



[Genetic and environmental determinants of violence risk in psychotic disorders: a multivariate quantitative genetic study of 1.8 million Swedish twins and siblings.](https://arctichealth.org/en/permalink/ahliterature286217)

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Abstract:

Patients diagnosed with psychotic disorders (for example, schizophrenia and bipolar disorder) have elevated risks of committing violent acts, particularly if they are comorbid with substance misuse. Despite recent insights from quantitative and molecular genetic studies demonstrating considerable pleiotropy in the genetic architecture of these phenotypes, there is currently a lack of large-scale studies that have specifically examined the aetiological links between psychotic disorders and violence. Using a sample of all Swedish individuals born between 1958 and 1989 ($n=3\,332\,101$), we identified a total of 923,259 twin-sibling pairs. Patients were identified using the National Patient Register using validated algorithms based on International Classification of Diseases (ICD) 8-10. Univariate quantitative genetic models revealed that all phenotypes (schizophrenia, bipolar disorder, substance misuse, and violent crime) were highly heritable ($h^2=53-71\%$). Multivariate models further revealed that schizophrenia was a stronger predictor of violence ($r=0.32$; 95% confidence interval: 0.30-0.33) than bipolar disorder ($r=0.23$; 0.21-0.25), and large proportions (51-67%) of these phenotypic correlations were explained by genetic factors shared between each disorder, substance misuse, and violence. Importantly, we found that genetic influences that were unrelated to substance misuse explained approximately a fifth (21%; 20-22%) of the correlation with violent criminality in bipolar disorder but none of the same correlation in schizophrenia (Pbipolar disorder

Notes:

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