

Genetic and environmental aetiologies of the transition from nonsuicidal self-injury to suicide attempt: a longitudinal twin study

5. Genetic, epigenetic and neurobiological factors

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Abstract text

Nonsuicidal self-injury (NSSI) often temporally precedes suicide attempts (SA), and SA predicts suicide. The genetic and environmental aetiologies of the transition from NSSI to SA have not been studied. This study aims to investigate whether NSSI reported at age 18 influences the incidence of SA between ages 18 and 24, and to what extent these transitions from NSSI to SA are influenced by shared genetic and environmental factors. Twins born in Sweden were enrolled in this longitudinal population-based twin cohort study. Self-reports of NSSI and SA were collected at ages 18 and 24. The majority of individuals in the analytical sample (N=3 934) were female (64.9%) and dizygotic twins (65.0%). We found that NSSI reported at age 18 was associated with an increased risk of SA between ages 18 and 24 (Odds Ratio 5.4, 95% CI 3.3-8.7), after adjusting for sex and childhood psychopathology. There was a strong genetic correlation between NSSI reported at age 18 and incidence of SA between ages 18 and 24 ($r_A=0.8$, 95% CI 0.3-1.0). At age 18, the proportion of variance in NSSI explained by genetic factors was 53%, and the remaining variance was explained by non-shared environmental factors (47%). At age 24, genetic factors explained 66.6% of the variance in SA between ages 18 and 24, largely explained by shared genetic factors with NSSI reported at age 18. We found evidence that NSSI reported at age 18 had a strong genetic correlation with incidence of SA between ages 18 and 24.