

Summary of Project

The Influence of ADHD Symptoms on Fluid Intelligence And The Role of Attention Control and Working Memory

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Attention deficit/hyperactivity disorder (ADHD) is a psychological disorder that is often associated with lower levels of fluid intelligence. Fluid intelligence is then described as the ability to use logical reasoning skills to solve novel problems. Global ADHD prevalence rate has been alarmingly high in recent years with 7.1% of children around the world getting diagnosed with ADHD. Furthermore, ADHD has also been found to persist into adulthood in more the half of the childhood ADHD cases. Deficits in cognitive abilities are often observed in individuals with ADHD. For example, individuals with ADHD often experience impairments in working memory, which is the ability to manipulate received information. Attention control that is described as the ability of the individual to select the information that they pay attention to and those that they ignore are also often impaired in individuals with ADHD. Impairments in both attention control and working memory abilities are often associated with low levels of fluid intelligence. Thus, the current research study aims to examine the influences ADHD symptoms have on decreased fluid intelligence and if this association was mediated by impairments in working memory and attention control. The current research study also hopes to establish a path model that explains the relationship between attention control, working memory and fluid intelligence.

Methodology

The current research study recruited 49 participants. Participants were between the ages of 18 to 40 and were fluent in English. Participants were then required to first complete the Cattell Culture Fair Intelligence Test, which is a 50-item measure of fluid intelligence. Next, participants then completed two cognitive tasks, the attention network test was the task used to assess attention control capacity and backward digit span was use to assess the working memory abilities of the participants. Finally, participants completed the Adult ADHD Self-Report Scale (ASRS), which is an 18-item questionnaire that assesses for the presence of ADHD symptoms. The entire assessment procedure took approximately two hours to complete.

Results

The current study aimed to understand the relationship between ADHD symptoms, working memory, attention control, and fluid intelligence. The results obtained demonstrated significant correlations between ADHD symptoms and attention control, attention control and working memory abilities, and working memory abilities and fluid intelligence. The results also supported the hypothesis that both attention control and working memory mediated the association between ADHD symptoms and fluid intelligence. Findings from the current study partially supported the theory that there was an order of influence between attention control, working memory and fluid intelligence.

Conclusions

The aim of the current research study was to examine the influences ADHD symptoms had on fluid intelligence. Findings obtained from the current research study supported the assumption that attention control capacity and working memory abilities mediated the association between ADHD symptoms and fluid intelligence. Results obtained from the current research study demonstrated a hierarchical order of influence ADHD symptoms had on fluid intelligence. Deficits in fluid intelligence in adult individuals with ADHD were observed to be a result of impaired working memory ability that was affected by poor attention control.