

Supportive and stimulating environments for older citizens

Citation for published version (APA):

Mohammadi, M., Dominicus, M. M. T., & Hammink, J. H. W. (2016). Supportive and stimulating environments for older citizens. *Gerontechnology, 15*, 37-37. <https://doi.org/10.4017/gt.2016.15.s.802.00>

DOI:

[10.4017/gt.2016.15.s.802.00](https://doi.org/10.4017/gt.2016.15.s.802.00)

Document status and date:

Published: 01/01/2016

Document Version:

Publisher's PDF, also known as Version of Record (includes final page, issue and volume numbers)

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

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J.H.W. HAMMINK, M.M.T. DOMINICUS, M.M. MOHAMMADI. **Supportive and stimulating environments for older citizens.** *Gerontechnology* 2016;15(suppl):37s; doi:10.4017/gt.2016.15.s.802.00 **Purpose** Stimulating healthy behaviour is important to enable ageing in place for older citizens. Using persuasive technology is one way to do this¹. This research is a first exploration of persuasive technology stimulating social, mental and physical health for older citizens at home. The goal is to give an overview state-of-the-art of existing persuasive technology for older citizens, based on a literature study^{2,3}. **Method** 27 Articles that have been examined for strategy, model or theory used, research field, target behaviour (physical, mental and/or social health²), use of Fogg's principles², type of research, and type of product or service. The articles have been selected by searching the Scopus database with the following words in title, abstract or keywords: 'persuasive' or 'behaviour change' and 'senior', 'elderly' or 'older adults' and 'technology', 'design' or 'product'; excluding 'middle aged'. A first selection revealed 62 articles. After reading all abstracts 35 articles were dropped, either because they were duplicates, did not deal with 'health' as target behaviour, did not have older citizens as target group or did not deal with any form of technology. Selected literature consisted of journal articles or conference papers, in English and published between 2006 and 2016. **Results & Discussion** Current literature focuses primarily on web-based features and relies heavily on the persuasive effect of self-monitoring on the behaviour of senior citizens. The literature review yielded the following results: (i) the vast majority of the papers (17 out of 27) aimed at improving the physical health of the older citizen. (ii) Stimulating mental or social well-being was only mentioned in nine papers. (iii) The age and definition of the 'older citizen' varied greatly within research. Ranging in total from 45 to 89 years, even though research also shows difference in reaction to persuasion between different age groups of older citizens. The research examined was in most cases in an early stage, and was either experimental or design research. Many of the articles discussed a product or service (20 out of 27), of which most discussed a web-based feature such as an app or webpage (respectively 11 and 6). Most of the selected literature originated from the field of computer sciences (resulting in these web-based programs and/or apps), in some cases combined with medical expertise, with only a small number coming from the field of design research. This is reflected by the methods used, which are often models from either computer science (mostly Fogg's principles²) or health (Elaboration Likelihood Model⁴). The principles for persuasion that have been identified by Fogg in his work on persuasive technology are reduction, tunnelling, tailoring, suggestions, self-monitoring, surveillance and conditioning. The state-of-the-art shows a heavy reliance on the persuasive effect of self-monitoring of behaviour of senior citizens. This state-of-the-art shows that there are many avenues for further research that could stimulate and support ageing in place. Firstly, a wider variety of products than just webpages and apps should be explored. Secondly, persuasive technology focusing on principles other than self-monitoring might contribute to a richer and more effective persuasive product. Moreover, a broader perspective on health, which goes beyond physical health and activity, will contribute to older citizen's general well-being for ageing in place. Lastly, the persuasive effect of Fogg's principles might be enhanced by the current developments in smart home technology.

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Keywords: persuasive technology, older citizens, review

Address: University of Applied Sciences Arnhem & Nijmegen, Arnhem, Netherlands;

E: coosje.hamminck@han.nl