

76 The Effects of Strategies-Based Training in Improving Memory Outcomes in Healthy Older Adults

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Objective: The goal of our study was to examine the possible effects of a strategies-based training intervention on objective memory performance and subjective memory in healthy older adults. While slight declines in memory naturally occur in the aging process, these changes may impact the quality of life for older adults.

Participants and Methods: Patients ($n = 11$, aged 50-80, mean age = 70.73, $SD = 4.41$) with subjective memory complaints were recruited from memory clinics within an academic medical center. All participants engaged in one-on-one, three one-hour memory training sessions over the course of several weeks to undergo strategies-based training intervention (e.g., mnemonics). All participants completed neuropsychological battery of tests at baseline and at post-intervention (about 8-10 weeks after baseline). Tests included the Montreal Cognitive Assessment (MoCA), the Hopkins Verbal List Test (HVLT-R), the Visual Reproduction subtest of the Wechsler Memory Scale (WMS-IV), and the Multiphasic Memory Questionnaire.

Results: Data were analyzed using a mixed between-within subjects ANOVA and t -tests. Groups were created based on the participant's MoCA score. While a total of 11 participants completed baseline testing and the memory training sessions, two did not return for post-intervention testing; as such their data were excluded from analyses. Older adults with a MoCA score of 26-30 ($n = 6$), but not older adults with a MoCA score 25 and below ($n = 3$), had a significant improvement in visual learning and encoding, $F(1, 7) = 10.028$, $r = .50$, $p < .05$. The high MoCA performers demonstrated an improved performance in their immediate visual memory from baseline ($M = 10$, $SD = 3.53$) to post-intervention ($M = 12$, $SD = 3.35$), $t(9) = .895$, $p = .001$ (two-tailed). Ratings of memory satisfaction among high MoCA performers also increased from baseline ($M = 48$, $SD = 11.47$) to post-intervention ($M = 51$, $SD = 5.43$), $t(9) = .707$, $p < .05$ (two-tailed). Among both groups, a significant increase in perceived memory ability was demonstrated from baseline ($M = 50$, $SD =$

10.1) to post-intervention ($M = 54$, $SD = 12.35$), $t(8) = .807$, $p < .05$ (two-tailed).

Conclusions: These findings indicate that a brief memory training program may improve visual encoding and subjective memory in healthy older adults with memory concerns. Individuals with subjective memory concerns who undergo a cognitive training program seem to demonstrate improved encoding of nonverbal material. These participants also reported a greater memory satisfaction and improved perceived memory ability after completion of a memory training program. Interestingly, these findings were only seen in adults whose MoCA performance was within normal limits. Although a systematic review suggests the improvement of memory performances on cognitively impaired participants (Simon, Yokomizo, & Bottino, 2012), this may not have been demonstrated in the current study due to a low sample size and/or to the brief duration of the cognitive training. Future directions include increasing sample size and offering booster sessions to explore whether cognitively impaired adults may benefit from repetition.

Categories: Cognitive Intervention/Rehabilitation

Keyword 1: memory training

Keyword 2: mild cognitive impairment

Keyword 3: aging (normal)

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77 Feasibility and Effectiveness of a Telehealth-Delivered Inductive Reasoning Training Program for Older Adults

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Objective: Inductive reasoning training has been found to be particularly effective at improving inductive reasoning, with some evidence of improved everyday functioning and driving. Telehealth may be useful for increasing access to, reducing time and travel burdens of,

and reducing the need for physical spaces for cognitive training. On the other hand, telehealth increases technology burden. The present study investigated the feasibility and effectiveness of implementing an inductive reasoning training program, designed to mimic the inductive reasoning arm used in a large multi-site clinical trial (Advanced Cognitive Training for Independent and Vital Elderly (ACTIVE)), via telehealth (using Zoom and Canvas as delivery platforms).

Participants and Methods: 31 older adult participants (mean age = 71.2, range = 65-85; mean education = 15.5, range = 13-18; 64.5% female; 87.1% white) received 10-sessions of telehealth-delivered inductive reasoning training over 5 weeks. Comparison groups (inductive reasoning trained and no-contact controls) were culled from the in-person ACTIVE trial via propensity matching. All participants completed three pretest and posttest inductive reasoning measures (Word Series, Letter Series, Letter Sets), as well as a posttest measure assessing participant perceptions of the telehealth intervention. In addition, at the end of each of the ten training sessions, participants received a final inductive reasoning assessment.

Results: Telehealth participants provided high levels of endorsement suggesting that the telehealth training program was useful, reliable, easy to use and interact on, and employed a useable interface. Participants were generally satisfied with the training program. With regard to performance, telehealth participants demonstrated greater gains than untrained controls on Letter Series [$F(1, 116) = 9.81, p = 0.002$, partial eta-squared = 0.084] and Letter Sets [$F(1, 116) = 8.69, p = 0.004$, partial eta-squared = 0.074], but did not differ in improvement on Word Series [$F(1, 116) = 1.145, p = 0.287$, partial eta-squared = 0.010]. Furthermore, telehealth participants evinced similar inductive reasoning gains as matched in-person inductive reasoning trained participants on Letter Series [$F(1, 116) = 1.24, p = 0.226$, partial eta-squared = 0.01] and Letter Sets [$F(1, 116) = 1.29, p = 0.259$, partial eta-squared = 0.01], but demonstrated fewer gains in Word Series performance [$F(1, 116) = 25.681, p < 0.001$, partial eta-squared = 0.181]. On the end-of-session reasoning tests, telehealth-trained participants showed a similar general pattern of improvement across the ten training sessions and did not differ significantly from in-person trained comparison participants.

Conclusions: Cognitive training via telehealth evinced similar gains across nearly all measures as its in-person counterpart. However, telehealth also led to substantial challenges regarding the telehealth training platform. Despite these challenges, participants reported perceiving increased competence with computer use, peripherals (mice, trackpad), and videoconferencing. These may be ancillary benefits of such training and may be maximized if more age-friendly learning management systems are investigated. Overall, this study suggests that telehealth delivery may be a viable form of cognitive training in inductive reasoning, and future studies could increase performance gains by optimizing the online training platform for older adults.

Categories: Cognitive Intervention/Rehabilitation

Keyword 1: aging (normal)

Keyword 2: technology

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78 BVMT-R Learning Ratio Moderates Cognitive Training Gains in Useful Field of View Task in Healthy Older Adults

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Objective: Cognitive training using a visual speed-of-processing task, called the Useful Field of View (UFOV) task, reduced dementia risk and reduced decline in activities of daily living at a 10-year follow-up in older adults. However, there is variability in the level of cognitive gains after cognitive training across studies. One potential explanation for this variability could be moderating factors. Prior studies suggest variables moderating cognitive training gains