

AB030. Usability of ArtontheBrain: A visual-arts based mobile health solution to promote quality of life in older adults with low vision due to age-related macular degeneration

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Background: Taking part in productive and enjoyable recreational activities has been shown improve quality of life for people of all ages and capabilities. However, vision loss can have a significant impact on participation in important leisure activities. This is especially the case for the elderly, whose lowered mobility is further impacted by vision loss. Technology can offer solutions to bridging some barriers caused by these deficits by bringing leisure activities to the user in the form of mobile applications. As such, the purpose of the present study was to evaluate the accessibility and usability of the ArtOnTheBrain application, a visual art based mobile health solution to promote brain health and well-being, by older adults with low vision due to age-related macular degeneration (AMD).

Methods: There were a total of 16 participants (age range, 65–93 years, M=79, 10 males). All had a diagnosis of AMD with visual acuities in the better eye between 20/60 and 20/200. Additionally, all participants had accessed rehabilitation services and most had experience using a computer at home. Using an Apple iPad Air (2013), they

were asked to interact with the ArtOnTheBrain website's Learn (e.g., Listen to artwork description) and Play (e.g., complete a word-search game) features with either the Safari or Google Chrome Internet apps. Using the Concurrent Think Aloud method, participants were asked to continuously comment on their activities and experiences with the app and verbalize their internal monologue while being audio and video recorded. These recordings were later transcribed verbatim and analysed using qualitative description and thematic analysis.

Results: Participants' behaviours and verbal feedback were divided based on whether they presented as barriers or facilitators. Beginning with barriers, these were mostly related to the accessibility of the visual aspects of the applications interface (i.e., contrast and font size), whereby participants requested additional control over the magnification options, both for text as well as images of the artwork. The main facilitator was the audio option built into the Learn tab, which allowed participants to listen to the artwork descriptions. Facilitators also included the aesthetics of the app, the perceived boost in confidence in interacting with technology, and the educational and leisure benefits.

Conclusions: Older adults with low vision are faced with a decreased ability to engage in leisure activities. The development of technologies aimed at increasing the accessibility of leisure activities for these individuals is an important step in increasing their quality of life. As such, despite some of the accessibility challenges, the majority of participants viewed ArtontheBrain positively. Identifying the barriers and facilitators to its use is an important step in the development of this application in order to optimize its accessibility for older adults with low vision. Future work to be done with this application will be to evaluate the cognitive impact of ArtontheBrain on low vision users.

Keywords: Quality of life; leisure activities; vision loss; mobile health solutions

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