A Swedish Population-Based Multivariate Twin Study of Externalizing Disorders.

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Abstract:
In epidemiological and twin populations, prior interview studies have identified an externalizing spectrum of disorders. Could this be detected utilizing objective registry data? In 20,603 twin pairs from the Swedish Twin Registry, we obtained information from national medical, criminal and pharmacy records on drug abuse (DA), criminal behavior (CB) and alcohol use disorders (AUD). Multivariate twin modeling was performed with the OpenMx package. A common pathway model with quantitative but not qualitative sex effects fit best with twin resemblance for the latent liability to externalizing syndromes due to both genetic and shared environmental factors. Heritability of the liability was higher in females (76 vs. 62%) while shared environmental influences were considerably stronger in males (23 vs. 3%). In both sexes, this latent liability was most strongly indexed by DA and least by CB. All three syndromes had specific genetic influences (especially CB and AUD in males, and CB in females) and specific shared environmental effects (especially DA and CB in males, and AUD in females). For DA, CB and AUD in men, and DA and AUD in women, at least 75% of the genetic risk arose through the common factor. The best fit model assumed that genetic and environmental influences on these externalizing syndromes in males and females were the same. We identified, in registry data, a highly heritable externalizing spectrum. DA, CB and AUD share substantial genetic and modest to moderate shared environmental influences. The nature of the externalizing spectrum differed meaningfully between the sexes.
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