Apps and Wearables to Support Ageing in Place – A Scoping Research and Quality Evaluation

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Author Biography

Marina Bruderer-Hofstetter is a physiotherapist with a Master of Science in Physiotherapy from the Zurich University of Applied Sciences and a PhD in Health Sciences from the University of Lucerne, Switzerland. She has around ten years of clinical experience, including work in geriatrics. From 2013 to 2023, she served as a research assistant and lecturer at ZHAW Zurich University of Applied Sciences. Since January 2024, she has been a lecturer and head of continuing education in Physiotherapy at Bern University of Applied Sciences. Her research at the Institute on Ageing focuses on healthy ageing, physical activity, mild cognitive impairment, autonomy in everyday life, and health measurement instruments.

Background

Many older adults wish to live independently in their own homes. Assistive technologies—such as apps and wearables—can support healthy ageing and autonomous living by helping manage physical and cognitive health, ensuring safety, and enhancing daily functioning. However, acceptance among older adults remains limited. It is unclear whether current technologies meet the expectations and needs of older adults, caregivers, and healthcare professionals. Furthermore, there is a lack of accessible quality information and practical guidance for their use.

Purpose

The overarching goal of this research was to formulate recommendations for the use and development of apps and wearables that support ageing in place. Specific aims included:

- (a) Identifying commercially available apps and wearables that promote healthy ageing and autonomous living.
- (b) Systematically evaluating the quality of these technologies.
- (c) Assessing their ability to meet user requirements.

Methods

A web crawler was used to conduct a systematic search of the Google Play and iOS app stores using broad keyword categories relevant to ageing in place. The PRISMA framework guided the screening and selection process. Wearables were identified through:

1. Scientific literature reviews
2. Online searches (including product reviews)
3. Wearable-specific apps found in app stores

Researchers independently rated the quality of each app and wearable using a checklist combining the eHealth Suisse criteria, the System Usability Scale (SUS), and ethical/data security standards. They also assessed how well each technology addressed user expectations and needs identified in prior focus groups and interviews.

Results

A total of 14,987 apps were screened across categories including:

- Health and wellbeing
- Activity and mobility
- Social interaction
- Everyday support
- Information and education
- Safety and emergency management
- Early detection and diagnostics

Of these, 195 apps (1.3%) and 34 wearables were included in the quality evaluation. Only a small fraction were explicitly developed for older adults. The final phase of quality evaluation will conclude in November 2024.

Conclusions

While assistive technologies for older adults continue to grow, their quality must be rigorously evaluated prior to recommendation. Of the wearables reviewed in the scientific literature, few are commercially available or specifically targeted at the ageing population.

Implications for Practice

Guidelines for using apps and wearables to support ageing in place will be widely disseminated to older adults, caregivers, healthcare professionals, and policymakers. Recommendations for the development and refinement of assistive technologies will be published to further promote healthy ageing and independence.