



Research Week 2021

The association between sensory over-responsiveness and emotional dysregulation in children with ADHD: A cross-sectional analysis using the Temperament in Middle Childhood Questionnaire

Alisha Bruton, Angela Senders, Brenda Leung, Irene Hatsu, L. Eugene Arnold, and Jeanette Johnstone

Submitting author: Alisha Bruton; BrutonA@ohsu.edu
Psychiatry Department, Oregon Health & Science University

Keywords: ADHD, pediatrics, psychiatry, psychology, sensory processing

Abstract

Introduction: Up to half of children with attention-deficit/hyperactivity disorder (ADHD) experience either emotional dysregulation or sensory over-responsiveness, yet little is known about the association between the two in this population. The objective of this analysis was to examine the association between emotional dysregulation and sensory over-responsiveness in children with ADHD.

Methods: We conducted a cross-sectional analysis (n=124) using baseline data from the Micronutrients for ADHD in Youth (MADDY) Study, which enrolled children aged 6-12 with symptoms of ADHD and emotional dysregulation. Sensory responsiveness was assessed using two subscales from the Temperament in Middle Childhood Questionnaire (TMCQ), Pain Sensitivity and Perceptual Sensitivity. Emotional dysregulation was assessed using the Emotional Problems and Conduct Problems subscales from the Strengths and Difficulties Questionnaire (SDQ), and a composite score from the Child and Adolescent Symptom Inventory (CASI-5). We performed multivariable linear regression to measure the association of pain sensitivity and perceptual sensitivity with emotional dysregulation while adjusting for potential confounding variables.

Results: In adjusted models, pain sensitivity was positively associated with emotional dysregulation as measured by the Emotional Problems ($\beta= 1.23$; 95% CI: 0.66, 1.81; $p<0.0001$) and Conduct Problems ($\beta= 1.01$; 95% CI: 0.53, 1.48; $p=0.0001$) subscales, as well as the CASI-5 composite score ($\beta= 0.31$; 95% CI: 0.20, 0.42; $p<0.0001$). Perceptual sensitivity was positively associated with emotional dysregulation as measured by the Emotional Problems subscale ($\beta= 0.75$; 95% CI: 0.15, 1.35; $p= 0.01$) but not the Conduct Problems subscale ($\beta=0.27$; 95% CI: -0.24, 0.77; $p= 0.30$) or the CASI-5 composite score ($\beta=0.12$; 95% CI: -0.01, 0.24; $p=0.07$).

Conclusion: Pain sensitivity and perceptual sensitivity were positively associated with emotional dysregulation in children with ADHD. To better understand the nature of the association, including the direction of the relationship, longitudinal studies are warranted.