

Public Abstract

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A Behavior Genetic Study of Self-Harm, Suicidality, and Personality in African American and White Women

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Suicide attempts and self-harm (e.g., cutting) lead to a significant public health burden among adolescents and young adults in medical costs, years of life lost, and suffering. This study is an examination of the genetic and environmental risk factors that lead to suicidal and self-harm behaviors in female young adults, and racial differences in the strength of those risk factors. By using a twin study design, it was possible to disentangle the degree to which genes and the environment shape these behaviors.

Suicidal and self-harm behaviors proved to be strongly influenced by both genes and environment, and are influenced by substantially the same pool of genes. However, self-harm but not suicide attempts was also influenced by some genes that do not influence both outcomes.

Individuals who had a personality style of being easily upset or impulsive were more likely to engage in suicidal or self-harm behavior. This was rooted in shared genetic influence. Similarly, individuals who had mental illnesses such as depression or substance abuse were more likely to engage in these behaviors, and this could also be accounted for by shared genetic influence. After accounting for genetic influence common to personality traits and mental illness, self-harm but not suicide attempts had unexplained genetic influence remaining. There must be further factors to account for its genetic basis.

When examined by race, suicidal behaviors were more common in African American than White women, while self-harm was equally prevalent. However, genetic influence on self-harm and suicide attempts did not vary by race.