

Nature and nurture factor into parent-child transmission of suicide attempts, suicide deaths

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A published paper by VCU researchers is one of the most comprehensive to look at parent-child transmission of suicide attempts and suicide deaths. Credit: Virginia Commonwealth University

Findings of a Swedish population study suggest that the likelihood of suicide attempts can be transmitted from generation to generation in families and that nature and nurture both play a role, according to an *American Journal of Psychiatry* paper published Friday by authors from Virginia Commonwealth University and Lund University.

"Genes play a significant role, especially in [suicide attempt](#), but they're by no means the sole reason why it runs in families. Suicidal behavior can also be culturally or psychologically transmitted from their [family](#) relatives," said the study's lead author, Kenneth S. Kendler, M.D., director of the Virginia Institute for Psychiatric and Behavioral Genetics at VCU. "These findings give a richer picture that this is not only our genes governing our action: This kind of behavior is complex and originates from a mixture of genetic inheritance and the environmental experiences we have."

Kendler, a professor and eminent scholar in the Department of Psychiatry at the VCU School of Medicine, said the study is one of the most comprehensive to look at parent-child [transmission](#) of [suicide](#) attempts and [suicide deaths](#). Many past studies have looked at rates between twins or other siblings.

This Swedish population study compared four types of families: intact nuclear families, families where the [biological father](#) did not live with the family, families with a stepfather, and adoptees and their biological and [adoptive parents](#).

While researchers noted a moderately lower correlation of suicide attempt where the father did not live with the family or where a stepfather helped raise a child, overall they observed that parent-child transmission of suicide attempt was nearly equal parts nature (genetics) and nurture (rearing environment) across all other family types.

"If I'm an adoptee and I have an adoptive parent who raised me who attempts suicide and I had a biological parent who I'd never met who attempts suicide, they convey a virtually equal risk to me for suicide," Kendler said. "And if I'm living with a parent who's reared me and [is my biological parent], it's about twice as strong."

In controlling for other potential reasons for [suicidal behavior](#), such as factors stemming from [mental illness](#), Kendler said the researchers found there is something particular about vulnerability to suicide attempt that runs in families, regardless of whether psychiatric or substance-use disorders run in those families.

"[We asked], 'What happens if we control for all the background transmission of the psychiatric disorders—how much does the genetic transmission of suicide decline?' And the answer is almost half, 40% to be precise," Kendler said. "That certainly answers the question pretty clearly that, 'No, suicide doesn't run from parent to child completely through alcoholism, depression, schizophrenia or other mental illness.'"

The researchers also found that the nature of a parent transmitting risk to a child is not the same for suicide attempt as it is for suicide death.

"We were able to test pretty powerfully the question about whether it is fair to say that suicide attempt and suicide completion are just different measures of severity of the same kind of thing," Kendler said. "And the answer is no. They're related, but you can't simply say that [they're different measures of the same thing]."

The researchers also found that, in the three family types that were not adoptive, the transmission of suicide attempts was stronger to sons than to daughters.

The data was smaller for transmission in suicide deaths, but researchers

found that the magnitude of genetic transmission risk was smaller than with suicide attempt. Because death was rare in this population study, the environmental effects for parent-child transmission of suicide death were not clear.

"The findings of this study underscore the importance of our health care providers' role to pay careful attention to the warning signs of suicide, including family [medical history](#), when we talk to patients," said Peter Buckley, M.D., interim CEO of VCU Health System, interim senior vice president of VCU Health Sciences and dean of the School of Medicine. "It is remarkable the strides Dr. Kendler and his team have made in advancing the medical community's understanding of the impact that things like genetics, addiction, mental illness, family relationships and home environment can have on a person's health."

More information: Kenneth S. Kendler et al. The Sources of Parent-Child Transmission of Risk for Suicide Attempt and Deaths by Suicide in Swedish National Samples, *American Journal of Psychiatry* (2020). [DOI: 10.1176/appi.ajp.2020.20010017](https://doi.org/10.1176/appi.ajp.2020.20010017)

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