Symptoms of autism and ADHD: A swedish twin study examining their overlap.

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Autism spectrum disorders (ASD) and attention deficit hyperactivity disorder (ADHD) show high comorbidity. The following questions were addressed regarding their specific symptoms: What is the factor structure of ASD and ADHD symptoms, to what degree do different symptom domains cluster together, to what extent are these domains caused by the same genetic and environmental influences, and what is the best model of their co-occurrence? A population-based twin cohort of over 17,000 9- and 12-year-olds were assessed using the Autism-Tics, AD/HD, and other Comorbidities parental interview inventory. Principal component analyses were conducted, and symptom domain clustering was assessed. Four multivariate twin models were compared. Factors split into three ASD (social impairments, communication impairments, and restricted repetitive behaviors and interests), and three ADHD (inattention, hyperactivity, and impulsivity) symptom domains. Some ASD-ADHD symptom domain combinations clustered together often, although others not at all. A two-factor common pathway model fit the data, suggesting that ASD and ADHD symptom domains tap into separate "ASD" and "ADHD" latent factors that showed high genetic overlap. All subdomains also showed significant specific genetic and environmental influences, reflecting the etiological heterogeneity both within and between ASD and ADHD. These findings support the conceptual distinction of ASD and ADHD, and demonstrate the considerable natural co-occurrence of particular ASD/ADHD symptom domains. The results imply that more children with 1 condition show features of the other condition than show complete comorbidity. Emphasis on symptom co-occurrence, rather than complete comorbidity between disorders, may help focus clinical approaches and advance molecular genetic research.