

Different heritabilities but shared etiological influences for parent, teacher and self-ratings of ADHD symptoms: an adolescent twin study.

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BACKGROUND:

Parent and teacher ratings of attention deficit hyperactivity disorder (ADHD) symptoms yield high estimates of heritability whereas self-ratings typically yield lower estimates. To understand why, the present study examined the etiological overlap between parent, teacher and self-ratings of ADHD symptoms in a population-based sample of 11-12-year-old twins.

METHOD:

Participants were from the Twins Early Development Study (TEDS). ADHD symptoms were assessed using the Strengths and Difficulties Questionnaire (SDQ) hyperactivity scale completed by parents, teachers and children. Structural equation modeling was used to examine genetic and environmental contributions to phenotypic variance/covariance.

RESULTS:

The broad-sense heritability of ADHD symptoms was 82% for parent ratings, 60% for teacher ratings and 48% for self-ratings. Post-hoc analyses revealed significantly higher heritability for same-teacher than different-teacher ratings of ADHD (76% v. 49%). A common pathway model best explained the relationship between different informant ratings, with common genetic influences accounting for 84% of the covariance between parent, teacher and self-rated ADHD symptoms. The remaining variance was explained by rater-specific genetic and non-shared environmental influences.

CONCLUSIONS:

Despite different heritabilities, there were shared genetic influences for parent, teacher and self-ratings of ADHD symptoms, indicating that different informants rated some of the same aspects of behavior. The low heritability estimated for self-ratings and different-teacher ratings may reflect increased measurement error when different informants rate each twin from a pair, and/or

greater non-shared environmental influences. Future studies into the genetic influences on ADHD should incorporate informant data in addition to self-ratings to capture a pervasive, heritable component of ADHD symptomatology.