An EEG Study of Children with and Without ADHD Symptoms: Between-Group Differences and Associations with Sluggish Cognitive Tempo Symptoms

Matthew A. Jarrett, Philip A. Gable, Ana T. Rondon, Lauren B. Neal, Hannah F. Price, Dane C. Hilton

Journal of Attention Disorders, 2017
DOI: https://doi.org/10.1177/1087054717723986

Abstract

Objective:
We examined differences between those with and without ADHD symptoms on resting state electroencephalography (EEG) indices and unique relations with sluggish cognitive tempo (SCT) symptoms.

Method:
Children with ADHD symptoms (n = 21) and healthy controls (n = 20) were assessed using rating scales, a neuropsychological task measuring sustained attention and inhibitory control, and EEG activity during a resting state period. Between-group, correlational, and regression analyses were conducted.

Results:
Large differences (particularly for theta/beta ratio in frontal and frontocentral regions) were found on EEG measures between those with and without ADHD symptoms. While ADHD and SCT symptoms both related to sustained attention on a computerized task, only ADHD symptoms were related to frontal and frontocentral theta/beta ratio.

Conclusion:
Results support the conclusion that ADHD symptoms are strongly associated with theta/beta ratio in frontal and frontocentral regions. Future studies should explore unique neurophysiological correlates of SCT.