

OPP: DEMENTIA & TECHNOLOGY

What has changed in nearly 3 decades of technical developments for persons with dementia?

A. van Berlo

Purpose As a biomedical engineer, the author started to work in Gerontechnology in 1993. For his MA thesis in gerontology in 1997, 11 in-depth interviews were conducted with informal caregivers and the results were categorised into several technical requirements and proposed technical solutions of the time. Thirty years later, 11 in-depth interviews were conducted again with informal carers and some people with moderate dementia, after they had implemented some technical solutions of the present. Here, the deployments of technologies are part of the EU funded project SMILE (Smart Inclusive Living Environments). All persons with moderate to severe dementia have been recruited by care organization tanteLouise (Bergen op Zoom, The Netherlands) that tries to prolong independent living because of shortage of care personnel. **Method** Between mid 2022 and spring 2023, some 150 persons with dementia had received one or two products, ranging from smart GPS watch, mobile personal alarm, monitoring of daily activities, day structuring devices to medication reminders. From a questionnaire on 112 persons, 50 responded. Half a year later, end of 2023, 11 of these 50 persons were visited for an in-depth interview. **Results and Discussion** The overall findings are: For the most part, products are used for increasing the feeling of security at both the person with dementia and the informal caregiver. The physical health of respondents often remains the same, the feeling of self-reliance has increased for more than half of the persons with dementia, as has the feeling of well-being. By using the technology the feeling of security indoors is good or very good for almost all respondents. The feeling of security outside the home is moderate or poor for about 60% of the persons with dementia. All informal caregivers indicate that the persons with dementia cannot entertain themselves sufficiently anymore: reading newspaper or book, watching a movie on TV, puzzles have in most cases become impossible. Often the person with dementia is being helped, but this does not relieve the burden of care. When looking at the expected impacts of SMILE, i.e. deploying solutions which enable older people to live an independent and active life feeling a high degree of meaningfulness and wellbeing, both the questionnaire and the 11 in-depth interviews indicate that some persons with moderate to severe dementia might indeed feel a higher degree of wellbeing. Others do not experience any difference due to their frailty and inability to use the technology properly. Most informal caregivers do feel a higher degree of meaningfulness and wellbeing. Another goal of the SMILE ecosystem, i.e. the way solutions are deployed will support social interactions and reduce the risk of exclusion, seems to be achieved in many cases: most persons with moderate to severe dementia are able to leave their house independently. The informal caregivers can always trace the person they care for. The devices give confidence to many persons with dementia to walk around in their neighborhood, chat with other people and feel less excluded. Thirty years ago this was not possible: a GPS box weighted 20 kgs and was only installed in big trucks. After 3 decades, GPS is embedded in a watch. Also, 30 years later, with AI, a 5th principle of Ethics has been added: The principle of Explicability. So, miniaturization and use of big data have enormously increased possibilities of persons with dementia, but still many problems have remained unsolved and ethical concerns have increased.

References

Berlo, A. van (1997) *Technology Ethics and Dementia MA Thesis Benelux University*

Keywords: dementia, technology, informal caregivers

Address: R&D, Smart Homes, The Netherlands

Email: a.vberlo@smart-homes.nl & gmwvanberlo@gmail.com

Acknowledgement: This research has received funding from the European Union's Horizon 2020 Research and Innovation programme, under Grant Agreement n° 101016848.