

REVIEW ARTICLE

Social support needs to encourage health-related technology use among elderly persons who age in place: a scoping review

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ABSTRACT

This scoping review focused on mapping out the relevant literature on the subject of the social support needs of the elderly who age in place and their use of technology for health-related purposes, identify research gaps and propose directions for future research. The PRISMA-ScR checklist was used to guide this scoping review. A total of 11,991 potential articles were identified from four international academic databases. Five rounds of exclusion reduced these potential articles to five finalized articles. Gaps identified included the role of the wider community in providing social support for the adoption and engagement with health-related technology, the role of technology education in adoption and use of health-related technology, and the disparity of studies on emotional social support needs of the elderly who age in place. Suggested directions of future research included more diverse uses of research methodologies, inclusion of the elderly who age in place in the development of future research, education-focused research, policy level studies, studies based on particular genders or disabilities, comparative studies in the post COVID-19 era and the emotional aspects of social support needs.

Key words:

elderly; aging in place; health; technology; scoping review

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INTRODUCTION

The aging population, elderly persons who age in place (AIP) and continuous technological advancements are interconnected. This is due to the growing dependence and interest of elderly persons in technology and its benefits.^{1, 2} For the elderly, however, access to technology alone is not enough to ensure efficacious use.³ Elements of human interaction and connection are necessary for the elderly to be open to effective technology use.⁴ This manuscript is focused on the human element of social support needs of the elderly who AIP and their use of technology for health-related purposes.

Social support is vital for the health of the elderly.⁵ The need for social support globally will continue to increase due to the growing aging population. Challenges to providing social support by medical professionals, therapists as well as family members will also increase due to the changes in the health of the elderly and advancements in technology.⁶⁻⁸ Social support may take the forms of social activities, psychological health and mobility, healthcare and domestic life information⁹, coordination of services, preventive maintenance, restorative strategies, training and the need for person-centered approaches¹⁰ as well as human contact/interaction^{4, 11} Past studies have shown that social support is integral to the continued good health of the elderly.¹²⁻¹⁸

For the elderly who AIP, social support becomes more challenging due to their advancing age as well as changes to their health and physical landscape.^{19, 20} Although AIP comes with some certainty, the changes to the health of the elderly person who AIP require not only the forms of social support mentioned in the preceding paragraph but also comfort, safety, security, self-determination, agency and choice.²¹⁻²³ The elderly should also be able to access healthcare with ease of

mobility^{24, 25}; including technology to maintain and/or enhance their health.^{3, 26}

The literature has focused on both digital (e.g. remote sensing, health information technology, health analytics, telemetry, CCTV cameras, communication technologies) and mechanical (e.g. robotics, fitness trackers) aspects of health technology in terms of its application for the elderly.²⁷⁻²⁹ Despite concerns of privacy and security among elderly of the use of health-related technology and concerns regarding digital and health literacy³⁰⁻³⁴ it is safe to assert that health technology greatly aids in maintaining and facilitating the continued good health of the elderly who AIP.⁴

Each of the concepts contained in the preceding paragraphs has been studied individually or in relationship with each other. But, the focus on the social support needs of the elderly who AIP and their use of technology for health-related purposes have rarely been studied in tandem. This indicates an area of research that is necessary to prepare relevant stakeholders for the exponential growth of this segment of the aging population. Therefore, this scoping review will seek to map out the extant relevant literature, identify relevant research gaps and suggest directions for future research based on this specific topic.

Rationale and objectives

Social support is vital for increasing or decreasing involvement in health-related activities. It is also integral to the continued learning and use of technology for health-related purposes. However, the present literature on the subject of social support for the elderly does not add vastly to knowledge on the subject of the social support needs of the elderly who are AIP and their use of technology for health-related purposes.³⁵⁻³⁷ Therefore, the focus of this scoping review is to map out the relevant amount of literature on the subject, analyze the relevant literature for research gaps and put forward suggestions for future

research on the subject based on the identified gaps. The question for this scoping review is “What are the social support needs of the elderly who AIP in terms of using technology for health-related purposes”?”

Scope of the review and definitions

The elderly who AIP form the population (P) for this research. Social support is the concept (C). Both the elderly who AIP and social support are studied within the context (C) of use of technology for health-related purposes. The elderly who AIP, social support and technology for health-related purposes are defined as follows: 1) the elderly who AIP are persons aged 50 and above as determined by the World Health Organization³⁸ and included articles should have respondents of this age, above this age or the mean age of all respondents is above 50 years of age; 2) AIP is defined as persons who are aging or growing old in their own homes or community¹⁹; 3) social support is broadly defined as social activities, psychological health and mobility, healthcare and domestic life⁹, information, coordination of services, preventive maintenance, restorative strategies, training and the need for person-centered approaches as well as human contact/interaction^{4, 10, 11}; and 4) technology is defined as digital devices used specifically for health-related purposes (e.g. smart homes, telemonitoring and applications in smartphones, tablets or computers) because they are the most prevalently used type of technology among the aged for health purposes^{27-28, 39-40}; as such mechanical technology will be omitted from the database searches. Health will be used as the umbrella term for physical and mental health.

METHODS

The methodology and guidelines adopted by this scoping review is the PRISMA-ScR by Tricco et al.⁴¹

Protocol and registration

No review protocol for this specific topic was registered by the authors as per PROSPERO guidelines.

Eligibility criteria

The literature was not limited to any geographic region or to developing/developed nations; the timeframe of the publication of the articles was between July 2012 and July 2022 to capture the relevant literature of the past decade when the growth of the elderly population was the most notable. Only academic articles published in the English Language were used for this research. Editorials, opinion pieces and letters to the editor were excluded.

Information sources

The scoping review sought information sources in the BioMed Central (BMC), PubMed, SAGE Journals, ScienceDirect and Wiley Online Library databases. These databases were chosen as they house literature relevant to this scoping review. The date of the most recent search on all databases was August 12th 2022. IRB approval was received from the IRB of the Faculty of Social Sciences and Humanities of Mahidol University 2020/207 (B2).

Search strategy

The keywords used for the database searches included the elderly, older adults, senior citizens, the aged, health, social support, social network, social engagement,

social ties, technology, digital technology, health technology and aging in place. Boolean operators were used with these keywords in all the database searches.

Table 1 illustrates the search strategy used for this scoping review.

Table 1. Search strategy

Database	BioMed Central (BMC), PubMed, SAGE Journals, ScienceDirect and Wiley Online Library databases
Other sources	None
Key searched terms	<the elderly>, <older adults>, <geriatric>, <health>, <social support>, <social network>, <social engagement>, <social ties>, <social involvement>, <technology>, <digital technology>, <health technology>, <telemedicine>, <e-health>, <smartphone>, <mobile phone>, <application technology>, <telehealth>, <telecare>, <telemetry> and <aging in place>.
Language	English
Location	Globally
Duration	July 2012 to July 2022
Types of study	Empirical studies
Type of publication	Research articles
Exclusion criteria	Editorial, opinion pieces, letter to the editor, research protocols, study protocols, books, book chapters, review articles, needs frameworks, features.

Selection of sources of evidence

The process of selecting the sources of evidence was based on five rounds of exclusion. The first round of exclusion was based on duplication. The second round of exclusion was based on correct population for this study. The third round of exclusion was based on the title of the article. The fourth round of exclusion was based on the abstract of the article. Finally, the fifth round of exclusion was based on full text assessment of the article.

Data charting process

Personal and professional bias were limited by having all the authors read the finalized articles and conduct the data extraction independently. Data were extracted systematically using a charting table. Data extracted included the methodologies used, subject matter and the social support needs of the elderly who AIP for their use of technology for health-related purposes.

Synthesis of results

All data were summarized in individual charting tables, allowing for systematic analysis of the extracted data. When individual data extraction was completed, all individual charting tables were collated into one main charting table. Any differences of opinion regarding the extracted data were resolved via email exchange with the entire research team. The lead author then removed all repetitive/redundant data, summarized and synthesized the data.

RESULTS

Selection of sources of evidence

The database searches produced a total of 11,991 potential sources of evidence. The first round of exclusion based on duplication reduced the initially found articles to 11, 988. Of these 11,988 articles 13 were removed in the second round of exclusion as the focus was on

other populations such as healthcare workers and populations below the age of 45. The remaining 11,975 articles underwent the third round of exclusion based on title and 11,897 articles were removed as these articles focused on the efficacy of technological tools only or did not match the focus of a scoping review, i.e. being systematic reviews, literature reviews and rapid reviews. This left a total of 78 articles for assessment in the next round of exclusion. The fourth round of exclusion was based on the abstract of the article and 63 articles were removed as these articles focused on the efficacy of measurement tools, efficiency of technology, were research protocols, academic essays, measurements of cost effectiveness of

technology, technology design development or were review articles, leaving a total of 15 articles for the final round of exclusion. The fifth and final round of exclusion was based on full text evaluation. In this round of exclusion ten articles were removed as these articles focused on English Language acculturation, respondents not being genuinely AIP but the elderly who were forced to shelter in place due to the COVID-19 pandemic, social uses of technology other than for health reasons and technology acquisition by the elderly, leaving a total of five articles as the finalized articles for this scoping review. The process of exclusion is illustrated in Figure 1.

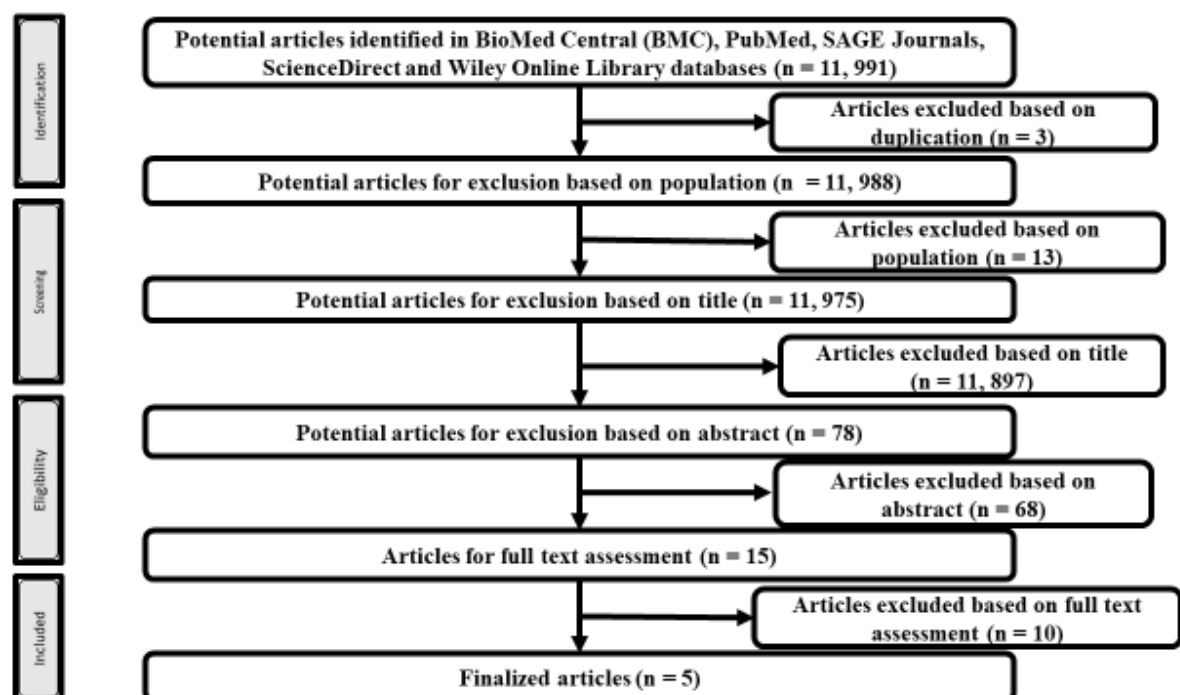


Figure 1. PRISMA ScR flow diagram of sources of evidence

Characteristics of sources of evidence

The studies in the finalized articles were conducted in Australia (n = 1), Sweden (n = 1), the United Kingdom (n = 2) and Belgium (n = 1). Qualitative (n = 3) and mixed methods (n = 2) methodologies were used in the finalized articles.

Sampling methods used included convenience sampling and purposive sampling. Data were collected using a social network analysis tool, semi-structured interviews, focus groups, a course journal, in-depth one-on-one interviews using an open-ended interview

guide, postal questionnaire and qualitative semi-structured interviews. Data analysis methods used included quantitative descriptive data analysis, qualitative data analysis, coding analysis, thematic approach, codes and categories from thematic approach, analytic framework using the Framework Method and non-parametric categorical data analysis. Software used for data analysis were Microsoft Excel and SPSS version 21.

The focus of the finalized articles was whether videoconferencing could affect the extent of elderly peoples' social networks, its contribution to their social support for health and their engagement/perceptions of these networks; the use of technology by the elderly with cognitive impairments for health purposes and their experiences of using technology; exploration of underlying factors to engage elderly in technology use to connect with health services offered to them; exploration of the attitudes of the elderly in a rural community toward the use of technology for health purposes; and examination of underlying factors of use and non-use of technology for health reasons by elderly persons with mild cognitive impairments.

The health issues focused on in the finalized articles included long term conditions (LTC) of a chronic nature, cognitive impairments, mental health conditions or issues, non-communicable diseases, progressive conditions and chronic pain. The types of technology included in the finalized articles included videoconferencing, RemindMe assistive reminder technology on smartphones, Telehealth, Telecare, eHealth, the internet, health apps in smartphones, and technology in general.

Social support needs from the community

The elderly required the social support of camaraderie to discuss nutrition, physical activity and their vital signs. They also had the social support need of building social networks to inquire about the health of other elderly people, the social support

need of social contact when illness caused immobility and being able to engage socially with other members of the community. Social support needs from the community also included social engagement to learn how to use health-related technology and the encouragement from their peers to use technology for health reasons.

Social support needs from the family

The elderly needed the social support from close family members to engage with technology especially when challenges with technology emerged. Family members could also provide the social support of continued open communication channels for the use of technology for health-related purposes. Technology could also act as a form of social support for family members of the elderly with cognitive impairments, especially spouses. Also, the elderly needed family social support in the form of setting up technology to help the elderly with cognitive impairments.

The elderly required the social support of their family to engage with technology to manage their health concerns; family members provided the social support of learning how to use technology, technical advice when the technology was unfamiliar and managing the technology when the elderly persons were unable to, although this made the elderly feel less independent. It is noted that the family members mentioned in the articles were the children and grandchildren of the respondents/participants and not extended family members.

Social support needs from other stakeholders

The elderly who AIP required the social support need of reduced health costs of technology as well as the acknowledgment that health related technology is meant to supplement and not replace in-person care for the elderly from governments. The elderly who AIP needed from technology companies and

technology manufacturers the social support of making visuals on digital/technological devices more friendly for the elderly who have visual problems, making technology more tactile with more human-like robotic features. The elderly who AIP also needed from technology companies/manufacturers the social support need of taking into consideration the views of the elderly when developing technology that the elderly will use for health-related reasons as well as technology that allows for the elderly who AIP to be more self-sustainable as opposed to having the technology take over their activities and responsibilities. The elderly also required the social support need of working collaboratively with healthcare professionals to encourage the adoption and provision of necessary technological support when necessary.

Physical, material or informational social support needs

The extracted data from the finalized articles indicated that the elderly who AIP depended on their doctors/healthcare providers the most for the social support of providing health-related information, albeit through the channel of technology. Information regarding health-related technologies needed to be controlled so as not to overwhelm the elderly. The elderly who AIP also required the social support of motivation from their healthcare providers to use technology. This included discussions on the ways in which the elderly could incorporate the use of technology into their daily lives.

Emotional and psychological social support needs

Emotional social support needs identified were the social support needs of emotional encouragement and emotional support. These two types of social support

could help build resilience in the elderly who AIP to use technology for health-related purposes confidently. The data extracted showed that the elderly who depended on health-related technology and their family members to help them manage these technologies felt a loss of independence.

From the standpoint of psychological social support, the elderly who AIP needed to be listened to when they utilized health-related technology. They also needed the social support of developing insight into the advantages of using health-related technology. Elderly women who AIP were less likely to use health-related technology. Therefore, there is the psychological need to be understood from the standpoint of gender within the context of use of health-related technology. Finally, the psychological social support need of having human contact work in tandem with health-related technology was vital for the elderly who AIP, as technology alone could not replace the psychological need for human interaction/care.

Synthesis of results

The first type of social support indicated was the need for a supportive community social network that provided camaraderie, exchange of information and social engagement. From this community-level social support need, the elderly who AIP were able to gain social connectivity as well as information regarding the types, benefits and uses of health-related technology as well as other information connected to health maintenance. The second type of social support needed by the elderly who AIP was the social support provided by family. This support provided technical support information and encouragement for the elderly who AIP to adopt and engage with health-related technology that would assist them to better manage their health. The data extracted

showed certain downsides to the use of health-related technology by the elderly who AIP, but the social support provided by the family was integral to the uptake and continued use of health-related technology by the elderly.

The social support needed by the elderly from governments, non-governmental organizations, technology companies or technology manufacturers was mainly financial. This social need orbited the financial reimbursement for the purchase of health-related technology. Aside from this, the elderly who AIP were concerned with the user-friendliness of the technology as well as how it would work within the context of their lives as opposed to being a hurdle or hindrance. The elderly also indicated the social support need for being included in the development process

of the health-related technology. This suggests the elderly who AIP were concerned with the impact that such technology would have on their daily lives.

The social support of information, motivation and discussion with healthcare providers was also indicated as a necessity for the elderly who AIP to use health-related technology. This social support need for human contact is also evidenced in the emotional/psychological social support needs of the elderly who AIP. Being listened to and developing insight into the benefits of health-related technology assisted the elderly who AIP with building personal resilience and acceptance of health-related technology. The results of the data extraction, analysis and synthesis are shown in Table 2.

Table 2. Mapping, analysis, synthesis

No	Reference	Methodology	Subject matter, health condition and type of technology	Location of study	Social support needs (community)	Social support needs (family)	Social Support needs (government organization, non-governmental organization, technology companies or technology manufacturer)	Social Support needs (physical, material or informational)	Social Support needs (emotional)	Social Support needs (psychological)	Gaps and suggestions for future directions of research
1	Banbury A, Chamberlain D, Nancarrow S, Dart J, Gray L, Parkinson L. Can videoconferencing affect older people's engagement and perception of their social support in long-term conditions management: a social network analysis from the Telehealth Literacy Project. Health & social care in the community. 2017 May;25(3):938-50. ⁴²	Methodology: Mixed methods approach. Sampling: Convenience sampling (n=45). Data collection: Mixed methods approach combining a social network analysis tool, semi-structured interviews, focus groups and a course journal. Data analysis: Descriptive data analysis, qualitative data analysis, coding analysis and thematic approach. Microsoft Excel software was also used.	Subject matter: Focus is on effect of videoconferencing on social networks, social support and perceptions of these networks. Health condition: Long term chronic condition Type of technology: Videoconferencing.	Australia	Camaraderie, building social networks, social contacts and domestic services.	Open communication using technology, close family relations aided with technology	Reduction of health costs.	Dependence on medical professionals for health information.	Emotional encouragement and emotional resilience.	Listening and insight into technology.	Gaps: Management of health information, community leadership, use of technology for mental health. Future research: Feasibility of education and training of elderly persons, inclusion elderly persons in development of technology security and safety of technology for elderly persons using random sampling and reliable social support scales.

No	Reference	Methodology	Subject matter, health condition and type of technology	Location of study	Social support needs (community)	Social support needs (family)	Social Support needs (government organization, non-governmental organization, technology companies or technology manufacturer)	Social Support needs (physical, material or informational)	Social Support needs (emotional)	Social Support needs (psychological)	Gaps and suggestions for future directions of research
2	Baric V, Andreassen M, Öhman A, Hemmingsson H. Using an interactive digital calendar with mobile phone reminders by senior people-a focus group study. BMC geriatrics. 2019 Dec;19(1):1-1. ⁴³	Methodology: Qualitative. Sampling: Convenience sampling based on the Swedish National Pensioners Organization (PRO) (n=20). Data collection: Focus groups. Data analysis: Thematic analysis.	Subject matter: Use of RemindMe technology to assist elderly with cognitive impairments. Health condition: Cognitive impairments. Type of technology: RemindMe smartphone app.	Sweden		Technology can act as a form of social support for family caregivers.	Technical information, easy visuals, input from elderly persons.	Appropriate information, motivation and support.	Emotional support.		Gaps: Technology education, peer education, Future research: Health technology education, education materials preparation, for peer education, education funding, policy studies, technology and elderly disability, use of diverse methodologies.
3	Cook EJ, Randhawa G, Sharp C, Ali N, Guppy A, Barton G, Bateman A, Crawford-White J. Exploring the factors that influence the decision to adopt and engage with an integrated assistive telehealth and telecare service in Cambridgeshire, UK: a nested qualitative study of patient 'users' and 'non-users'. BMC health services research. 2016 Dec;16(1):1-20. ⁴⁴	Methodology: Qualitative Sampling: Purposive sampling using referrals. Data collection: In-depth one-on-one interviews using an open-ended interview guide to explore the views and experiences of	Subject matter: Exploration of underlying factors that impact on patients' decision to initially adopt and engage with telehealth and telecare applications	United Kingdom	Social engagement..	Information and encouragement, technology management.	Collaboration with healthcare professionals, technology support.	Control of health-related technology information, referrals by health professionals. support to use the technology.	Confidence building, reliance on family creating dependence.		Gaps: The importance of social support from the larger community. Future research: The roles that members of the community play to provide social support for the elderly.

No	Reference	Methodology	Subject matter, health condition and type of technology	Location of study	Social support needs (community)	Social support needs (family)	Social Support needs (government organization, non-governmental organization, technology companies or technology manufacturer)	Social Support needs (physical, material or informational)	Social Support needs (emotional)	Social Support needs (psychological)	Gaps and suggestions for future directions of research
		‘users’ and ‘non-users’ ‘Users’ (n = 28), ‘non-users’ (n = 3) withdrawn (n = 9). Data analysis: Analytic framework using the Framework Method, coding and thematic analysis.	services offered by Cambridgeshire Community Service (CCS) NHS Trust Assistive Telehealth and Telecare (ATT). Health condition: Mental health conditions, long term conditions, non-communicable diseases and progressive conditions. Type of technology: Telehealth and Telecare.								
4	Currie M, Philip LJ, Roberts A. Attitudes towards the use and acceptance of eHealth	Methodology: Mixed methods.	Subject matter: Exploration	United Kingdom	Encouragement from peers to engage	Family support.	Social support from state and government			Women would require more social support	Gaps: Social support for use of health-

No	Reference	Methodology	Subject matter, health condition and type of technology	Location of study	Social support needs (community)	Social support needs (family)	Social Support needs (government organization, non-governmental organization, technology companies or technology manufacturer)	Social Support needs (physical, material or informational)	Social Support needs (emotional)	Social Support needs (psychological)	Gaps and suggestions for future directions of research
	technologies: a case study of older adults living with chronic pain and implications for rural healthcare. BMC health services research. 2015 Dec;15(1):1-2. ⁴⁵	Sampling: Convenience and purposive sampling. Data collection: Postal questionnaire survey answered by respondents (n=425) with a response rate of 40% (n=168); a series of qualitative semi-structured interviews (n=7). Data analysis: Quantitative descriptive data, non-parametric categorical data, SPSS version 21; qualitative data were analyzed using an iterative framework approach.	of attitudes towards, use of, and acceptance of technology (eHealth, the internet, health apps in smart phones) in rural settings. Health condition: Chronic pain. Type of technology: eHealth, the internet, health apps in smart phones		with technology.		entities in terms of technology as a supplement to in-person healthcare.			to engage with technology for health-related reasons.	related technology based on the gender and location. Future research: Influence of gender, community support and gender, gender identities and technology use.
5	Dequanter S, Fobelets M, Steenhout I, Gagnon MP, Bourbonnais A, Rahimi S, Buyl R, Gorus E. Determinants of technology adoption and continued use among cognitively impaired older adults: a qualitative study. BMC Geriatrics. 2022 Apr;22(1):1-6. ⁴⁶	Methodology: Qualitative Sampling: Purposive sampling. Data collection: One-on-one interviews (n=16) and a	Subject matter: Examination of the factors underlying use and non-use of technology by persons	Belgium		Social support and education al support from children and	Financial reimbursement for health related technology purchases, tactile technology, sustainable non-			Technology needs to be in tandem with human contact.	Gaps: The importance of community in encouraging the elderly to engage with or adopt health-related technology.

No	Reference	Methodology	Subject matter, health condition and type of technology	Location of study	Social support needs (community)	Social support needs (family)	Social Support needs (government organization, non-governmental organization, technology companies or technology manufacturer)	Social Support needs (physical, material or informational)	Social Support needs (emotional)	Social Support needs (psychological)	Gaps and suggestions for future directions of research
		focus group (n=8) with the elderly and their informal caregivers. Data analysis: Thematic analysis and mapping/coding.	with mild cognitive impairments (PMI), as well as their formal and informal caregivers. Health condition: Mild cognitive impairment, dementia. Type of technology: Technology is used as a general term.			grandchildren,	invasive technology.				implications of COVID-19 on technology use. Future research: Community support for engagement with technology, removal of barriers to technology use post-pandemic, reimbursement of health-related technology purchases, emotional aspects of technology use.

DISCUSSION

Summary of evidence

The gaps identified in the analyzed extracted data provide directions for future research: first, the role of the larger community and community leaders in providing social support via disseminating, supporting and encouraging the use of health-related technology; how community leaders may act as a liaison with relevant authorities to provide necessary/appropriate social support for the elderly who AIP that meets their needs when they engage with health-related technology; and the social support needs for the elderly who AIP to use technology when they face mental health issues other than dementia.

The second set of gaps identified were the role of social support in educating the elderly to use health-related technology and if such education may use a peer-based model; the roles of gender and location on social support needs by the elderly to adopt and engage with health-related technology; and a comparative study of the use of health-related technology by elderly who AIP in the post COVID-19 pandemic era.

The third gap identified is the disparity in the area of the emotional social support needs of the elderly who AIP in terms of use of health-related technology, specifically the emotional support needs when they are forced to engage with health-related technology as opposed to when they willingly do so.

The gaps identified above provide directions for future research. First, the authors would suggest the use of more diverse methodologies for research on the subject. For example, using quasi-experimental research design for identifying and analyzing the relationships between social support needs and use of health-related technology; random sampling of a national population of elderly persons who AIP to gain deeper exploration of the social support needs of health-related

technology use; and use of a reliable social support scale to measure specific social support needs to encourage the adoption/engagement with health-related technology. Second, future research may focus on the inclusion of the elderly in the development of studies pertaining to their community and family social support needs within the context of adoption and use of health-related technology.

Third, peer education and training is a direction of research that would fill an identified gap in the literature. This would involve various stakeholders and customization of teaching/learning materials to match educational needs. Fourth, policy studies may also contribute to addressing the gap by conducting future research on topics such as the social support needs of education and governmental reimbursement plans for purchases of health-related technology for the elderly.

Fifth, future research may choose to explore the social support needs of physically disabled elderly to assess better adoption and use of health-related technology, explore the influence of gender and the use of health-related technology and how the role of the community may be expanded to provide more social support. Sixth, future research may choose to address the question of the social support needs of the elderly who AIP in the post COVID-19 era. Finally, future research could choose to focus on the emotional aspects of social support needs of the elderly to broaden the area of the interrelationship between emotional social support and adoption of technology.

Limitations

The small number of finalized articles placed a limit on the amount of extracted data. The authors attributed this to the stringent definitions and scope adhered to in this research. The second limitation was the need to differentiate between the study populations who were elderly who AIP and those who were forced into

isolation due to the COVID-19 pandemic. The authors overcame this limitation by screening through the articles to identify the correct study population. The third limitation was the focus on only articles published in the English Language. Future scoping reviews on this subject may take into consideration academic works published in other languages.

CONCLUSION

As health services becomes more technology inclined and the elderly population continues to grow, all relevant stakeholders should be more cognizant of the social support needs of the elderly who AIP to adopt and engage with health-related technology. Aside from creating more avenues for health provision and communication with the elderly who AIP, technology would complement the efforts of health providers without negating necessary human touch. The human touch in social support should remain vital in all healthcare transactions with the elderly who AIP when dealing with their health issues. The human touch should be included in experiments and studies to advance technological developments. This would aid in motivating elderly who AIP to use technology for their continued health. Stakeholders such as academics, medical professionals and technology development companies should engage with the elderly who AIP to gain their input for further technological developments.

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