A scoping review for assistive technologies for healthy ageing: A conversation

A. Hanson, H. H. Nap, the Pillar 1 Workgroup (Frank Knoefel – University of Ottawa; Fuad Abujarad, Yale School of Medicine; Jacqueline Damant, London School of Economics and Political Political Science; Maribel Pino, LUSAGE Lab; Pei-Lee The, Monash University; Shelly Fritz, WSU Vancouver; Stefanie Baisch, University of Siegen; W. Z. Huang, WHO; Helianthe Kort, Eindhoven University of Technology; Taiuani Marquine Raymundo, Universidade Estadual Paulista; Paul P. Freddolino, Michigan State University; Jessica Berner, Blekinge Tekniska Högskola;Johan Borg**,** Hogskolan Dalarna

Purpose In 2024,more than 2.5 billion people required one or more assistive products. It is estimated that by 2050, as the global population continues to age, over 3.5 billion people will require one or more assistive devices. Not only are assistive technologies (AT) one of the four pillars supporting global health, they are a critical element for the improvement of functioning by individuals with age- and health-related disabilities. These disabilities are recognized not only as global public health and human rights issues but also as consequences of the social determinants of health and as milestones for the sustainable development goals. However, determining the questions and how to effectively answer these questions requires both a transparent and rigorous methodological approach. This paper addresses the development of a framework to evaluate (or measure) the effectiveness or efficacy of gerontechnologies (GT) and assistive technologies (AT) to address effective ageing in place. **Method** Since we wanted to ensure transparency and rigour of the process, we used the PRISMA Scoping Review Protocol (Tricco et al., 2018) as our working map. Phase 1 is a beta stage to establish process and viability. The first step was to determine the question(s) to be addressed in this review and identify outcomes of interest. This required us to establish definitions, scope of review, and eligibility criteria. For example, successful adoption and use of hard, soft, or digital technologies by elderly people, who may have existing limits on function or physiology, must also address the behavioral and social components of these technologies. Categories of devices needed to be defined to allow the selection of validated measures and design/build standards to assess specific criteria of said technologies. Eligibility criteria were informed by condition or domain being studied, population, and possible intervention(s)/ exposure(s). Selection of information sources (academic and grey) and concept construction for the searches and translation were informed by definitions, scope, and eligibility criteria. An inter-rater reliability level of 80% will be met for the screening and data extraction processes. Sixteen (16) data items for extraction were identified, which were attributes describing: condition/domain; population; and intervention/exposure. Since this is a scoping review, there is no requirement for formal risk of bias or level of confidence assessment at the individual study level. **Results and Discussion** To date, we have established a preliminary scoping review protocol. However, when the test searches were run in PubMed alone, retrieval results numbered 50,000 plus records. Adding in the remaining 10 suggested databases, would result nearly double that amount. Hence, due to the scope of the proposed study, our next step is to revise the protocol into a main study, with several smaller focused areas, due to the complexity of the questions being asked, and the number of topics of interest to the workgroup. The main study will be an overview of ageing-in-place technologies, using both new experimental and observational studies (last 5 years), supplemented with existing review articles to build in a comprehensive view. Study design acceptability will be based on quantitative and qualitative designs which are conducted either as stand-alone studies (quantitative or qualitative) or as part of a larger mixed-methods approach. Inclusion criteria will focus on 1) specific population-oriented outcomes (clinical/cost-effectiveness or acceptability) and 2) design elements, which address acceptability, availability, affordability, or usability, again from a population-oriented perspective as well as design/build evaluative measures. The accompanying focused area studies under consideration may address 1) ethics, 2) policy/government initiatives, and 3) forecast/trends. We also now have access to Covidence, an essential tool for screening and extraction.

References

Tricco, A. C., Lillie, E., Zarin, W., et al. (2018). PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Annals of Internal Medicine, 169(7), 467-473. https://doi.org/10.7326/M18-0850

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Affiliation: USF Health Libraries, University of South Florida, United States of America
Email: hanson@usf.edu; **ORCID iD:** Hanson (0000-0003-4253-0424)
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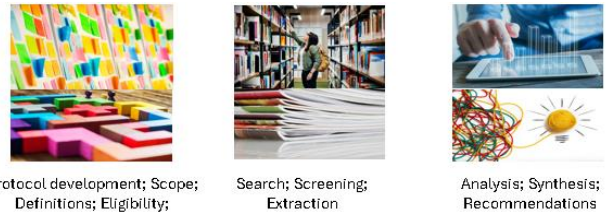

Figure 1. Overview of the proposal