Editorial

Technological Innovations and Data-Driven Support for Older Adults

Yun Jiang[1*], RN, MS, PhD; Jinjiao Wang[2*], RN, Mphil, PhD

[1]School of Nursing, University of Michigan, Ann Arbor, MI, United States
[2]School of Nursing, University of Rochester, Rochesteer, MI, United States
[*]all authors contributed equally

Corresponding Author:
Yun Jiang, RN, MS, PhD
School of Nursing
University of Michigan
400 North Ingalls Street
Ann Arbor, MI, 48109
United States
Phone: 1 734 7633705
Email: jiangyu@umich.edu

Abstract

Entering a new digital era where novel devices and emerging technologies, including artificial intelligence, are playing an incredible role with significant impact on health and health care delivery, *JMIR Aging* commits to supporting the community of patients and families, clinicians, and scientists to improve the efficiency, equity, and effectiveness of older adult care through the dissemination of cutting-edge evidence.

(JMIR Aging 2023;6:e48547) doi: 10.2196/48547

KEYWORDS

technological innovation; JMIR Aging; older adults; innovation; technology; digital ageism; digital health; older adult care

One in every six people in the world will be aged 60 years or over in 2030, totaling 2.1 billion by 2050 [1]. As people age, they are more likely to experience complex health conditions that will need support from families, health systems, and society. To “add life to years” of older adults, one promising solution may lie in the appropriate use of technology. To date, technological innovations in health care, such as smart wearable devices [2], remoting patient monitoring [3], socially assistive robots [4], augmented reality and virtual reality [5], automatic medication dispensers [6], and synchronized electronic health record systems that enable patients to virtually communicate with the care team [7], have been shown to help older adults stay physically active, live independently, monitor changes in medical conditions, and build social connections. More recently, advanced data science approaches have also been used to provide clinicians with point-of-care support for informed patient care decisions [8], speed up vaccine development [9], and support patients with shared decision-making [10].

Though the rise of technological and data science innovations brings promises, it also poses challenges. For example, many older adults, due to the lack of familiarity with technology, digital literacy, access to technological tools, or access to internet services, are negatively affected by the digital divide [11,12]. Digital ageism—the neglect of older adults’ needs, experience, and preferences in the user interaction design of some of the technologies—makes it even more difficult for them to engage in and enjoy the use of digital health technologies.

As an open-access journal, *JMIR Aging* strives to serve as a platform to support information-sharing and communications about older adults’ health and health care among clinicians, patients, caregivers, researchers, and policy makers. Our mission is to promote the use of technological innovations and data science to inform and improve health care services and health outcomes for older adults. Our focus includes digital health; emerging technologies; health informatics applications; patient education; and preventative care, clinical care, home care, and self-management support for older adults. *JMIR Aging* also covers aging-focused big data analytics using data from electronic health record systems, health insurance databases, federal reimbursement databases (eg, US Medicare and Medicaid), and other large data sets.

Founded in 2018, *JMIR Aging* has published 254 articles on various topics, such as the use of remote monitoring and artificial intelligence or robotic-driven systems [13], telehealth

XSL•FO
RenderX

visits among underserved older adult populations [14], and fall risk prevention mobile health solutions [15]. *JMIR Aging* has been indexed in PubMed, PubMed Central, DOAJ, Scopus, and the Emerging Sources Citation Index (Clarivate), and it is expected to receive an influential impact factor in 2023.

Entering a new digital era where novel devices and emerging technologies, including artificial intelligence, are playing an incredible role with significant impact on health and health care delivery, *JMIR Aging* commits to supporting the community of patients and families, clinicians, and scientists to improve the efficiency, equity, and effectiveness of older adult care through the dissemination of cutting-edge evidence.

Conflicts of Interest

None declared.

References

1. Ageing and health. World Health Organization. 2022 Oct 22. URL: https://www.who.int/news-room/fact-sheets/detail/ageing-and-health [accessed 2023-02-17]
2. Kim BY, Lee J. Smart devices for older adults managing chronic disease: a scoping review. JMIR Mhealth Uhealth 2017 May 23;5(5):e69 [FREE Full text] [doi: 10.2196/mhealth.7141] [Medline: 28536089]
3. Malasinghe LP, Ramzan N, Dahal K. Remote patient monitoring: a comprehensive study. J Ambient Intelligence Humanized Computing 2017 Oct 26;10(1):57-76. [doi: 10.1007/s12652-017-0598-x]
4. Lin Y, Fan J, Tate JA, Sarkar N, Mion LC. Use of robots to encourage social engagement between older adults. Geriatr Nurs 2022;43:97-103 [FREE Full text] [doi: 10.1016/j.gerinurse.2021.11.008] [Medline: 34847509]
5. Dermody G, Whitehead L, Wilson G, Glass C. The role of virtual reality in improving health outcomes for community-dwelling older adults: systematic review. J Med Internet Res 2020 Jun 01;22(6):e17331 [FREE Full text] [doi: 10.2196/17331] [Medline: 32478662]
6. Kamimura T. Older adults with Alzheimer's disease who have used an automatic medication dispenser for 3 or more years. Clin Gerontol 2019;42(1):127-133. [doi: 10.1080/07317115.2017.1347594] [Medline: 29028462]
7. Redelmeier DA, Kraus NC. Patterns in patient access and utilization of online medical records: analysis of MyChart. J Med Internet Res 2018 Feb 06;20(2):e43 [FREE Full text] [doi: 10.2196/jmir.8372] [Medline: 29410386]
8. Reddy B, Hassan U, Seymour C, Angus DC, Isbell TS, White K, et al. Point-of-care sensors for the management of sepsis. Nat Biomed Eng 2018 Sep;2(9):640-648. [doi: 10.1038/s41551-018-0288-9] [Medline: 31015684]
9. Sharma A, Virmani T, Pathak V, Sharma A, Pathak K, Kumar G, et al. Artificial intelligence-based data-driven strategy to accelerate research, development, and clinical trials of COVID vaccine. Biomed Res Int 2022;2022:7205241. [doi: 10.1155/2022/7205241] [Medline: 35845955]
10. Shaoibi A, Neelon B, Lenert LA. Shared decision making: from decision science to data science. Med Decis Making 2020 Apr;40(3):254-265 [FREE Full text] [doi: 10.1177/0272989X20903267] [Medline: 32024424]
11. McDonough CC. The effect of ageism on the digital divide among older adults. J Gerontol Geriatr Med 2016 Jun 16;2(1):1-7. [doi: 10.24966/ggm-8662/100008]
12. Richardson S, Lawrence K, Schoenthaler AM, Mann D. A framework for digital health equity. NPJ Digit Med 2022 Aug 18;5(1):119. [doi: 10.1038/s41746-022-00663-0] [Medline: 35982146]
13. Sapci AH, Sapci HA. Innovative assisted living tools, remote monitoring technologies, artificial intelligence-driven solutions, and robotic systems for aging societies: systematic review. JMIR Aging 2019 Nov 29;2(2):e15429 [FREE Full text] [doi: 10.2196/15429] [Medline: 31782740]
14. Schifeling CH, Shanbhag P, Johnson A, Atwater RC, Koljack C, Parnes BL, et al. Disparities in video and telephone visits among older adults during the COVID-19 pandemic: cross-sectional analysis. JMIR Aging 2020 Nov 10;3(2):e23176 [FREE Full text] [doi: 10.2196/23176] [Medline: 33048821]
15. Hsieh K, Fanning J, Rogers W, Wood T, Sosnoff J. A fall risk mHealth app for older adults: development and usability study. JMIR Aging 2018 Nov 20;1(2):e11569 [FREE Full text] [doi: 10.2196/11569] [Medline: 31518234]

Edited by T Leung; this is a non–peer-reviewed article. Submitted 27.04.23; accepted 27.04.23; published 10.05.23.

Please cite as:
Jiang Y, Wang J
Technological Innovations and Data-Driven Support for Older Adults
JMIR Aging 2023;6:e48547
URL: https://aging.jmir.org/2023/1/e48547
doi: 10.2196/48547
PMID: 37163345

XSL•FO
RenderX

©Yun Jiang, Jinjiao Wang. Originally published in JMIR Aging (https://aging.jmir.org), 10.05.2023. This is an open-access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work, first published in JMIR Aging, is properly cited. The complete bibliographic information, a link to the original publication on https://aging.jmir.org, as well as this copyright and license information must be included.

XSL•FO
RenderX