

Study highlights risks for self-harm events in children and adolescents

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The United States is in the midst of a mental health crisis with rising rates of hospitalization for suicide and self-harm events among children and adolescents.

A study, "Characteristics Associated with Serious Self-Harm Events in Children and Adolescents," set to be published in the June issue of *Pediatrics*, looked at how best to determine which [children](#) are at elevated risk for [self-harm](#).

Researchers identified four separate profiles to help [medical professionals](#) better assess children at elevated risk for a self-harm event.

"Predicting which children are at risk for serious self-harm events, such as [suicide attempts](#) or self-injurious behaviors, in the [emergency department](#) is extremely challenging," said senior author, James Antoon, MD, Ph.D., MPH, assistant professor of Pediatrics and Hospital Medicine at Monroe Carell Jr. Children's Hospital at Vanderbilt. "Our study provides an important step in evaluating the whole child in relation to self-harm risk assessment. These profiles can be used to better inform [clinical decision](#) making by providing a better assessment of overall risk of self-harm."

Four distinct profiles of psychiatric comorbidity in children and adolescents with varying levels of risk for a serious self-harm event were identified—low risk, moderate risk, high risk and very high risk. The clinical profiles are based on a more comprehensive and flexible framework that complements previous assessments and can help identify children at elevated risk for a self-harm event, according to the study.

The findings also showed unique and distinct patterns of comorbidity that are also distinguishable between age and sex.

The study identified 1,098 children 5-18 years of age hospitalized with a neuropsychiatric event at Monroe Carell and Children's Hospital of Colorado in Aurora, Colorado between April 2016 and March 2020. Of those hospitalized, 406 (37%) were diagnosed with a self-harm event.

A breakdown of findings:

- Very high-risk profile consisted of males ages 10-13 with ADHD, [bipolar disorder](#), [autism spectrum disorder](#) and other developmental disorders.
- Low-risk profile consisted of children ages 5-9 who had a non-mental health diagnosis and an absence of mood disorders, behavioral disorders, [psychotic disorders](#), developmental disorders, and trauma or substance-related disorders.
- High-risk profile included females ages 14-17 with depression and anxiety in conjunction with substance- and trauma-related disorders. Personality and eating disorders were also significant for this profile.
- Moderate risk had a significant absence of depressive disorders, suggesting that these disorders play a major role in driving the risk of suicidality.

The profiles considered demographic factors like age and sex, as well as overall underlying psychiatric and medical conditions.

"There are many interacting factors in children with self-harm events, ranging from individual, family, [social support](#) and specific life events," said lead author Mert Sekmen, a research assistant with the Division of Hospital Medicine at Monroe Carell. "We know that psychiatric diagnoses are a well-established risk factor for self-harm. For example, 70% of children who die by suicide have more than two psychiatric diagnoses."

According to study authors, previous studies focused on the independent risk of psychiatric diagnoses, such as depression or bipolar disorder, on self-harm events.

"Meaning after taking everything else into account, what are the odds of

self-harm in someone with bipolar disorder? Or with a child with autism? This approach fails to consider the holistic and complex interactions that make up risk for self-harm," said Sekmen. "We cannot evaluate these events without considering the whole child. For example, taking into account the interplay between age, sex, autism and ADHD at the same time."

"Our study provides a novel approach that takes the child's entire medical and psychiatric profile into account and assesses what overall constellations of factors are associated with imminent self-harm," said Antoon.

The study authors agree that further study is needed to validate these risk profiles in larger populations and develop prognostic and clinical decision support applications that provide real-time risk assessments for providers.

More information: Characteristics Associated with Serious Self-Harm Events in Children and Adolescents, *Pediatrics* (2023).

Provided by Vanderbilt University Medical Center

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