Attention-Deficit/Hyperactivity Disorder, Autistic Traits, and Substance Use Among Missouri Adolescents

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Background: Although existing literature demonstrates the association of attention-deficit/hyperactivity disorder (ADHD) with both substance use (SU) and autism spectrum disorder (ASD), few studies have examined rates of SU among adolescents with elevated ASD symptoms, with or without comorbid ADHD. Clinic-based studies suggest a possible protective effect of ASD against SU, but this has not been confirmed in population-based studies.

Objective: We examined alcohol, tobacco, and drug use in adolescents with either ADHD, elevated autistic traits, or both as compared with controls.

Methods: Subjects (N = 2937) who were 13 to 17 years old from a Missouri population-based large sibship sample were assessed for ADHD, autistic traits, and SU with the use of parent-report questionnaires. The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition ADHD symptom criterion (Criterion A) was applied to the Strengths and Weaknesses of ADHD-symptoms and Normal-behavior (SWAN) questionnaire item responses to determine ADHD diagnosis. The presence of elevated autistic traits was defined as a raw Social Responsiveness Scale (SRS) score of 62 (95th percentile for this sample) or higher. SU was determined with the use of three items from the Child Behavior Checklist (CBCL). Statistical methods used included logistic and fractional polynomial regression.

Results: As compared with controls, adolescents with ADHD were at increased risk for alcohol, tobacco, and drug use whether or not they had elevated autistic traits. Adolescents with elevated autistic traits were at significantly increased risk for drug use other than alcohol and tobacco, even if they did not have ADHD. Among those with raw SRS scores in the range of about 20 (normal) to 80 (consistent with mild to moderate ASD), adolescents with ADHD had higher levels of SU than control individuals with similar levels of autistic traits. However, strong conclusions cannot be drawn regarding individuals with very low or very high SRS scores as a result of sparse data.

Conclusions: This study confirms previous research showing an increased risk of SU among adolescents with ADHD. It also provides new information indicating that adolescents with high levels of autistic traits are at elevated risk for alcohol and tobacco use if they have comorbid ADHD; in addition, they may be at high risk for other drug use, even if they do not have comorbid ADHD. Therefore, it should not be assumed that adolescents with mild to moderate ASD have a low risk of SU, especially if ADHD is also present.