

Abstract

Introduction: The effect of cognitive training on cognitive performance has been of interest to researchers for many years. Training is most often targeted at attention, working memory, or executive functions that are affected by age. The goal is usually not only to test whether it is possible to improve performance on the trained task, but also on other untrained tasks that are assumed to be related to the trained task. Given the aging of the population, these interventions are increasingly targeting the older adults.

Aim: The study aims to examine the effects of training visual selective attention and working memory using Filter It – our version of the canonical Change Detection Task (CDT) for a mobile device, the tablet.

Method: The sample consisted of 62 older adults aged 60-75 years, who were divided into experimental and active control group through the block randomization. The experimental group trained using the Filter It application, and the active control group trained using the Clouds application. The aim was to examine the effectiveness of a 6-week individual visual adaptive CDT training administered on a tablet, in terms of specific training improvements (Filter It – Colors and Shapes paradigms) and transfer effect on measures of working memory (Letter Number Sequencing, Visual Patterns Test) and executive control (the Prague Stroop Test, the Trail Making Test).

Results: Older adults were able to improve their performance on both the trained and untrained Filter It tasks, and these improvements persisted over the long term (i.e., 6 months apart). The experimental group was able to improve their performance on a measure of inhibitory control (PST-C), but the evidence for the effect was anecdotal and did not persist over time. There was no evidence of a transfer effect on working memory and executive control, either immediately or in long-term.

Conclusion: The present study supports the evidence for the ability to improve performance on trained cognitive tasks in older age.

Key words: aging, working memory, selective visual attention, executive functions, Change Detection Task, cognitive training.