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
Correspondence: Brad Taylor, University of Florida, brad.taylor@ufl.edu

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

Cheshire Hardcastle[1,2], Jessica N. Kraft[1], Hanna K. Hausman[1], Andrew O'Shea[1], Alejandro Albizu[1], Nicole D. Evangelista[1], Emanuel Boutzoukas[1], Emily J. Van Etten[3], Pradyumna K. Bharadwaj[3], Hyun Song[3], Samantha G. Smith[3], Eric Porges[1], Steven DeKosky[1], Georg A. Hishaw[3], Samuel Wu[1], Michael Marsiske[1], Ronald Cohen[1], Gene E. Alexander[3], Adam J. Woods[1]
[1]University of Florida, Gainesville, FL, USA. [2]University of Chicago, Chicago, IL, USA. [3]University of Arizona, Tucsan, AZ, USA

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

https://doi.org/10.1017/S1355617723002825 Published online by Cambridge University Press

share features of the training task. Learning trials of the Hopkins Verbal Learning Test-Revised (HVLT-R) and Brief Visuospatial Memory Test-Revised (BVMT-R) recruit similar cognitive abilities and have overlapping neural correlates with the UFOV task and speed-of-processing/working memory tasks and therefore could serve as potential moderators. Exploring moderating factors of cognitive training gains may boost the efficacy of interventions, improve rigor in the cognitive training literature, and eventually help provide tailored treatment recommendations. This study explored the association between the HVLT-R and BVMT-R learning and the UFOV task, and assessed the moderation of HVLT-R and BVMT-R learning on UFOV improvement after a 3-month speed-of-processing/attention and working memory cognitive training intervention in cognitively healthy older adults.
Participants and Methods: 75 healthy older adults (M age = 71.11, SD = 4.61) were recruited as part of a larger clinical trial through the Universities of Florida and Arizona. Participants were randomized into a cognitive training (n=36) or education control (n=39) group and underwent a 40-hour, 12-week intervention. Cognitive training intervention consisted of practicing 4 attention/speed-of-processing (including the UFOV task) and 4 working memory tasks. Education control intervention consisted of watching 40-minute educational videos. The HVLT-R and BVMT-R were administered at the pre-intervention timepoint as part of a larger neurocognitive battery. The learning ratio was calculated as: trial 3 total - trial 1 total/12 - trial 1 total. UFOV performance was measured at pre- and post-intervention time points via the POSIT Brain HQ Double Decision Assessment. Multiple linear regressions predicted baseline Double Decision performance from HVLT-R and BVMT-R learning ratios controlling for study site, age, sex, and education. A repeated measures moderation analysis assessed the moderation of HVLT-R and BVMT-R learning ratio on Double Decision change from pre- to post-intervention for cognitive training and education control groups.
Results: Baseline Double Decision performance significantly associated with BVMT-R learning ratio (β=-.303, p=.008), but not HVLT-R learning ratio (β=-.142, p=.238). BVMT-R learning ratio moderated gains in Double Decision performance (p<.01); for each unit increase in BVMT-R learning ratio, there was a .6173 unit decrease in training gains. The HVLT-R learning ratio did not moderate gains in Double Decision performance (p>.05). There were no significant moderations in the education control group.
Conclusions: Better visuospatial learning was associated with faster Double Decision performance at baseline. Those with poorer visuospatial learning improved most on the Double Decision task after training, suggesting that healthy older adults who perform below expectations may show the greatest training gains. Future cognitive training research studying visual speed-of-processing interventions should account for differing levels of visuospatial learning at baseline, as this could impact the magnitude of training outcomes.

Categories: Cognitive Intervention/Rehabilitation
Keyword 1: aging (normal)
Keyword 2: learning
Correspondence: Cheshire Hardcastle, University of Florida, chardcastle@ufl.edu

79 The Effects of Mobile Based Resonant Frequency Breathing on Cognitive Performance in Healthy Young Adults with Elevated Stress

Daniel G Saldana[1,2], Safa Shehab[3], Joel R Sneed[4,5]
[1]Department of Psychiatry at the Geffen School of Medicine, Los Angeles, California, USA. [2]HNCE, Semel Institute, Los Angeles, California, USA. [3]NYU Langone Health Comprehensive Epilepsy Center, NYC, NY, USA. [4]The Graduate Center, City University of New York, NYC, NY, USA. [5]Queens College, City University of New York, NYC, NY, USA

Objective: Finding effective, innovative, and accessible methods of coping with and mitigating stress has been increasingly relevant in the midst of the COVID-19 pandemic. To do so, it is important to understand the impact of acute stress responses on cognition, behavior, and emotional functioning. The young adult population in particular has been known to show higher levels of stress. Studies have shown that deep breathing interventions are associated with improved affect, decreased stress levels, and improved cognitive functioning. The autonomic nervous system, particularly the functioning of

https://doi.org/10.1017/S1355617723002825 Published online by Cambridge University Press