning to family or friends for advice, and eating with someone at least once a day. Fewer face-to-face encounters can negatively affect older adults' cognitive and emotional health [17, 18]. Lacking a reliable support network can hinder resilience and mental well-being [19–20]. Meanwhile, dining alone is associated with social isolation and nutrition risks [21–23].

Despite its impact on older adults, social frailty is rarely discussed in Hong Kong. This study thus focuses on three neglected activities: “visiting friends,” “seeking advice,” and “eating with someone at least once a day.” Through a co-designed qualitative workshop, we sought to identify ways to fulfill older adults' social needs and develop a framework for preventing or slowing down social frailty among older people in Hong Kong.

2. Methods

2.1 Research Design and Participants

This study used a qualitative approach to investigate factors contributing to social frailty among Hong Kong older adults and to propose potential strategies to improve social interaction. Participants were recruited from a previous study who were aged more than 50, Hong Kong residents, and able to speak

and understand Cantonese. One hundred forty-five older adults expressed interest in joining a co-design workshop from survey feedback. We then sent email invitations after finalizing the workshop time and location; 40 responded. Three were absent on the day, resulting in 37 participants attending the workshop. The sample included 26 females and 11 males, ages 61 to 77 (mean: 67.57 ± 4.30).

2.2 Description of Focus Group

Focus groups were held in a conference room at a University. Participants were divided into two sessions, each containing three separate groups (5–6 participants per group). Each session involved a 50-minute semi-structured group discussion and a 10-minute group sharing. All workshops were moderated in Cantonese, recorded, and transcribed verbatim for analysis.

2.2.1 Focus Group Discussion and Group Sharing

We identified three main behaviors neglected by older adults facing social frailty in Hong Kong: connecting with friends, seeking support from others, and sharing meals. These were the central themes of the discussion. We designed three guiding questions for each topic to explore participants’ daily routines and challenges (Table 1). Questions started with simple yes/no prompts and moved to open-ended discussion. In the final 10 minutes of each session, a group representative summarized the insights for all participants.

Table 1
Focus Group Topic Questions

Topic 1: Connecting with friends
1. Do you often visit friends? How frequently do you visit friends?
2. If not often, what prevents you from visiting friends?
3. What methods could encourage you to visit friends more frequently?
Topic 2: Seeking support from others
1. When you have problems, do you seek advice from family or friends?
2. If you need to seek advice from others, how would you go about it?
3. What services or assistance do you think society or institutions could provide?
Topic 3: Sharing meals with others
1. Do you often eat alone?
2. If yes, what causes you to frequently eat alone?
3. What can you or society do to encourage you to eat with others more often?

2.3 Data Analysis

With informed consent, all focus group discussions were audio-recorded. Three moderators noted key during the sessions. Recordings were transcribed and translated into English, then analyzed using thematic analysis [24]. This process involved identifying central ideas, coding data by themes, and synthesizing commonalities and differences.

3. Results

Three social frailty components were the focus: having friends, having a support person, and the eating experience. The co-designed workshop confirmed their relevance to older adults in Hong Kong but also showed important cultural and socio-economic nuances. The themes identified were labeled “visiting friends, the Hong Kong way,” “the designated ‘go-to’ person,” and “dining together is random rather than planned.”

3.1 Visiting friends, the Hong Kong Way

Most participants reported regular contact with friends or acquaintances, more than twice a week, but not always through in-person visits. Many felt that small living spaces and privacy concerns made hosting friends at home inconvenient, so they often met in public places or used video calls. Personal visits tended to be reserved for meaningful occasions:

Participant 1, Participant 2 *“I usually visit friends or family members on holidays or birthdays to share joy and best wishes.”*

These visits were also influenced by small living spaces that may not be comfortable for everyone:

Participant 3, Participant 4, Participant 5 *“Due to small living spaces and privacy concerns, visits from friends may inconvenience other family members.”*

Many older adults preferred outdoor activities like hiking or dining out. Participants also noted the use of video calls to stay connected. They agreed that remaining in touch with friends was important.

3.2 The Designated ‘Go-To’ Person’

Participants said immediate support networks matter most. A support person is they can consult for various needs. They often ask advice from the same person about different topics, helping with daily routines or decisions. However, participants clearly stated they try to solve issues themselves first by gathering information online before asking for help. One participant said:

Participant 6, Participant 7, Participant 8 *“I usually try to solve problems myself first by searching online. If I can’t find a solution or need support from friends or family, I then ask for help.”*

Several participants mentioned seeking emotional support, which helps them express their feelings. A trusting link makes it easier to listen to advice. One participant asked family members for help with technology:

Participants, who use various APP, like WhatsApp, said, “I don’t know how to use the new phone, so I asked my daughter to help me install useful apps, like WhatsApp, and teach me how to use them.”

Older participants valued autonomy in decision-making, but they still needed trusted individuals for certain topics, especially health matters.

3.3 Dining Together is Random than Planned

Participants reported that dining with others usually depended on time and the availability of family or friends. While many ate out with others, this was rarely planned. Some participants said conflicting work schedules or different diets made shared meals difficult. One participant said:

Participant, who is a vegetarian, said, “Because friends finish work late or live far away, it’s not easy to go home afterward, so we don’t dine together often. My daughter is a vegetarian, so we also don’t eat together frequently.”

Others found making reservations or aligning free time difficult:

Participant, who is a vegetarian, said, “Asking others to dine with me is a hassle because some restaurants require reservations and have limited dining hours, and friends may not be available. I enjoy eating at home because restaurants are expensive and not very tasty.”

Many participants said eating alone fit their schedules and avoided the stress of matching others’ preferences:

Participant, who is a vegetarian, said, “The reason I eat alone more often is that I can choose my mealtimes, and I don’t have to accommodate other people’s tastes; I can do whatever I want.”

Though mealtimes could be social opportunities, busy schedules and logistics meant shared meals happened sporadically.

3.4 Recommendations from the co-design workshop

After discussing these three social constructs, older adults in the co-designed workshop offered direct suggestions (Table 2). They proposed active activities (e.g., singing, dancing, hiking) and “static” activities (e.g., crafts) to help them connect with friends. They emphasized improving community support, technology training, and meal promotions that encourage group dining. They also mentioned solutions like home visits for emotional support and phone or video calls to maintain social connections.

Table 2
Recommendations from the Co-Designed Workshop

Concept	What can be done to address the issues identified?
Connecting with friends	
Active activities	Singing, dancing, hiking, volunteering, religious activities, visiting churches, dining together.
Static activities	Activities convenient for seniors to participate in, allowing them to share thoughts and interact.
Providing support	Visiting sick or immobile friends, helping, or accompanying them to the doctor.
Rebuilding connections	Meeting old friends, reconnecting with former colleagues and classmates
Building new connections	Introducing friends to each other to expand social circles.
Shared hobbies	Exercising, watching movies, and photography.
Traveling	Organizing travel tours, such as trips to mainland China.
Interest classes	Engaging with elderly centers, the Jockey Club, and NGOs via email.
Discount events	Free or discounted museum access.
Emotional support	Having someone who can provide a positive mindset when feeling down.
Available support person	
Increasing connection	Regular calls, home visits, home-based services.
Information sharing	Access to resources (prices, services) via care centers, hospitals, social workers, volunteers, websites.
Workshops	Financial management, life planning, crafts for socializing.
Boosting manpower	More staff at healthcare centers, including social workers and volunteers.
Support centers	Offering consultation, answering queries, emotional support, IT help.
Medical support	Addressing medical inquiries, meeting needs, supporting doctor visits.
Technology training	Using smartphones, Zoom, ChatGPT, raising cybersecurity awareness
Social worker training	Focusing on compassion and patience to mend relationships with families.
App development	Devices to locate older adults if missing, chat apps for events or information.
Promoting activities	Encouraging participation in healthcare center programs.

Concept	What can be done to address the issues identified?
Creating a friendly Environment	Ensuring wheelchair access in public spaces.
Sharing meals with someone	
Promotion	Buy 2 get 1 free, cheap canteen options.
Activities	Religious groups, food gatherings.
Interesting locations	Restaurants with appealing meals, live bands, dancing.
Tours	Sightseeing and dining experiences.
Motivation	Celebrating birthdays.
Booking system	User-friendly for older people.
Cooking Courses	Shared spaces for cooking and preparing meals together.

4. Discussion

This qualitative study presents insights from older participants on three social frailty constructs identified in prior research: "connecting with friends," "having a go-to person," and "dining with others." The co-designed workshop highlights cultural and contextual nuances influencing these activities among older people in Hong Kong.

Social connections, especially friendships, are essential for older adults. However, participants emphasized that contact need not always be face-to-face. While face-to-face socialization is the norm and provides a better sense of connection, participants in the study emphasized that other means can also facilitate socialization [25, 26]. The pandemic necessitated virtual personal meetings through teleconferencing, which have continued to be commonplace even after the pandemic. The study's emphasis on virtual means of staying socially connected with friends has significant implications for how we think about social frailty interventions. Older adults with the technical skills to navigate these technologies may experience favorable outcomes [27]. While alternative means of connection were highlighted in this study, one aspect that older people mentioned as particularly important is personal visits during special occasions, such as traditional holidays and celebrations. These findings offer a unique perspective, as they have implications for ensuring that age-friendly measures are in place during these periods. Older people must have smooth access to facilities, such as transportation, that are accessible and responsive to their needs as they mobilize and travel. Some European countries have offered solutions and considerations for older people visiting loved ones and friends during holidays, referred to as 'age-friendly tourism', where accessibility and mobility challenges are being addressed [28]. Ensuring older people can socialize and access facilities during special occasions to visit friends is an important insight supported by participants' narratives in this study. Providing the mechanisms for this social interface will be meaningful for older adults' ability to connect and socialize with friends.

Regarding support networks, the participants were satisfied and confident with the support they usually receive from immediate family members. Participants spoke about having a designated supporter or adviser for specific issues, such as seeking information on health-related matters they encounter. However, it is worth noting that participants prefer to obtain information independently and solve issues independently. Older people in this study value their ability to maintain autonomy in decision-making; however, this can be hindered when information-seeking is unsuccessful. Older people commonly obtain information through printed outlets and broadcast media [29]. Seeking information from the internet is also a common practice but may not apply to all older people, depending on their technical competency. Some studies have mentioned an initiative involving a common platform to provide daily information for older people, such as shopping, banking, and other everyday activities. These digital platforms are helpful; however, they expose disadvantaged groups who might not have access to this technology [30, 31].

Dining with someone is one of the social activities that older adults in Hong Kong expect to happen spontaneously rather than as a planned event. Older people mentioned that although they are joined by family members during mealtimes, these gatherings are not scheduled due to work commitments. The experience of eating with someone has become a significant indicator of various social issues, such as social isolation and loneliness [32]. In some Western societies, where single households are becoming more common, eating alone does not always indicate social vulnerabilities. In fact, some view solo activities as an expression of independence and autonomy [33]. However, in some collectivist Asian cultures, like Hong Kong, where family sharing, especially at mealtimes, is important, it is noteworthy that not all participants in the current study expect to dine together. This suggests a possible shift in family expectations regarding togetherness through meals.

The co-designed workshop produced recommendations for improving social connections and support for older adults. Many recommendations reflected technical and social interventions at various engagement levels (active or static). The focus on shared interests, learning new skills, and promoting healthy aging aligns with broader discussions on functional abilities [1]. Participants supported technology as a tool to address social isolation but emphasized the need for interventions that integrate smoothly into their daily routines.

5. Limitation

Because participants were recruited from a previous online study, older adults less familiar with digital tools and at higher risk for social frailty were underrepresented (Hwang & Hwang, 2025). Workshop attendance required travel to the host campus, likely excluding individuals with mobility challenges. Future studies could incorporate online or home-based approaches to improve participation and capture more diverse viewpoints. The sample size and female predominance also limit the broader applicability of these findings. Finally, differences in moderators' engagement styles introduced variability in group discussions. Standardized facilitation could improve the reliability and comparability of future data.

6. Conclusions

This study examines how busy lifestyles, limited space, and cultural norms influence social frailty among older adults in Hong Kong. Although participants valued independence, they also welcomed assistance with health and emotional needs. Recommendations for fostering social engagement, such as accessible activities, technology training, and robust support systems, indicate promising pathways to mitigate social frailty. Future interventions should emphasize inclusivity, technology access, and cultural sensitivity to enhance well-being and reduce social frailty among older populations.

Declarations

Ethics approval and consent to participate:

This study received ethical approval from the Institutional Review Board at The Hong Kong Polytechnic University in 12 October 2023, with the reference number: HSEARS20231011007. Participants were provided with a Participant Information Sheet (PIS) containing specific details of the study and informed consent was obtained.

Consent for publication:

The dataset analysed in this study does not disclose any personally identifiable information, consent for publication was not required.

Competing interests:

The authors report there are no competing interests to declare.

Funding statement:

No funding was received for this research.

Author Contribution

Conceptualization, J.M.; methodology, K.K., K.M.C.L., and C.H.C.; formal analysis, K.K., K.M.C.L.; data curation, K.K., K.M.C.L.; writing—original draft preparation, K.K., K.M.C.L., writing—review and editing, J.M., K.K., K.M.C.L., and C.H.C.; supervision, J.M.; project administration, J.M. All authors have read and agreed to the published version of the manuscript.

References

1. WHO. Ageing and health. Available online: <https://www.who.int/news-room/factsheets/detail/ageing-and-health>

2. Tsutsumimoto K, Doi T, Makizako H, Hotta R, Nakakubo S, Makino K, Suzuki T, Shimada H. Association of social frailty with both cognitive and physical deficits among older people. *J Am Med Dir Assoc*. 2017;18:603–7. <https://doi.org/10.1016/j.jamda.2017.02.004>.
3. Ko Y, Choi K. Exploring the role of social factors in cognitive frailty among South Korean older adults. *Healthcare*. 2024;12:1394. <https://doi.org/10.3390/healthcare12141394>.
4. Hironaka S, Kugimiya Y, Watanabe Y, Motokawa K, Hirano H, Kawai H, Kera T, Kojima M, Fujiwara Y, Ihara K, Kim H, Obuchi S, Kakinoki Y. Association between oral, social, and physical frailty in community-dwelling older adults. *Arch Gerontol Geriatr*. 2020;89:104105. <https://doi.org/10.1016/j.archger.2020.104105>.
5. Montayre J. What is social frailty? *Australas J Ageing*. 2024;43:234–5. <https://doi.org/10.1111/ajag.13347>.
6. Miyata H, Maruta M, Makizako H, Han G, Ikeda Y, Nakamura A, Tokuda K, Shimokihara S, Akaida S, Hidaka Y, Akasaki Y, Kubozono T, Ohishi M, Tabira T. Association between satisfaction with meaningful activities and social frailty in community-dwelling Japanese older adults. *Arch Gerontol Geriatr*. 2022;100:104665. <https://doi.org/10.1016/j.archger.2022.104665>.
7. Bunt S, Steverink N, Olthof J, van der Schans CP, Hobbelen JSM. Social frailty in older adults: a scoping review. *Eur J Ageing*. 2017;14:323–34. <https://doi.org/10.1007/s10433-017-0414-7>.
8. Montayre J, Kuo K, Leung KMC, Zhao I. Measuring social frailty: a scoping review of available scales and tools. *Gerontologist*. 2024;64(10). <https://doi.org/10.1093/geront/gnae114>.
9. Richter F. The world's oldest populations. World Economic Forum. Available online: <https://www.weforum.org/stories/2023/02/world-oldest-populations-asia-health/>
10. Chan SM, Wong H, Chung RY, Au Yeung TC. Association of living density with anxiety and stress: a cross sectional population study in Hong Kong. *Health Soc Care Community*. 2020;29:4. <https://doi.org/10.1111/hsc.13136>.
11. Chiu MYL, Leung CLK, Li BKK, Yeung D, Lo TW. Family caregiving during the COVID-19 pandemic: factors associated with anxiety and depression of carers for community-dwelling older adults in Hong Kong. *BMC Geriatr*. 2022;22(1). <https://doi.org/10.1186/s12877-021-02741-6>.
12. Chow SKY, Wong FMF, Choi EKY. Loneliness in old age, the related factors, and its association with demographics and districts of residence. *Int J Environ Res Public Health*. 2021;18:9398. <https://doi.org/10.3390/ijerph18179398>.
13. Montayre J, Kuo K, Leung KMC. Social frailty prevalence among older people in Hong Kong. *J Ageing Longev*. 2024;4:225–33. <https://doi.org/10.3390/jal4030016>.
14. Pek K, Chew J, Lim JP, Yew S, Tan CN, Yeo A, Ding YY, Lim WS. Social frailty is independently associated with mood, nutrition, physical performance, and physical activity: insights from a theory-guided approach. *Int J Environ Res Public Health*. 2020;17:4239. <https://doi.org/10.3390/ijerph17124239>.
15. Garre Olmo J, Calvó Perxas L, López Pousa S, de Gracia Blanco M, Vilalta Franch J. Prevalence of frailty phenotypes and risk of mortality in a community-dwelling elderly cohort. *Age Ageing*.

- 2013;42:46–51. <https://doi.org/10.1093/ageing/afs047>.
16. Makizako H, Shimada H, Doi T, Tsutsumimoto K, Hotta R, Nakakubo S, Makino K, Lee S. Social frailty leads to the development of physical frailty among physically non-frail adults: a four-year follow-up longitudinal cohort study. *Int J Environ Res Public Health*. 2018;15:490. <https://doi.org/10.3390/ijerph15030490>.
 17. Antonucci TC, Ajrouch KJ, Birditt KS. The convoy model: explaining social relations from a multidisciplinary perspective. *Gerontologist*. 2014;54:82–92. <https://doi.org/10.1093/geront/gnt118>.
 18. Cooney A, Dowling M, Gannon ME, Dempsey L, Murphy K. Exploration of the meaning of connectedness for older people in long-term care in context of their quality of life: a review and commentary. *Int J Older People Nurs*. 2014;9:192–9. <https://doi.org/10.1111/opn.12017>.
 19. Pruchno RA, Wilson Genderson M, Rose M, Cartwright F. Successful aging: early influences and contemporary characteristics. *Gerontologist*. 2010;50:821–33. <https://doi.org/10.1093/geront/gnq041>.
 20. Werner Seidler A, Afzali MH, Chapman C, Sunderland M, Slade T. The relationship between social support networks and depression in the 2007 National Survey of Mental Health and Wellbeing. *Soc Psychiatry Psychiatr Epidemiol*. 2017;52:1463–73. <https://doi.org/10.1007/s00127-017-1440-7>.
 21. Thomas J. Measuring national well being: insights into loneliness, older people and well being, 2015. Office for National Statistics. Available online: <https://www.ons.gov.uk/peoplepopulationandcommunity/well-being/articles/measuringnationalwell-being/2015-10-01>
 22. Thomas N, Emond R. Living alone but eating together: exploring lunch clubs as a dining out experience. *Appetite*. 2017;119:34–40. <https://doi.org/10.1016/j.appet.2017.03.003>.
 23. Vesnaver E, Keller HH. Social influences and eating behavior in later life: a review. *J Nutr Gerontol Geriatr*. 2011;30:2–23. <https://doi.org/10.1080/01639366.2011.545038>.
 24. Terry G, Hayfield N, Clarke V, Braun V. Thematic analysis. In: *The SAGE Handbook of Qualitative Research in Psychology*. 2017. pp. 17–36.
 25. Liang N, Grayson SJ, Kussman MA, Mildner JN, Tamir DI. In-person and virtual social interactions improve well-being during the COVID-19 pandemic. *Comput Hum Behav Rep*. 2024;15:100455. <https://doi.org/10.1016/j.chbr.2024.100455>.
 26. Sacco DF, Ismail MM. Social belongingness satisfaction as a function of interaction medium: face to face interactions facilitate greater social belonging and interaction enjoyment compared to instant messaging. *Comput Hum Behav*. 2014;36:359–64. <https://doi.org/10.1016/j.chb.2014.04.004>.
 27. Chopik WJ. The benefits of social technology use among older adults are mediated by reduced loneliness. *Cyberpsychol Behav Soc Netw*. 2016;19:551–6. <https://doi.org/10.1089/cyber.2016.015>.
 28. Van Staaldin W, Ferri Sanz M, Valía Cotanda E, Garcés J, Klironomos I, Rallu L, García J, Dantas C. Age-friendly tourism: EIP on AHA: Action Group D4 Age-friendly cities, buildings and

- environments. Available online: <https://futurium.ec.europa.eu/sites/default/files/2021-10/Age-friendly%20tourism.pdf>
29. Age Friendly World. Communication and information. Available online: <https://extranet.who.int/agefriendlyworld/age-friendly-practices/communication-and-information/>
 30. Finkelstein R, Wu Y, Brennan Ing M. Older adults' experiences with using information and communication technology and tech support services in New York City: findings and recommendations for post-pandemic digital pedagogy for older adults. *Front Psychol.* 2023;14. <https://doi.org/10.3389/fpsyg.2023.1129512>.
 31. United Nations. Digital technologies can help older persons maintain healthy, productive lives. United Nations. Available online: <https://www.un.org/en/un-chronicle/digital-technologies-can-help-older-persons-maintain-healthy-productive-lives>
 32. Hanna K, Cross J, Nicholls A, Gallegos D. The association between loneliness or social isolation and food and eating behaviours: a scoping review. *Appetite.* 2023;191:107051. <https://doi.org/10.1016/j.appet.2023.107051>.
 33. Whitelock E, Ensaff H. On your own: older adults' food choice and dietary habits. *Nutrients.* 2018;10:413. <https://doi.org/10.3390/nu10040413>.
 34. Hwang M, Hwang Y. Associations between social frailty, use of digital device and depression among community-dwelling older adults: a population-based cross-sectional study. *Geriatr Gerontol Int.* 2025;25(3):434–41. <https://doi.org/10.1111/ggi.70005>.