Treatment & Research

Schizophrenia & Psychosis

happyneuron

Duration, Frequency, Intensity Meta-Analysis

This complied meta-analysis aims to identify structures necessary for maximizing the effectiveness of an adaptable cognitive training program for different disorders and diseases.

More specifically, we compiled the current research to answer these overarching questions:
- How much should someone train to significantly improve his/her cognitive profile?
- Is there an ideal regimen or approach to brain training that produces the optimal results?

Research has proven that brain training conducted in certain criteria may yield positive results for certain populations. As with any form of rehabilitation, cognitive training exercises' duration, frequency, and intensity should be determined based on appropriate diagnosis/assessment. These assessments and diagnoses should be completed by a trained professional with the individual functional needs of the individual in mind.

Disclosure:
This meta-analysis aims to create a place for clinicians to find the research connected with brain training easily. HappyNeuron is not claiming that participating in any form of brain training will result in higher functions, full recovery, or delayed disease onset. The information below is non-bias compliance of the evidence of computerized brain training to be used as a source reference or a supporting document for clinicians to use to help with the care of their clients. Some of this research uses our product, while others use other digital tools.

Schizophrenia + Psychosis

Over the past several years, our industry has recognized the urgent need to develop treatments for the cognitive deficits of individuals with schizophrenia and psychosis. This global research has concluded that improving cognitive deficits is critical to guarantee positive functional outcomes for this patient population. Disclosure: Some of this research uses our product, while others use other digital tools.

Common Cognitive Deficits of Individuals with Schizophrenia

Dysfunctions in working memory, attention, processing speed, visual and verbal learning with a substantial deficit in reasoning, planning, abstract thinking, and problem-solving have been extensively documented in schizophrenia. According to some estimates, almost 98% of patients suffering from schizophrenia have such impairments and fall short of their predicted cognitive function (Tripathi, 2018).

Meta-Analysis of Research

It was shown that individuals who underwent targeted cognitive training showed significant increases in Working Memory, Verbal Learning, Memory, and Social Cognition.

Current Research highlights that subjects who were engaged in cognitive training showed significantly greater improvement in Verbal Learning and Memory measures from baseline to a 6-month follow-up assessment, which highlights the durability of these positive training effects beyond the immediate post-training period. Furthermore, improved cognition was significantly associated with improved quality of life at 6 months (Genevsky, 2010). Recent years witnessed significant innovations in cognitive remediation strategies in Schizophrenia.

Improved Auditory and Verbal Processing

Computerized cognitive training has been shown to yield improved statistics on Auditory and Verbal Processing results in individuals experiencing schizophrenia. To see significant improvement in specifically global cognition, a higher rate of training may be needed to generalize to real-life situations. Meta-analyses have shown that in Verbal Memory, larger effect sizes are obtained when computerized training is given in a drill-and-practice approach for many hours. This suggests that computerized cognitive remediation given in a sufficiently large quantity may be a highly important approach in schizophrenia.

Greater Improvement for Social Competence

In Bowie's study referenced below, neurocognition improved with durable effects after cognitive remediation. Improvements in functional competence were greater and more durable with combined treatment. Social competence improved with functional skills training and combined treatment but not with cognitive remediation alone (Bowie). This data indicates when cognitive remediation is combined with functional skills training such as social skills training and vocational rehabilitation, statistically significant improvements from baseline to end of treatment and follow-up have shown to be evident.

Cognitive remediation can be an effective treatment for schizophrenia and improves real-world generalization and behavior change when paired with additional psychosocial treatments. This is a highly important approach to both psychosis and schizophrenia. Although this data on cognitive training in schizophrenia deems promising, it may require replications with larger, more representative samples.

Recommendations

Due to the improved results revealed from these evidence-based studies, HappyNeuron Pro recommends 1 hour a day, 5 days a week, for individuals dealing with psychosis or schizophrenia.

A total of 50 hours of neuroplasticity-based computerized cognitive training appears sufficient to drive improvements in Verbal Learning, Memory, and Cognitive Processing that endure 6 months beyond the intervention.

Research

(Genevsky et al.): Subjects were randomly assigned to either 50 hours (1 hour per day, 5 days per week) of a computer games control condition or to 50 hours of computerized training that places implicit, increasing demands on auditory perception and accurate aural speech reception. Frequency discrimination and phoneme recognition exercise targeted aspects of early auditory processing deficits of schizophrenia, which have been shown to affect higher-order cognitions such as verbal Memory, reading ability, and social-emotional recognition. This psychophysical training was embedded within increasingly complex auditory and verbal Working Memory/verbal learning exercises that progress from simple frequency discrimination to phoneme identification and recall of verbal instructions and narrative details.
(Bowie et al.): In another study, outpatients with schizophrenia (N=107) were randomly assigned to receive either cognitive remediation, functional adaptation skills training, or combined treatment.. Clinical symptoms, neurocognition, social competence, functional competence, and case-manager-rated real-world behavior were assessed at baseline, at the end of treatment, and during a 12-week durability assessment.

*If your patients experience psychosis with Bipolar, check out the studies below for more recommendations and data relating to cognitive training.

References

Bowie, C. R. (2012). Combined cognitive remediation and functional skills training for schizophrenia: effects on cognition, functional competence, and real-world behavior. National Library Of Medicine, 169(7), 710–8. https://pubmed.ncbi.nlm.nih.gov/22581070/

Genevsky, A. (2010). Cognitive training in schizophrenia: a neuroscience-based approach. National Library of Medicine, 21(3), 416–421.

Tripathi. (2018, February). Cognitive Deficits in Schizophrenia: Understanding the Biological Correlates and Remediation Strategies. Clin Psychopharmacol Neurosci., 16(1), 7–17. 10.9758/cpn.2018.16.1.7