Differences in Executive Functioning in children with Attention Deficit and Hyperactivity Disorder (ADHD)

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In recent years, the interest in Attention Deficit and Hyperactivity Disorder (ADHD) and its relation to deficits in working memory and more specifically the different executive functions has grown, to the point of confirming that these are quite frequent in this disorder. The aim of this study was precisely to explore differences in the executive functioning of working memory in 4th-grade Primary school children with and without ADHD (26 and 29 children, respectively), introducing rigorous control measures in the tests used. Four executive functions were analyzed: divided attention, updating, attentional shifting and inhibition, measured through four tasks, the dual-task paradigm (digits and box-crossing), the N-Back task, the Trail Making Test (TMT) and the Stroop task, respectively. The results showed that participants with ADHD, compared to children with typical development (TD), exhibited a smaller verbal memory span as well as deficits in the attentional shifting and updating functions. However, a similar performance for the executive function of inhibition was found for both groups of participants. Finally, an unexpected result was obtained with regard to the role of divided attention, as children with ADHD were less impaired when performing the double task than participants in the TD group.