The impact of inattention, hyperactivity/impulsivity symptoms, and executive functions on learning behaviors of children with ADHD

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Children diagnosed with attention-deficit/hyperactivity disorder (ADHD) are at risk of experiencing lower academic achievement compared to their peers without ADHD. However, we have a limited understanding of the mechanisms underlying this association. Both the symptoms of the disorder and the executive functions can negatively influence learning behaviors, including motivation, attitude towards learning, or persistence, key aspects of the learning process.

The first objective of this study was to compare different components of learning behaviors in children diagnosed with ADHD and typically developing (TD) children. The second objective was to analyze the relationships among learning behaviors, executive functioning, and symptoms of hyperactivity/impulsivity in both groups. Participants were 35 children diagnosed with ADHD and 37 with TD (7-11 years old), matched on age and IQ.

The teachers filled out the Behavior Rating Inventory of Executive Function (BRIEF) and the Learning Behaviors Scale, which evaluates Competence/motivation, Attitude toward learning, Attention/persistence, and Strategy/flexibility. In addition, parents and teachers filled out the DSM-5 diagnostic criteria for ADHD. ANOVAs showed significant differences between children with ADHD and TD children on all the learning behaviors. Moreover, in both the ADHD and TD groups, the behavioral regulation index of the BRIEF predicted the search for strategies, and the metacognition index was a good predictor of motivation. However, attitude towards learning was predicted by metacognition only in the group with ADHD. Therefore, the executive functions had greater power than the typical symptoms of inattention and hyperactivity/impulsivity in predicting learning behaviors of children with ADHD.

The findings are in line with other studies that support the influence of the executive functions on performance, highlighting the importance of including their development as a top priority from early ages in the school setting in order to strengthen learning behaviors.