An investigation of attention biases to emotional faces in individuals with ADHD

Attention Deficit Hyperactivity Disorder (ADHD) is characterized by difficulty staying organized, maintaining focus, planning for the future, and adapting to changing environments. As of 2011, 6.4 million children 4-17 years of age in the United States have been diagnosed with ADHD, suggesting that ADHD is a prominent issue in developmental health. While much research on ADHD has focused on emotion processing and attention deficits as independent factors underlying ADHD behaviors, less research has investigated the interaction between the two. The goal of the present study is to investigate whether individuals with ADHD exhibit attentional biases in response to specific emotional stimuli.

Attention helps people focus on salient and goal-oriented information while suppressing irrelevant information. Attention is involuntary as it is captured by salient information in the environment, but it can be controlled by voluntarily selecting what stimuli deserve attention resources and which do not. For example, one can choose to focus their attention on the book they are reading while ignoring loud music from someone’s headphones. Attention works in tandem with working memory, a limited capacity system that manipulates and organizes attended to information from the environment. Together attention and working memory enable the completion of a plan of action.

Once a plan of action has been decided, certain stimuli may facilitate or hinder the completion of a task. Research has shown that emotional content, based on its evolutionary significance, continually captures attention. Emotion captures attention by generating a state of arousal that facilitates a behavioral response to environmental stimuli. Taken together, emotion focuses attention, which directs working memory to appropriate emotional content, which in turn
drives decision-making and goal completion. In this manner emotional content can capture attention to either help or hinder completion of a task.

In the context of ADHD, previous literature has suggested that children with ADHD attend to negative emotional content longer\(^7\). The aim of the present study is to clarify whether an emotion attention bias continues into adulthood and whether there is an attention bias towards specific emotions that may be impacting goal pursuit. To measure whether emotional stimuli in individuals with ADHD capture attention or facilitate rapid processing of emotional content, data from a longitudinal study in the Levens Emotion and Cognition Lab will be analyzed in a novel way. Data specifically from participants who completed the affective priming task and indicated a diagnosis of ADHD in the Mental Health History Checklist will be included in the study along with a sample of matched controls. We predict that young adults with ADHD will have greater negative priming scores to negative faces, reflecting greater attention capture, than will matched controls.
References


