The science

behind Constant Therapy

FEATURED RESEARCH

Home-based electronic cognitive therapy in patients with Alzheimer's disease dementia: A feasibility study

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HIGHLIGHTS

METHODS

- Study conducted by the Center for Translational Cognitive Neuroscience at the Veterans Affairs Boston Healthcare System in collaboration with Boston University School of Medicine's Alzheimer's DIsease Research Center and Department of Behavioral Neuroscience

- 19 patients total were enrolled, all between 50 and 90 years of age with a diagnosis of mild cognitive impairment (MCI) secondary to Alzheimer's disease or mild Alzheimer's dementia

- Patients were randomized into an experimental group, which used Constant Therapy for 6 months (24 weeks), or the active control group, which did paper and pencil games such as crosswords, word search, Sudoku, and other math puzzles for 6 months (24 weeks)

- Both groups received weekly check-in phone calls

- Patients were assessed using the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) every 6 weeks

RESULTS

- Constant Therapy group had an 80% adherence to the program over the 6 months, whereas the active control group had a 55% adherence

- Constant Therapy group improved on the RBANS coding subtest and showed an overall, statistically significant improvement in accuracy and latency on their scores within Constant Therapy, especially in the areas of visual and auditory memory, attention, and arithmetic

- On average, patients spent 31.70 minutes on Constant Therapy per day

- This study demonstrates feasibility, in that patients with MCI and AD/ADRD are able to utilize a home-based, self-administered exercise program; further research is warranted to continue to investigate the efficacy of such a program for this population
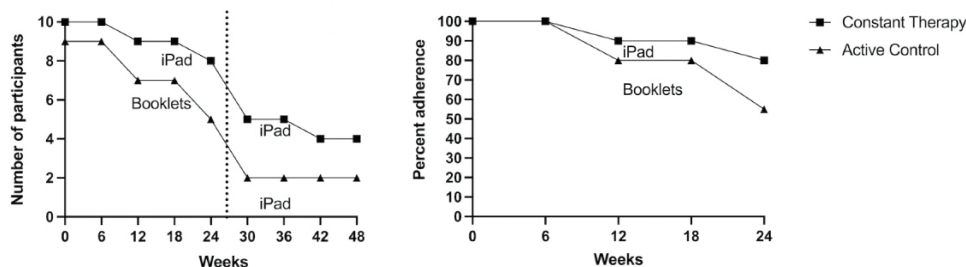

Figure 1 Study adherence.

Select research published using Constant Therapy

Liu, H., Cordella, C., Ishwar, P., Betke, M., Kiran, S. **Consistent long-term practice leads to consistent improvement: Benefits of self-managed therapy for language and cognitive deficits using a digital therapeutic.** Frontiers in Digital Health, 2023; 5. https://doi.org/10.3389/fdgth.2023.1095110

Cordella C, Munsell M, Godlove J, Anantha V, Advani M, Kiran S. **Dosage Frequency Effects on Treatment Outcomes Following Self-managed Digital Therapy: Retrospective Cohort Study** J Med Internet Res 2022;24(7):e36135 https://www.jmir.org/2022/7/e36135 doi: 10.2196/36135

Postman, W. A., Fischer, M., Dalton, K., Leisure, K., Thompson, S., Sankey, L., Watkins, H. **Coupling hearing health with community-based group therapy for cognitive health in low-income African American Elders.** Perspectives of the ASHA Special Interest Groups. 2022; (SIG8):1-13. https://doi.org/10.1044/2021_PERSP-21-00110

Dadgar-Kiani, E & Anantha, V. **Continuously-encoded deep recurrent networks for interpretable knowledge tracing in speech-language and cognitive therapy.** medRxiv, 2020. doi:10.1101/2020.11.08.20206755

Edgar, D. & Bargmann, P. **Clinical study of the effectiveness of Constant Therapy in the treatment of clients with dementia: Implications for telepractice.** Perspectives of the ASHA Special Interest Groups. 2021; 6(SIG 18):691-703. https://doi.org/10.1044/2021_PERSP-20-00123.

Braley, M., Sims Pierce, J., Saxena, S., De Oliveira, E., Tarabonata, L., Anantha, V., Lakhan, S., Kiran, S. **A Virtual, Randomized, Control Trial of a Digital Therapeutic for Speech, Language, and Cognitive Intervention in Post-stroke Persons With Aphasia.** Frontiers in Neurology, 2021; 2:12. doi: 10.3389/fneur.2021.626780

Munsell, M., De Oliveira, E., Saxena, S., Godlove, J., Kiran, S. **Closing the digital divide in speech, language, and cognitive therapy: Cohort study of the factors associated with technology usage for rehabilitation.** Journal of Medical Internet Research, 2020; 22:2. doi: 10.2196/16286.

Godlove, J., Anantha, V., Advani, M., Des Roches, C., Kiran, S. **Comparison of therapy practice at home and in the clinic: A retrospective analysis of the Constant Therapy platform data set.** Frontiers in Neurology, 2019. doi: 10.3389/fneur.2019.00140