Differential impact of trait sluggish cognitive tempo and ADHD inattention in early childhood on adolescent functioning

Stephen P. Becker; G. Leonard Burns; Daniel R. Leopold; Richard K. Olson; Erik G. Willcutt

Abstract

Background
Sluggish cognitive tempo (SCT) is distinct from attention-deficit/hyperactivity disorder inattention (ADHD-IN) and concurrently associated with a range of impairment domains. However, few longitudinal studies have examined SCT as a longitudinal predictor of adjustment. Studies to date have all used a relatively short longitudinal time span (6 months to 2 years) and only rating scale measures of adjustment. Using a prospective, multi-method design, this study examined whether SCT and ADHD-IN were differentially associated with functioning over a 10-year period between preschool and the end of ninth grade.

Methods
Latent state-trait modeling determined the trait variance (i.e. consistency across occasions) of SCT and ADHD-IN across four measurement points (preschool and the end of kindergarten, first grade, and second grade) in a large population-based longitudinal sample (N = 976). Regression analyses were used to examine trait SCT and ADHD-IN factors in early childhood as predictors of functioning at the end of ninth grade (i.e. parent ratings of psychopathology and social/academic functioning, reading and mathematics academic achievement scores, processing speed and working memory).

Results
Both SCT and ADHD-IN contained more trait variance (Ms = 65% and 61%, respectively) than occasion-specific variance (Ms = 35% and 39%) in early childhood, with trait variance increasing as children progressed from preschool through early elementary school. In regression analyses: (a) SCT significantly predicted greater withdrawal and anxiety/depression whereas ADHD-IN did not uniquely predict these internalizing domains; (b) ADHD-IN uniquely predicted more externalizing behaviors whereas SCT uniquely predicted fewer externalizing behaviors; (c) SCT uniquely predicted shyness whereas both SCT and ADHD-IN uniquely predicted global social difficulties; and (d) ADHD-IN uniquely predicted poorer math achievement and slower processing speed whereas SCT more consistently predicted poorer reading achievement.

Conclusions
Findings of this study – from the longest prospective sample to date – provide the clearest evidence yet that SCT and ADHD-IN often differ when it comes to the functional outcomes they predict.