

A. DILARA, A. HERNANDEZ, A. ASTELL. Design recommendations for a self-care app to be used by people with cognitive challenges. *Gerontechnology* 2018;17(Suppl):78s; <https://doi.org/10.4017/gt.2018.17.s.078.00>

Purpose Touch-screen based applications offer sophisticated solutions to older adults (OA) with cognitive challenges for activities in their daily life such as leisure and entertainment¹, reading the newspaper, browsing online resources², memorizing tasks/setting reminders^{3,4} or communicating with others⁵. However, factors that affect adoption of these types of programs for people with cognitive decline have not been thoroughly explored^{6,7}. A mixed methods study was conducted to identify issues concerning the design and usability of a self-care app for older adults with cognitive decline (*Figure 1*). **Method** Six dyads comprising an older adult with cognitive challenges and a family member were recruited from geriatric outpatient services and community programs for seniors. Dyads were trained on the app twice at baseline and at six weeks; four dyads completed the twelve-week long trial. Four standard measures were used to assess pre-post changes of cognition, occupational health, dyad-relationship and perceived usability of the app. Data on frequency, duration, and type of functions were obtained from user's account logs (*Figure 2*). In-depth interviews at six and twelve weeks investigated user's app-experiences such as challenges in using the program and suggestions for improving the design. **Results & Discussion** Descriptive analysis of quantitative data did not show any change over twelve weeks of app usage but user's baseline cognitive scores were found to relate to their ability to use the app independently. Three caregivers with normal cognition and one care-recipient with mild cognitive impairment used the app independently. However, 75% of users mentioned they would continue using the app after trial. The app was mostly used for leisure activities such as playing games and almost all users found the contents useful. Challenges were mostly due to complexity of the functions, lack of skill, insufficient training, physical and cognitive status of users such as remembering complex password or using virtual keyboard, app-choices or irrelevance of some contents to user's personal choices. At least two users had issues with the device such as smaller buttons and too sensitive or smaller screen. Simplification of the functions, a clue/hint during use, skill-based training, user manual, removal of password or alternate options to log-in (such as voice command) and add/remove functions to personalize the app were suggested by users. In conclusion, this study identified design issues of a digital self-care app that affected its usability among the sample population. The users suggested the app should be easy, entertaining, have larger fonts or icons and the contents must be relevant to their needs and choices.

References

1. Menne H, Johnson J, Whitlatch C, Schwartz S. Activities, Adaptation & Aging. 2012;36(3):195-213. <https://doi.org/10.1080/01924788.2012.696234>
2. Lim F, Wallace T, Luszcz M, Reynolds K. Gerontology. 2013;59(2):174-182. <https://doi.org/10.1159/000343986>
3. Robinson L, Brittain K, Lindsay S, Jackson D, Olivier P. International Psychogeriatrics. 2009;21(3):494. <https://doi.org/10.1017/s1041610209008448>
4. Imbeault H, Bier N, Pigot H, Gagnon L, Marcotte N, Fulop T, Giroux S. Electronic organiser and Alzheimer's disease: Fact or fiction?. *Neuropsychological Rehabilitation*. 2014 Jan 2;24(1):71-100. <https://doi.org/10.1080/09602011.2013.858641>
5. Torkamani M, McDonald L, Aguayo IS, Kanioc C, Katsanou MN, Madeley L, Limousin PD, Lees AJ, Haritou M, Jahanshahi M. A randomized controlled pilot study to evaluate a technology platform for the assisted living of people with dementia and their carers. *Journal of Alzheimer's Disease*. 2014 Jan 1;41(2):515-523
6. Mountain G. *Dementia*. 2006;5(3):429-446. <https://doi.org/10.1177/1471301206067117>
7. Tyack C, Camic P. *International Psychogeriatrics*. 2017;29(08):1261-1280 <https://doi.org/10.1017/s1041610217000667>



Figure 1. App Home screen

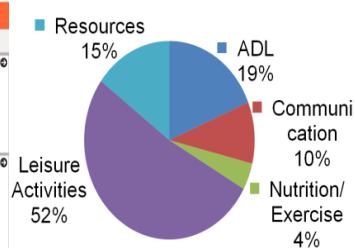


Figure 2. Functions used

Keywords: touchscreen, app, cognition, design, self-care

Address: University of Toronto, Canada;

E: anar.dilara@mail.utoronto.ca