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Physiological and Emotional Awareness in Individuals with ADHD

Is ADHD related to physiological and emotional awareness? This research brief reviews two studies that address this question. Physiological or interoceptive awareness refers to a person's ability to recognize internal bodily signals such as heartbeat, hunger, and thirst. Research demonstrates that adaptive emotion regulation skills involve an individual's ability to recognize and interpret emotion-related signals coming from the body.

The first study examined interoceptive awareness in adults with and without ADHD. The researchers found a significant difference between adults with and without ADHD, and more specifically, that individuals with ADHD had poorer interoceptive awareness.

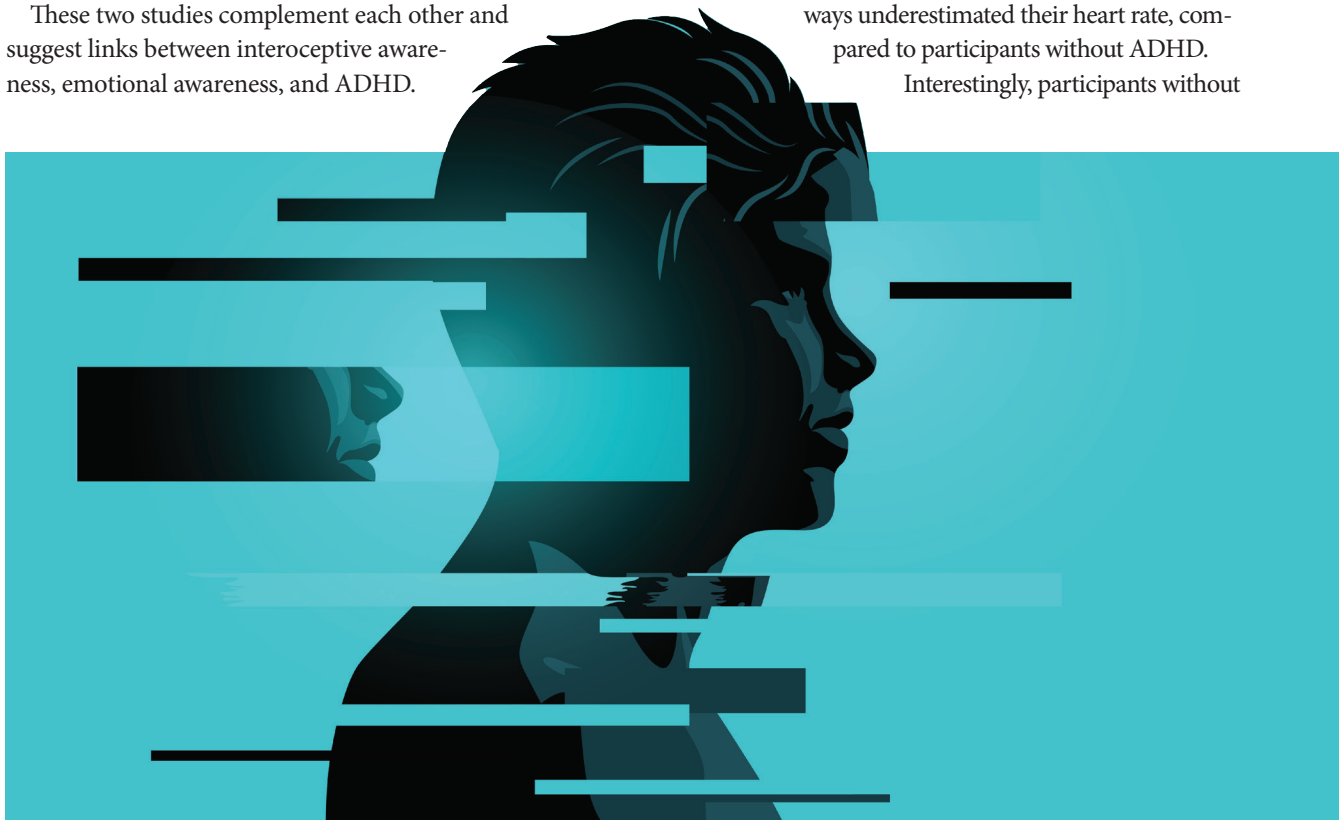
The second study investigated the relationship between emotional self-awareness and difficult behavior in children with ADHD. The results showed that children's ability to recognize their emotions was associated with reactive misbehavior.

These two studies complement each other and suggest links between interoceptive awareness, emotional awareness, and ADHD.

Interoceptive awareness

This study investigated whether interoceptive awareness differs between adults with and without ADHD using a heartbeat detection task. A sample of participants with and without ADHD completed questionnaires and then were involved in a lab task in which they were instructed to count their heartbeat and indicate the number of beats they observed. This number was compared to the number of heartbeats counted by electrocardiogram measures on the participant.

Results from the study found a significant difference between the ADHD and the non-ADHD group in accurately detecting their heartbeats. No differences were found between participants with ADHD who were taking medication and not taking medication. The findings suggest that individuals with ADHD may have poorer awareness of their internal bodily signals, thus having impaired interoceptive awareness. Participants with ADHD always underestimated their heart rate, compared to participants without ADHD. Interestingly, participants without



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ADHD in this study also had lower average heart rates per minute compared to participants with ADHD, which was unrelated to whether participants with ADHD were taking medication.

Overall, these findings suggest a significant difference in interoceptive awareness between adults with and without ADHD, which provides insight into understanding how ADHD symptoms may affect the way an individual identifies messages from their body, such as hunger, satiety, and emotions. Future research is recommended with a larger sample size and measures of bodily signals beyond heart rate. Such studies could meaningfully inform future clinical interventions, focusing on training self-awareness of physiological signals with the aim of promoting emotion regulation.

Kutscheidt K, Dresler T, Hudak J, Barth B, Blume F, Ethofer T, Fallgatter AJ, & Ehlis AC. (2019). Interoceptive awareness in patients with Attention Deficit/Hyperactivity Disorder (ADHD). *ADHD Attention Deficit and Hyperactivity Disorders, 11*, 395–401. https://doi.org/10.1007/s12402-019-00299-3

Poor emotional awareness and externalizing behavior

Emotional self-awareness involves one's ability to recognize and differentiate emotions in oneself. Research shows that difficulties in such self-awareness is related to emotional reactivity and problematic strategies for emotion regulation, such as behavioral challenges. This study explored the relationship between emotional self-awareness, emotional reactivity, and behavioral difficulties in children with ADHD.

Children from age eight to twelve and their parents participated in this study. Questionnaires on emotional awareness were completed by children, and both children and parents completed questionnaires on emotion regulation and difficult behavior.

The results showed that challenges with emotional awareness in children with ADHD were related to behavioral difficulties. These behavioral difficulties were reactive due to emotional dysregulation instead of intentional, willful misbehavior. It is possible that the results can be explained by children with ADHD having more difficulty in self-awareness and differentiation of emotions, or that they may have more challenges noticing the physical signs of emotion because they are easily overwhelmed by emotional cues. In both circumstances, children with ADHD may react in an unintentional, impulsive, and intense way due to confusion, frustration, or a need to get rid of strong emotions.

Although future studies using measures beyond questionnaires would be useful, these results suggest that standard behavioral treatments for ADHD may be improved by including components that address emotional awareness, such as learning the physiological signals of emotions and correctly recognizing them. Overall, this study's findings help with better understanding the emotion-related reasons behind challenging child behaviors, suggesting again that self-awareness of body signals may be important to facilitate for individuals with ADHD.

Factor PI, Rosen PJ, & Reyes RA. (2016). The relation of poor emotional awareness and externalizing behavior among children with ADHD. *Journal of Attention Disorders, 20*, 168–177. https://doi.org/10.1177/1087054713494005

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