

Genetic and environmental influences on adult attention deficit hyperactivity disorder symptoms: a large Swedish population-based study of twins.

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BACKGROUND:

Attention deficit hyperactivity disorder (ADHD) frequently persists into adulthood. Family and twin studies delineate a disorder with strong genetic influences among children and adolescents based on parent- and teacher-reported data but little is known about the genetic and environmental contribution to DSM-IV ADHD symptoms in adulthood. We therefore aimed to investigate the impact of genetic and environmental influences on the inattentive and hyperactive-impulsive symptoms of ADHD in adults.

METHOD: Twin methods were applied to self-reported assessments of ADHD symptoms from a large population-based Swedish twin study that included data from 15 198 Swedish male and female twins aged 20 to 46 years.

RESULTS:

The broad heritability [i.e. A+D, where A is an additive genetic factor and D (dominance) a non-additive genetic factor] was 37% (A=11%, D=26%) for inattention and 38% (A=18%, D=20%) for hyperactivity-impulsivity. The results also indicate that 52% of the phenotypic correlation between inattention and hyperactivity-impulsivity ($r=0.43$) was explained by genetic influences whereas the remaining part of the covariance was explained by non-shared environmental influences. These results were replicated across age strata.

CONCLUSIONS:

Our findings of moderate broad heritability estimates are consistent with previous literature on self-rated ADHD symptoms in older children, adolescents and adults and retrospective reports of self-rated childhood ADHD by adults but differ from studies of younger children with informant ratings. Future research needs to clarify whether our data indicate a true decrease in the heritability of ADHD in adults compared to children, or whether this relates to the use of self-ratings in contrast to informant data.