Working Memory Mediates Increased Negative Affect and Suicidal Ideation in Childhood Attention-Deficit/Hyperactivity Disorder

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Abstract

Children with attention-deficit/hyperactivity disorder (ADHD) are at greater risk for suicidal ideation and suicide attempts compared to those without ADHD. Increased risk is at least partially attributable to a subset of children with ADHD and comorbid depression or disruptive behavior disorders; however, the early predictors and mechanisms driving increased risk are not well understood. Here, we investigate the contributions of two candidate mechanisms for increased suicidal ideation in children with ADHD: executive function and negative affect. 623 clinically well-characterized, community-recruited children classified by research criteria as ADHD (n = 388) or typically-developing controls (n = 253) participated. Parent-report on the Temperament in Middle Childhood Questionnaire provided a measure of negative affectivity. Children completed laboratory tasks to measure response inhibition and working memory. Suicidal ideation was evaluated by parent report during a semi-structured interview and child responses on the Children’s Depression Inventory. Compared to typically developing controls, children with ADHD had higher rates of suicidal ideation, more negative affect, slower stop signal reaction times, and weaker working memory. Statistical path-model analyses confirmed the hypothesis that weaker working memory in ADHD statistically mediated increased negative affect. Weaker working memory also mediated and increased suicidal ideation in these cross sectional data. Findings were not attributable to comorbid disruptive behavioral disorders. Poor response inhibition did not reliably mediate negative affect or suicidal ideation. Impairment in working memory is an important early risk factor for suicidal ideation in children with ADHD, and may help in identifying children for prevention and early intervention efforts.