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CONFERENCE ABSTRACT

Co-designing technology with elders: A systematic review

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Introduction: Co-designing healthcare technology or services has become mainstream. Co-design is patient–centred, as it considers their needs and requirements. Outputs can therefore be more relevant, improving uptake amongst end-users. In the advent of aging populations, there is now a growing interest in co-designing healthcare technology supporting elders to age in place. However, less is known about the health impact of these co-designed health technologies. The aim of this study is to evaluate the effectiveness of co-designed health technology supporting elders to age in place.

Theory/Methods: We conducted a systematic review to identify the impact of co-designed health technology on health and well-being outcomes. Secondary objectives were, i) to identify the co-design approaches used and in which contexts they emerge and, ii) to identify and describe barriers and facilitators of the co-design process with elders. Searches were conducted in MEDLINE, EMBASE, CINAHL, Science Citation Index (Web of Science), Scopus, OpenGrey and Business Source Premiere databases using MeSH terms and key words. Any studies describing the development of co-designed technology supporting aging in place with older adults (≥60 years) were eligible for inclusion. Both quantitative and qualitative data were extracted. Findings were summarised narratively.

Results: We identified 11,681 unique articles of which 28 studies provisionally met the eligibility criteria and were extracted. Studies were largely from Europe (n=23) and the remaining in America (n=1), Australia (n=3) and Canada (n=1). Of these, 17 studies targeted older adults (≥60 years old) and an additional 11 targeted specific medical conditions or concerns in older adults. Technological solutions included robotic devices providing social and assistive functions, online applications and software, SmartTV's, computer games for exercise and rehabilitation, global positioning solutions, smart home incorporating home and body sensors and design of care pathways. Nineteen studies evaluated products in a real-world setting and only six evaluated health related or well-being outcomes. Operationally, co-design approaches vary greatly and in the intensity of elder involvement. For example, only five studies used a living lab during the development process. Analysis of qualitative data showed mutual knowledge building is important for effective co-design. Using varied routes of engagement and prototypes can facilitate the process. Co-design also dispelled misconceptions that elders are poor technology designers and resolved end-user concerns of using technology, which may hinder later adoption.

Discussion: A limited number of studies evaluated health and well-being outcomes. Studies frequently reported high elder engagement, mutual knowledge building and acceptance of

technology by elders. This challenges stereotypes that elders are disinterested and incapable technology users.

Conclusion: Well-designed evaluations on the impact of applied co-designed technology are needed to establish the impact of such products.

Lessons learned: Co-design is an evolving methodology, which is frequently misinterpreted and misused in practice. The variation in co-design terminology and methodology further complicates the matter.

Limitations: The terminology and methodology surrounding co-design in health is complex and diverse, which may have led to us not identifying relevant articles.

Suggestions for future research: We identified a need for rigorous evaluation of co-designed aging in place technologies.