

Exploring issues of resilience and technology use for older people - A scoping review protocol

Explorando questões de resiliência no uso de tecnologia em idosos - Protocolo de revisão de escopo

Exploracion de problemas de resiliencia y uso de tecnologia para personas mayores – Un protocol de revision de alcance

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Abstract

The aim of this scoping review is to understand the extent of issues of resilience implied by the interactions of older people with financial, social, and health related technologies. Older people aged 60+, technology use or non-use, and issues of resilience studied over the last four years (2019-2022) demarcate the scope of this review. Key exclusion criteria are older adults living in long-term care facilities, nursing homes, care homes and hospital in-patients. It also excludes studies on the perspectives of older peoples' clinicians. The review will be carried out according to the Joanna Briggs Institute (JBI) scoping review methodology. The key information sources are SCOPUS, Web of Science, CINAHL, PsychINFO, and MEDLINE databases. The forms of grey literature included are reports from government and non-government organizations, as well as studies from the ProQuest Dissertations & Theses - Global database. The search is limited to studies written in English. For the first step in the search strategy, keywords and index terms will be identified via SCOPUS, Web of Science, and MEDLINE databases. This is followed by a search via the above databases. Third, a search of the reference lists of all included articles will form part of the full-text screening process. Two researchers will independently screen the titles and abstracts of the literature and then read the full text of the included literature, applying the inclusion criteria and searching reference lists. All data will be presented in tables and charts to answer the review question.

Keywords: Older adults; Seniors; Technology use; COVID-19; Resilience.

Resumo

O objetivo desta revisão de escopo é entender a extensão das questões de resiliência implícitas pelas interações dos idosos com tecnologias financeiras, sociais e relacionadas à saúde. O escopo desta revisão é demarcado por idosos com mais de 60 anos, o uso ou não de tecnologia e questões de resiliência estudadas durante um período de quatro anos (2019-2022). Os principais critérios de exclusão são os idosos que vivem em instituições de longa permanência, asilos, lares de idosos e pacientes internados em hospitais. Também excluí estudos sobre as perspectivas dos médicos geriatras. A revisão será realizada de acordo com a metodologia da Joanna Briggs Institute (JBI) e as principais fontes de informação são dos bancos de dados da SCOPUS, Web of Science, CINAHL, PsychINFO e MEDLINE. A literatura semi publicada incluirá relatórios de organizações governamentais e não governamentais, bem como estudos do Proquest Dissertations & Theses - Banco de dados global. A pesquisa limita-se a estudos escritos em inglês. Primeiramente, para a estratégia de pesquisa, as palavras-chave e termos de índice serão identificados via SCOPUS,

Web of Science e MEDLINE. Em segundo lugar, será realizada a busca através dos bancos de dados citados acima. Em terceiro lugar, uma pesquisa nas listas de referência de todos os artigos incluídos fará parte do processo de examinação do texto completo. Dois pesquisadores exibirão independentemente os títulos e resumos do estudo. Então, dois pesquisadores irão independentemente ler o texto completo do estudo, aplicando os critérios de inclusão e pesquisando as listas de referência. Os dados serão apresentados em tabelas e gráficos para responder à pergunta de revisão.

Palavras-chave: Idosos; Uso de tecnologia; COVID-19; Resiliência.

Resumen

El objetivo de esta revisión de alcance es comprender el alcance de los problemas de resiliencia que implican las interacciones de las personas mayores con las tecnologías financieras, sociales y relacionadas con la salud. Las personas mayores de 60 años o más, el uso o no de tecnología y los problemas de resiliencia estudiados durante los últimos cuatro años (2019-2022) delimitan el alcance de esta revisión. Los criterios de exclusión son adultos mayores que viven en centros de atención a largo plazo, hogares de ancianos, residencias y pacientes hospitalizados. También excluye los estudios sobre las perspectivas de los médicos de personas mayores. La revisión se llevará a cabo de acuerdo con la metodología de revisión de alcance del Instituto Joanna Briggs (JBI). Las fuentes de información importantes son las bases de datos SCOPUS, Web of Science, CINAHL, PsychINFO y MEDLINE. La literatura gris incluirá informes de organizaciones gubernamentales y no gubernamentales, así como estudios de la base de datos Proquest Dissertations & Theses - Global. La búsqueda se limita a estudios escritos en inglés. Primero, para la estrategia de búsqueda, las palabras clave y los términos del índice se identificarán a través de SCOPUS, Web of Science y MEDLINE. En Segundo lugar, realice la búsqueda a través de las bases de datos anteriores. En tercer lugar, una búsqueda de las listas de referencias de todos los artículos incluidos formará parte del proceso de selección de texto completo. Dos investigadores examinarán de forma independiente los títulos y resúmenes de la literatura. Luego, dos investigadores leerán de forma independiente el texto completo de la literatura incluida, aplicando los criterios de inclusión y buscando listas de referencias. Los datos se presentarán en tablas y gráficos para responder a la pregunta de revisión.

Palabras clave: Adultos mayores; Tercera edad; Uso de tecnología; COVID-19; Resiliencia.

1. Introduction

Older people represent vulnerable members of society, and they are regarded as having poor digital literacy as well as trouble adapting to the demands of an increasingly digitalized world (Ball, et al., 2019; Betts, et al., 2019; Köttl, et al., 2021). Their interactions with technology have become a topic of particular concern during the COVID-19 pandemic (Li, et al., 2021; Sixsmith, et al., 2022). Control measures introduced by Australian Government authorities, as well as those of many governments worldwide, required that people undergo self-imposed quarantine in order to minimize the spread of the disease (Hale, et al., 2020; Healthdirect, 2022). Community guidelines included social isolation, particularly as a risk mitigation strategy for vulnerable people (Moore & Lucas, 2021; WHO, 2022a). In line with these policies, there has been a significant impetus to use technologies to assist in the safe provision of financial and health services remotely, as well as to enable social interactions without face-to-face contact (Vargo, et al., 2021). Numerous studies have explored the use of technologies by older people (Nguyen, et al., 2022; Song, Qian & Pickard, 2021; Suhaimi et al., 2022; Wan, Lighthall & Xie, 2022). However, their use in relation to the resilience of older people, particularly under circumstances of seclusion, has not been explored. A scoping review of the literature in this area is therefore justified.

A key term applied in this research is 'Information and Communication Technologies' (ICT). It captures the broad range of technology tools and resources used to collect, store, retrieve, create, and convey information, including computers, the Internet, smart devices, social media, audio visual broadcast systems, telephones, Voice over Internet Protocol (VoIP), and smart phones (UNESCO, 2022). Irrespective of the logic behind digital solutions to the pandemic (Whitelaw, et al., 2020), the paucity of technology literacy among older people has also highlighted issues of resilience and the merits of further investigation.

The term 'resilience', as defined by the American Psychological Association (2022), refers to "...the process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demands" (APA, 2022). The focus on resilience is the unique element of this research and forms the main rationale for conducting the review. There is a need to understand the interactions of older people with technology beyond 'use' and 'non-use', as well as barriers and challenges. As such we can capture a richer set of processes

of adaptation to the resilience-driven demands of technology use. This approach examines each issue of resilience in terms of both positive and negative interactions with technology. This is considered by the researchers to be an effective aperture through which to consider and identify a broader scope of understanding with more vectors to assist older people in this context.

One example of an issue of resilience in this context is found in a response to a survey conducted by National Seniors Australia in 2020. It reads as follows:

My concern re: "Using technology to access services" is solely that mobile phones are moving more and more towards becoming a necessity. I was in tears when I was unable to register as a priority customer when Woolies stopped regular deliveries as their form didn't accept landline numbers and now they want mobile number to access delivery info. I don't have a mobile as I've had a computer for yrs and with age pension being my sole income I don't want to spend money on a mobile to be able to access services. I sent feedback to Woolies re: seniors not being able to apply for priority delivery and didn't here back. Ironic that a large part of target group is group least likely to have mobiles sigh (p. 8)

This exemplifies an issue of resilience. In this situation the requirement to use technology, a mobile phone, prevented an older person from registering for food deliveries to their home. The respondent indicated that they were concerned that using a mobile phone was becoming a necessity, and that ownership of a mobile phone is beyond their financial capacity. They also expressed that the situation caused emotional distress (National Seniors Australia, 2020).

The purpose of this review is to summarize the existing evidence on the interactions of older people with financial, social, and health related technologies in the last four years, with specific regard to understanding issues of resilience that arise in this context. This approach has the potential to identify ways to improve the resilience of older people to the challenges and risks posed by seclusion. The key outcomes for this review are (1) explication of the existing evidence on the interactions of older people with financial, social, and health related technologies, and (2) derive a scope of the issues of resilience that arise as a result.

Review Question

What has been found in relation to the resilience of older people specific to their interactions with financial, social, and health related digital technologies?

Inclusion Criteria

The review will include older adults living in the community in private addresses and incorporate studies that detail the perspectives of the carers of older people. The views of carers of older people are included to account for seniors that cannot adequately convey their perspectives due to health or knowledge-based limitations. It defines 'older people' as individuals of 60 years of age or older. The age of 60 is widely considered the beginning of old age, and this is consistent with the approach taken by the World Health Organization (WHO, 2022).

The review aims to identify instances of use and non-use of digital information and communication technologies (ICT) in everyday life in which issues of resilience arise. It integrates a focus on issues of resilience relating to the use of technology that arise in the community. Within this context the review is aimed at understanding three main areas, which are: health, finance, and social related interactions or non-interactions with digital information and communication technologies.

Exclusion Criteria

This review excludes older adults living in long-term care facilities, including nursing homes/care homes and hospital in-patients. It also excludes studies focused on populations younger than 60 years of age and studies focused on the perspectives of the clinicians of older adults. The rationale behind these exclusion criteria is based on the need to capture distinct examples of issues of resilience, which can be most clearly demonstrated outside of hospital and clinical care settings. In these environments, older people receive professional assistance and care which has the potential to distort the normal uncontrolled conditions under which issues of resilience might be experienced.

Only studies published in English between 2019 and 2022 will be appraised in this review. This is in line with the context of COVID-19, which was first reported in 2019. No limitations will be implemented in terms of study design. Theses and dissertations published by universities will also be considered. Discussion, review, and opinion papers will be excluded.

2. Methodology

The review will be conducted according to the JBI methodology for scoping reviews (Peter et al., 2020). The JBI methodology is the most appropriate approach because it is used broadly, internationally acknowledged and provides clear steps on conducting scoping reviews. This review is to be carried out in November and December of 2022. The scoping review method created by the Joanna Briggs Institute (JBI) will be applied (Peters, et al., 2020). This approach is a guide for researchers on conducting scoping reviews in healthcare and a wide range of other disciplines. It includes strategies and information on developing review protocol, study search and selection, as well as data extraction and synthesis (Peters, et al., 2020). A preliminary search of MEDLINE, the Cochrane Database of Systematic Reviews, JBI Evidence Synthesis, CINAHL and PsychINFO was conducted on October 10th, 2022, and no current or underway systematic reviews or scoping reviews on the topic were identified.

Search Strategy

The three-point search strategy outlined in section 11.2.5 of the JBI scoping review guide will be applied (Peters, et al., 2020). An initial and limited search of the SCOPUS, Web of Science, and MEDLINE databases is carried out using the following key words: older people, human-computer interaction, technology rejection. The titles and abstracts of the relevant literature found will be analysed, and the applicable index terms gathered. The next step is to use all keywords and index terms to search the literature in each of the selected databases. The third step, screening reference lists, will be conducted for all studies selected for full text screening. Studies identified in this way is to be added to the title and abstract screening list and processed through stage 1 and 2 of screening by two research assistants independently. An example of the search strategy for the SCOPUS database is included in the supplementary materials file included with this protocol. This strategy was developed with the assistance of an Academic Support Librarian. We will continue to collaborate with our librarian in order to improve the strategy to ensure all relevant literature is found.

The SCOPUS, Web of Science (WoS), CINAHL, PsycINFO, and MEDLINE databases are to be searched. The grey literature included in this scoping review is limited to theses and dissertations, studies from Non-Government Organizations, and Government reports. A search will be conducted via the ProQuest Dissertations and Theses Global database, as well as the Google and Google Scholar search engines to obtain grey literature.

Study Selection

The citations of all identified studies will be imported into EndNote 20 and all duplicates will be removed. The full citation list of potentially relevant studies will be uploaded to the JBI System for the Unified Management of the Assessment and Review of Information (SUMARI). Two research assistants will then independently undertake stage one of the screening process, referring to the inclusion criteria while assessing the titles and abstracts of the identified studies. Once stage one is complete, the research assistants will independently carry out stage two full text screening. During this process the end-text reference lists of each study will be searched for further relevant literature. The reasons for excluding any study will be recorded. Any conflicts that arise will be resolved via discussion and the final decision will be made by the research supervisors. The full results of the search will be reported in its entirety as part of the final scoping review report. These results will also be presented in the form of a Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) flow diagram that is specifically designed for scoping reviews.

Data Extraction

Two researchers are to use a data extraction tool to facilitate the extraction of relevant data from the included literature. The following details are to be extracted: publication year, country, context of technology use/non-use (financial, social, health), issue of resilience experienced regarding technology use or non-use among community-dwelling older people. A draft charting table has been included in the supplementary materials file attached to this article. The data extraction process is to be tested by two researchers independently extracting data from three studies. The results are then compared, and the extraction parameters revised as required. Any adjustments made will be detailed in the full scoping review report. Any disagreements between researchers are to be resolved via discussion, or without consensus a decision is made by the research supervisor.

Data Synthesis

A table will be used to present the results of data extraction and the review in order to establish and summarize the extant literature. The classifications under which the data and results will be set out are: author, publication year, country, study design, context of technology use/non-use (financial, social, health), issue of resilience experienced regarding technology use or non-use among community-dwelling older people. A narrative summary will follow this table, which will elucidate the major themes found in the literature.

3. Discussion

This review will focus on issues of resilience experienced by older people as they interact with information technology. It is anticipated that it will identify the available evidence in this context. A limitation of this study is that it is restricted to sources published in English. The Joanna Briggs Institute scoping review guidelines do not recommend methodological appraisal of the quality of studies (Peters, et al., 2020). Therefore, the results and recommendations of scoping reviews cannot be graded.

4. Partial Final Considerations

This protocol has clearly set out the steps necessary to replicate a scoping review of resilience and technology use for older people. This review will assess and synthesize the available evidence on issues of resilience related to financial, social, and health related technology use or non-use by older people. As such, this review may inform policy and research on improving the resilience of older people for the purpose of achieving sustainable independent living.

Future research in this area is vital for identifying and understanding potential opportunities related to technology use in improving health and wellbeing of older people.

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References

- APA. (2022). *Resilience*. American Psychological Association. Retrieved 11 September from <https://www.apa.org/topics/resilience>
- Ball, C., Francis, J., Huang, K.-T., Kadylak, T., Cotten, S. R., & Rikard, R. (2019). The physical–digital divide: Exploring the social gap between digital natives and physical natives. *Journal of Applied Gerontology*, 38(8), 1167-1184.
- Betts, L. R., Hill, R., & Gardner, S. E. (2019). “There’s not enough knowledge out there”: Examining older adults’ perceptions of digital technology use and digital inclusion classes. *Journal of Applied Gerontology*, 38(8), 1147-1166.
- Hale, T., Angrist, N., Kira, B., Petherick, A., Phillips, T., & Webster, S. (2020). Variation in government responses to COVID-19 [Working Paper]. 1(6). Retrieved October 24, 2022, from <http://www.bsg.ox.ac.uk/covidtracker>
- Healthdirect. (2022). How to isolate with COVID-19. Healthdirect Australia. Retrieved October 24 from <https://www.healthdirect.gov.au/covid-19/isolation-and-quarantine>
- Köttl, H., Gallistl, V., Rohner, R., & Ayalon, L. (2021). “But at the age of 85? Forget it!”: Internalized ageism, a barrier to technology use. *Journal of Aging Studies*, 59, 100971.
- Li, W., Ornstein, K. A., Li, Y., & Liu, B. (2021). Barriers to learning a new technology to go online among older adults during the COVID-19 pandemic. *Journal of the American Geriatrics Society*, 69(11), 3051-3057.
- Moore, K. A., & Lucas, J. J. (2021). COVID-19 distress and worries: The role of attitudes, social support, and positive coping during social isolation. *Psychology and Psychotherapy: Theory, Research and Practice*, 94(2), 365-370.
- Nguyen, T. X. H., Tran, T. B. N., Dao, T. B., Barysheva, G., Nguyen, C. T., Nguyen, A. H., & Lam, T. S. (2022). Elderly People’s Adaptation to the Evolving Digital Society: A Case Study in Vietnam. *Social Sciences*, 11(8), 324.
- National Seniors Australia. (2020). *COVID-19: Older Australians’ concerns about the way out*. <https://agedcare.royalcommission.gov.au/system/files/2020-09/NSA.9999.0008.0035.pdf>
- Peine, A., & Neven, L. (2021). The co-constitution of ageing and technology—a model and agenda. *Ageing & Society*, 41(12), 2845-2866.
- Peters, M. D., Godfrey, C., McInerney, P., Munn, Z., Tricco, A. C., & Khalil, H. (2020). Chapter 11: scoping reviews (2020 version). *JBI manual for evidence synthesis*. Retrieved August, 2022, from <https://jbi-global-wiki.refined.site/space/MANUAL/4687342/Chapter+11%3A+Scoping+reviews>
- Sixsmith, A., Horst, B. R., Simeonov, D., & Mihailidis, A. (2022). Older People’s Use of Digital Technology During the COVID-19 Pandemic [Article]. *Bulletin of Science, Technology and Society*, 42(1-2), 19-24. <https://doi.org/10.1177/02704676221094731>
- Song, Y., Qian, C., & Pickard, S. (2021). Age-Related digital divide during the COVID-19 pandemic in China. *International Journal of Environmental Research and Public Health*, 18(21), 11285.
- Suhaimi, N. M., Zhang, Y., Joseph, M., Kim, M., Parker, A. G., & Griffin, J. (2022, April). Investigating Older Adults’ Attitudes towards Crisis Informatics Tools: Opportunities for Enhancing Community Resilience during Disasters. In *CHI Conference on Human Factors in Computing Systems* (pp. 1-16).
- Vargo, D., Zhu, L., Benwell, B., & Yan, Z. (2021). Digital technology use during COVID-19 pandemic: A rapid review. *Human Behavior and Emerging Technologies*, 3(1), 13-24.
- Wan, X., Lighthall, N. R., & Xie, R. (2022). Consistent and robust predictors of Internet Use among older adults over time identified by machine learning. *Computers in Human Behavior*, 107-413. <https://doi.org/10.1016/j.chb.2022.107413>
- Whitelaw, S., Mamas, M. A., Topol, E., & Van Spall, H. G. (2020). Applications of digital technology in COVID-19 pandemic planning and response. *The Lancet Digital Health*, 2(8), e435-e440.
- WHO. (2022). *Ageing*. World Health Organization. Retrieved October 20 from https://www.who.int/health-topics/ageing#tab=tab_1
- WHO. (2022a). *Advice for the Public*. World Health Organization. Retrieved October 24 from <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>
- Wilson-Nash, C., & Tinson, J. (2022). ‘I am the master of my fate’: digital technology paradoxes and the coping strategies of older consumers. *Journal of Marketing Management*, 38(3-4), 248-278.