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ABSTRACT:

Addressing the debate about whether ADHD symptomatology in childhood and adulthood could be etiologically distinct, we used a novel quantitative genetic approach in a large family dataset to assess whether ADHD symptoms in mothers and children shared similar genetic correlations with symptoms of ADHD-related comorbid disorders in children. Genetic correlations were derived from two methodologies: 1) Extended bivariate twin analyses (including siblings and cousins) assessing within-child genetic overlap; 2) Multiple-Children-of-Twins-and-Siblings analyses assessing between-mother-and-child genetic overlap. Both sets of analyses used a common sample taken from the Mother and Child Cohort Study (MoBa), a large Norwegian birth registry cohort of ~115,000 pregnancies. Maternal ADHD symptoms were assessed at child age 3 years, and child ADHD symptoms were assessed at age 5 years. Comorbid symptom measures were child ODD, conduct disorder, anxiety and depression symptoms, all at age 8 years. High genetic correlations were found between maternal ADHD symptoms and child ADHD and comorbid symptoms. Shared genetic influences accounted for the majority of all mother-child phenotypic associations, closely reflecting the high proportions of within-child phenotypic associations explained by genetic overlap. Using a novel family-based approach, our results provide evidence that ADHD symptoms in children, and in their adult parents, share comparable genetic overlap with children’s later symptoms of several common ADHD-related disorders. This suggests that symptoms of ADHD as measured in the adult mothers in our sample are not etiologically distinct to those measured in children, as they are related to a wider array of ADHD-related comorbid symptomatology in their children.

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