RESEARCH ROUNDUP

Digital Health Literacy

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Introduction

At APPTA, we strive to find relevant and timely research that has the potential to influence policy decision making for the aging population. One way of doing this is through our Research Roundup series. Our team devotes time to reading and prioritizing academic papers and grey literature and investigates programming and products that foster innovation related to how we care for older adults. We then summarize that information for a quick and consumable product. These periodical documents will summarize evidence based on relevant policy topics that are discussed through our ongoing stakeholder engagement.

If there are particular topics of interest you would like us to investigate, please let us know by emailing info@agewell-nih-appta.ca.

For this roundup, we are looking at *Digital Health Literacy*.

Prepared by Patrick Patterson and Lyne Ouellet.

What is Digital Health Literacy?

Digital health literacy, which is sometimes called eHealth literacy, is "the ability to seek, find, understand, and appraise health information from electronic sources and apply the knowledge gained to addressing or solving a health problem" [1].

Health service organizations are embracing the use of digital service delivery, particularly since the COVID-19 pandemic, which has led some countries, such as Australia[2] to establish dedicated digital health agencies. This shift toward digital health services has resulted in a growing need for digital health literacy among health service users.

This Research Roundup highlights some of the literature and programs aimed at promoting digital health literacy among older adults.

1. https://doi.org/10.2196/jmir.8.2.e9
2. https://www.digitalhealth.gov.au/

Literature Review

Health literacy, health literacy interventions and decision-making: a systematic literature review

Zolbin, M. G., Huvila, I., and Nikou, S.	2022	Link to article

This review article examined 34 studies about relationships between older adults' health literacy and their decisions to make use of digital health service platforms.

It identified types of training strategies, including collaborative strategies (n=14), individualistic strategies (n=17), and combined approaches (n=3). The review identified five methods of content delivery: individual uptake of education materials (n=7); lectures by an instructor (n=10); hands-on learning through practice (n=13); comprehensive approaches that use flexible scenario-based learning (n=3); and teach-back (n=1) where health information providers assume responsibility for the teaching process. Most training (n=18) occurred in informal learning settings, such as libraries or community centres, while others were in clinical settings (n=3) or universities (n=1). Online teaching was also common (n=12), and its use is increasing.

Outcomes from the studies showed that training programmes help to enhance health literacy skills of older adults. The authors suggest that there is a growing need to implement health literacy programs for older adults to support access to digital health platforms.

Effectiveness of Digital Health Literacy Interventions in Older Adults: Single-Arm Meta-Analysis

Dong, Q., Liu, T., Liu, R., Yang, H. and Liu, C.	2023	Link to article

The article is a meta-analysis of the effectiveness of digital health literacy programs for older adults. It draws on seven studies published before November 2022, which provided usable data for a total of 710 older adults.

Three programs used face-to-face education methods while four provided online training. Two of the online programs included virtual courses instructed by trained facilitators, while two were self-directed. The training durations ranged from two to eight weeks. Analysis showed that the programs had statistically significant positive effects on digital health literacy efficacy. They also produced increased knowledge and self-efficacy, but did not have a significant impact on skills. Interventions that used face-to-face teaching, were guided by a conceptual framework, and were four weeks or longer had a stronger effect.

The authors conclude that digital health literacy interventions have positive impacts on older adults' health management and health status, but caution that the analysis is limited by the small number of studies, variable study quality, and varied methods used in included studies.

Literature Review

Individualistic Versus Collaborative Learning in an eHealth Literacy Intervention for Older Adults: Quasi-Experimental Study

Vazquez, C. E., Xie, B., Shiroma, K. and Charness, N.	2023	Link to article

This study evaluated a 4-week eHealth literacy training program in Texas, USA. (see eHiLL Program below). Racially and ethnically diverse participants (n=466) aged 60+ categories were randomly divided between collaborative and individualistic training groups.

The study found statistically significant improvement in eHealth literacy efficacy, computer and web knowledge, basic computer and web skills, information-seeking skills, and website evaluation at the end of the program in both the collaborative learning and individualistic learning groups. Data from the 6-month follow-up showed statistically significant loss of acquired skills in eHealth literacy efficacy, computer and web knowledge, basic computer skills.

The authors conclude that the program can boost skills, regardless of whether learning is collective or individualistic, but needs additional follow-up sessions to prevent loss over time.

eHealth Literacy: From Theory to Clinical Application for Digital Health Improvement. Results from the ACCESS Training Experience

Bevilacqua, R., Strano, S., Di Rosa, M., et al.	2021	Link to article

This article reports results from ACCESS eHealth training for older adults in Italy, which used practical scenarios to improve overall eHealth literacy, and positive technology use. The intervention delivered training based on a combination of instruction and hands-on learning in five modules over a four-week period. Fifty-eight older adults participated in the training program.

The study found statistically significant improvement in eHealth Literacy Scale (eHEALS) measures at the end of the course. Participants also expressed high satisfaction with the training and there was a strong positive correlation between satisfaction and improved eHEALS levels.

The authors suggest that the ACCESS intervention increases the digital health literacy of participants, although they acknowledge that the small sample size and lack of post-program follow-up are limitations of the study.

Literature Review

Promoting Digital Proficiency and Health Literacy in Middle-aged and Older Adults Through Mobile Devices with the Workshops for Online Technological Inclusion (OITO) Project: Experimental Study

Quialheiro, A., Miranda, A., Garcia, J. M., et al.	2023	Link to article

This study in Portugal aimed to develop, conduct, and measure the impact on digital health literacy of the Workshops for Online Technological Inclusion (OITO) project, a digital inclusion initiative for people aged 55 and older. Eighty-one participants completed the program, which consisted of a series of eight small-group in-person workshops. Data were collected at baseline, program completion, and 1-month follow-up.

The program was popular with participants, who reported a 94% satisfaction rate. Findings showed a statistically significant improvement in digital literacy at program completion and 1-month follow-up. There was no significant change in health literacy; however, participants' health literacy at baseline was already moderate to high.

The authors suggest that the approach used in the OITO project is feasible to implement and improves digital literacy, but they acknowledge weaknesses in the study design and that the program did not show an impact on health literacy.

Program Review

interCultural Online Health Network (iCON)

iCON Project, UBC Digital Emergency Medicine	Est. 2007	British Columbia

interCultural Online Health Network (iCON) is a partnership between University of British Columbia Digital Emergency Medicine and the Patients as Partners program. It is supported by the British Columbia Ministry of Health. iCON is a community-driven health promotion initiative to provide culturally and linguistically tailored information to the Chinese-speaking, Punjabi-speaking and Indigenous communities.

iCON provides information on a range of topics, including resources related to eHealth literacy and evaluating online health information (Link) and the digital health curriculum used in the iCON Train the Trainer Program (Link).

The program has been extensively evaluated, with the results published in peer-reviewed journals (Link).

Older People's Digital Inclusion Network

100% Digital Inclusion Leeds	Est. 2019	United Kingdom

This network is part of the 100% Digital Leeds initiative to improve digital inclusivity in Leeds, UK. The Older People's Digital Inclusion Network is comprised of voluntary and non-profit organizations that work with older adults, and it aims to increase digital inclusion.

Some of the organizations in the network are Digital Health Hubs (Link). These support older adults to engage with digital health services, use online services to manage their health, and develop skills and confidence around using digital technology.

Support for older adults is delivered through local organizations, which helps older adults access the services in places they are familiar and comfortable with. The network also facilitates cooperation, sharing effective practices, and referrals between member organizations.

Program Review (continued)

Learn My Way

Good Things Foundation (UK)	Est. 2018	United Kingdom

This initiative is an online digital skills training platform offered by the Good Things Foundation (UK) (Link), a charity organization that promotes digital inclusion.

The training is intended for the general population, including older adults, in the United Kingdom. It covers a range of basic digital literacy skills, such as using digital devices, using the internet, managing money online, and being safe online, among other topics. It includes skills for using digital technology to manage health (Link), with a section on searching online for health information.

Access to the online training is free, but most topics require that users register to access the information.

Electronic Health Information for Lifelong Learners (eHiLL)

University of Texas at Austin	2007 - 2020	USA

This is a series of projects by the School of Nursing and the School of Information of the University of Texas at Austin that provide free computer and health literacy training to older adults. The initial pilot study was conducted in 2007-8 and later studies refined and tested the approach.

The training is a free a multi-session course to help older adults learn to use computers to find reliable health information. The sessions are taught by graduate students from the School of Nursing or the School of Information and are delivered at public libraries, community centres, or similar settings in communities where older adults live.

The projects systematically collected data to evaluate the training course's effectiveness. Results indicate that the courses provide significant improvement in older adults' digital health literacy and internet use efficacy and have been published in multiple peer-reviewed articles (Link).

Program Review (continued)

Project OITO (Workshops for Online Technological Inclusion)

UN Decade of Healthy Ageing	2021 - 2022	Portugal

This initiative was acknowledged by the UN Decade of Healthy Ageing project. It was implemented in several communities in northern Portugal to develop digital and health literacy among people aged 55+.

The project delivered digital health literacy training through in-person eight-workshop programs conducted over several weeks. Each group had ten or fewer older adults. Participants used their own smartphones, which helped ensure that they were familiar with the devices but sometimes led to challenges for teaching due to differences in smartphone model capacities. Each workshop session included digital activities based on learning to use apps, physical exercise sessions, and time for conversation between participants.

The program was evaluated for impact and the results are published in a peer-reviewed article (Link). Analysis showed that the workshop-based training significantly improved participants' digital literacy skills and participants liked how the program was delivered.