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Comparison of the Effectiveness of Targeted progressive Matrices Cognitive Rehabilitation Method with Neurofeedback Method in Students with Attention Deficit Disorder

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Introduction

Attention deficit/hyperactivity disorder (ADHD) is a highly prevalent developmental disorder among children. Inappropriate levels of inattention, impulsiveness, and hyperactivity are the core symptoms of ADHD. Cognitive functions such as attention and executive functions are found to be impaired in children with ADHD. In the past decade cognitive training has received considerable attention as an intervention method. However, evidence supporting cognitive training as an intervention that can produce transfer is mixed. The aim of the present study is to evaluate this heterogeneous evidence with a focus on its application in children with ADHD.

Method

The present study is a quasi-experimental study using pre-test and post-test design with control group. The statistical population of this study consisted of male students in elementary school, referred to psychiatric clinic of Karaj and with attention deficit hyperactivity disorder (ADHD). Subjects were selected using convenience sampling method. Therefore, considering the possibility of falling into the experimental and control groups, a total of 50 students, referred to psychiatric clinics who agreed to receive non-pharmacological interventions, were selected. They were also selected to be included in the study, including IQ 90 and disability or other disorders, as

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well as not using drugs or other therapeutic methods until the end of this study. The subjects were randomly assigned to three groups (17 Targeted Matrices Experimental Group, 16 Norofeedback Group and 17 Control Group). Experimental and control groups were tested in two stages of pre- and post-tests and after interventions related to neurofeedback and targeted matrices using IVA test. The data of the experimental and control groups were analyzed using analysis of multivariate analysis of covariance (MANCOVA).

Results

The results showed that both approaches, neuro-feedback and targeted matrices were effective on attention deficit/hyperactivity disorder (ADHD) ($p < 0.01$). However, there was no significant difference in effectiveness of the two interventions on those variables ($p > 0.05$).

Discussion

Present study findings conclude that improvement in neuropsychological, behavioral and academic functioning provide further empirical support to the view that NFT with and targeted matrices can be considered as a long-term effective treatment for children with ADHD. Norofeedback and Targeted Matrices may not be an alternative treatment, but an appropriate combination therapy in the treatment of complementary clinical disorders, an adjunctive treatment to routine clinical management in ADHD. Considering the high prevalence rate, chronic impact of ADHD, the limitations and adverse effects of available treatment, the findings of the current study are relevant.

Keywords: Attention Deficit, Targeted Progressive Matrices, Neurofeedback

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