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Association of obsessive-compulsive disorder with substance misuse: A genetically informative population and twin study

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ABSTRACT:

It remains unclear whether individuals with obsessive-compulsive disorder (OCD) have an elevated risk of substance misuse, and whether OCD and substance misuse share genetic and/or environmental influences. We investigated the association between OCD and substance misuse in two samples. Sample 1 included all individuals born in Sweden 1932-1997 (n=6,304,188). OCD was defined as an ICD-10 diagnosis in the patient register, and substance misuse as register-based substance use-related disorder, criminal conviction, or death. The sample was followed-up through the registers in 1997-2013. Sample 2 included participants of the Child and Adolescent Twin Study in Sweden with self-reported information on OCD-symptoms as well as alcohol and drug dependence symptoms at age 18 (n=9,231). We estimated the contribution of genetic and environmental influences to the covariance between OCD and substance misuse/dependence using data from full siblings and maternal half-siblings in sample 1, and monozygotic and dizygotic twins in sample 2. In sample 1, OCD was associated with an elevated risk of substance misuse (HR=3.84, 95% CI: 3.74-3.95), and in sample 2, OCD-symptoms were associated with increased alcohol ($\beta=0.47$ [0.41-0.55]) and drug ($\beta=0.69$ [0.41-0.98]) dependence symptoms. Anxiety and depressive disorders did not explain the associations. In both samples, the associations between OCD and substance misuse were explained by genetic (56-68%) and non-shared environmental factors (32-44%). Genetic correlations ranged from 0.28 (0.24-0.32) to 0.31 (0.23-0.40). OCD was associated with an elevated risk of substance misuse, independently of the primary comorbidities, anxiety and depression. Genetic and non-shared environmental influences explained the association.

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