Activity of the Elderly in an Eight-Week Case Study: A Health Enhancing Tablet-Based Service

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ABSTRACT

This study explores the engagement of the elderly with a new health-enhancing mobile-optimised web-service: An eight-week case study was carried out. Participants of the study were elderly people: 45 females and 19 males with the average age of 72.3 (SD 5.2) years. Their baseline information and communication technology experiences were evaluated, the data of using each service component was saved to a server and the usability of the service was evaluated. The majority of the users remained active throughout the study. The most frequently used components in the study were memory puzzles and physical exercise. The usability of the components was correlated with the age of the participants. Their total activity was not correlated with the baseline technological activity or age. Inexperienced technology users might benefit from the service, which is easy to use and the contents of which are interesting. Their relatively short training may have a major positive influence on engagement to service use.

Keywords: eHealth, Elderly, Health Behaviour, mHealth, Mobile Technology, Tablet Computer

INTRODUCTION

Challenge for Societies: Supporting the Elderly’s Wellbeing

In the coming decades, the number of elderly people will continue to increase enormously. It will obviously create opportunities for new services, but there will be more challenges to make them suitable for the elderly. It is predicted that in the European Union the size of the group aged over 65 years will be approximately 10% larger in 2080 than today. Also, the number of those over 80 years of age will significantly increase (Eurostat, 2015). As people get older, their need for support will be greater. Even if just a minority of the elderly use digital services, it probably will decrease the costs of health services and help the societies to cope with the changing dependency
Increasing lifespan is a challenge for societies, and the wellbeing and the quality of life of the elderly are important factors to consider. If the elderly had the adequate tools to maintain and improve their motivation to enhance their health behaviour, they would probably be able to keep up their autonomous lifestyle longer. Services that help in this might be beneficial not only for the individual but also for the society. From a national perspective, the Finnish Ministry of Social Affairs and Health has provided instructions and recommendations for developing services for the elderly: the elderly’s involvement in this process should be increased, and the content in question should be interesting and easily adopted. The services should take a preventive approach to maintain the health behaviour of older people (The Finnish Ministry of Social Affairs and Health 2013).

Commonly Held View about Wellbeing of the Elderly

One of the most important parts of functionality maintenance is to do with improving the physical activity of elderly, through, for example, self-monitoring (ACSM & AHA, 2007). Physical activity has been found to positively affect longevity. This is due to the preventive effect of physical activity to various diseases (e.g., cardiovascular, type 2 diabetes, depression) and also to cognitive impairment. One important fact in this context is that maintaining physical functionality reduces risk of falls (Gremeaux et al., 2012). Physical capacities of the elderly are often weakened, but physical exercise is relevant for older people in spite of an impairment or a disease: e.g., the walking skills of patients suffering from Parkinson’s disease have been improved through a five-week intervention (Bello et al., 2013), and the quality of life has been found to improve significantly by just short, 4 x 30 minutes per week, exercise training (Herman, Giladi, Gruendlinger, & Hausdorff, 2007). Individual skills and different aspects of functional capacity have to be taken into account when devising activities for the target group. The idea of supporting functionality comprehensively is relevant because of the dependency of the attributes of functionality e.g., on physical activity, which has been found to decrease dementia risk in people over 85 years old (Wang, Luo, Barnes, Sano, & Yaffe, 2014). Their study concluded that physical activity is relevant for elderly persons, not only to maintain physical performance but also to prevent serious memory disorders.

EHealth: The Requirements of Elderly Consumers

Many aspects affect successful aging, and digital services could be one way to encourage older people to take a greater interest in their own health. ICT technology has been used with promising results e.g., in improving physical activity (Silveira, van het Reve, Daniel, Casati, & de Bruin, 2013) and cognitive skills of the elderly (Herrera, Chambon, Michel, Paban, & Alescio-Lautier, 2012; Olchik, Farina, Steibel, Teixeira, & Yassuda, 2013). Technology acceptance by the elderly depends on the perceived usefulness and simplicity of a service (Chen & Chan, 2014). In our study, the service development was user-centric to help in finding an interesting service for the target group. The acceptance of a service is important for user compliance. From the point of view of health and wellbeing, the service should encourage active lifestyle, and in that way it could affect the functionality of the elderly. Possible limitations are often related to older adults, e.g., health literacy required for applications which target self-care in disease management. Motivation to use health technology is of high importance, so the contents of the service should be designed based on the wishes of the elderly.

The digital framework should not be the only way to access the services, because not all the elderly are capable and interested in using digital services. The added value of technology for users should be critically taken into account; the contents of the services could be more versatile,
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