

## The effectiveness of neurofeedback, cognitive rehabilitation and combination therapy on the academic achievement of children with attention deficit/ hyperactivity disorder

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### Abstract

**Introduction:** Helping to improve the attention and function of ADHD children by their means, such as neurofeedback and cognitive rehabilitation can help them achieve their academic achievement. The purpose of this study was to determine the effectiveness of neurofeedback, cognitive rehabilitation and combination therapy on the academic achievement of children with ADHD.

**Method:** The research method was semi-experimental, pre-test and post-test with a control group. The statistical population included all children with ADHD at the age of 6-12 years who referred to the comprehensive psychiatric center of Tehran, with the quantity of 475 subject in 2018. A sample of 100 students was selected using available sampling method and were randomly replaced in the four groups of 25 controls and neurofeedback tests, cognitive rehabilitation and experimental group, a combination of two methods of neurofeedback and cognitive rehabilitation. In order to determine the academic achievement, the academic achievement of the students was used in two, first and second semester. Neurofeedback sessions were conducted during 5 weeks, two 40-minute sessions. Cognitive rehabilitation training was done in 14 sessions, 30 minutes. Data were analyzed using one-way covariance group analysis.

**Results:** The results showed that the implementation of neurofeedback sessions and cognitive rehabilitation had a significant effect on improvement of academic achievement of students with attention deficit/ hyperactivity disorder ( $F=14.401$ ,  $P=0.001$ ).

**Conclusion:** It is recommended to use these technologies at lower medical costs to treat and improve the cognitive functions of children with ADHD and similar disorders.

**Keywords:** academic achievement" attention deficit/ hyperactivity disorder" cognitive rehabilitation" neurofeedback

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