

The health and economic toll of gun violence in youth

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Since 2020, firearms have been the number one cause of death among children and teens in the United States, surpassing even car accidents, according to the U.S. Centers for Disease Control and Prevention. In 2022, more than 4,500 young people died from firearm injuries.

In addition to those who die, thousands more young people survive

[firearm](#) injuries each year. The harm from these injuries reverberates for months and years, with ripple effects on parents and siblings, according to the findings of a new study published Nov. 6 in the November issue of *Health Affairs*.

"The unspeakable tragedy of youth gun violence has overshadowed the massive [health](#) crises that occur in the wake of injuries and deaths," said study author Zirui Song, associate professor of health care policy and medicine in the Blavatnik Institute at Harvard Medical School.

Song and colleagues conducted what they say is likely the most rigorous study to date of the devastating ripple effects of both non-fatal and fatal firearm injuries among youth and their families in the United States. Most previous research, including work by Song and colleagues, either left kids out or lumped them together with adults.

The new study shows that the impact on family members is even greater when a child suffers a firearm injury than when another family member is injured.

"Gunshot survivors and their families often experience long-lasting, invisible injuries, including psychological and substance-use disorders with roots in the shared trauma they have experienced," said Song, who is also a general internist at Massachusetts General Hospital. "It's important for clinicians to be aware that these families are at an increased risk for these conditions so that they can receive the support and care they need."

Long-lasting health impact of childhood gun injuries on survivors and families

The researchers analyzed commercial health insurance claims to study

three groups of people: 2,052 child and adolescent gunshot survivors were compared with a [control group](#) of 9,983 similar young people who did not experience gun injuries; 6,209 family members of survivors (moms, dads, siblings) were compared with 29,877 peers who did not have such an experience; and 265 family members of young people who died from a firearm injury were compared with 1,263 people who did not experience the loss of a child or sibling to gunshots. For the purposes of this study, children and adolescents were defined as people from ages 0–19.

Youth survivors had a 68% increase in [psychiatric disorders](#) and a 144% increase in [substance use disorders](#) compared with the control group. They also averaged \$34,884 more, on average, spending in health care in the first year alone relative to the control group, or 17 times more than their pre-injury spending.

No one can put a price on the unimaginable suffering a family experiences when a child is shot, Song said, but the rise in health care use offers valuable clues about the scale of the trauma and hints about the kind of health services young people and their families need in its aftermath.

The moms and dads of injured children experienced a 30% increase in psychiatric disorders, compared with parents whose children did not sustain gunshot injuries.

Somewhat counterintuitively, there was a small reduction in routine medical care among the mothers and siblings of firearm victims. This finding, the researchers say, could mean that the family members were neglecting preventive visits and other less urgent care. Indeed, other research shows that these types of visits tend to get crowded out by more pressing concerns such as dealing with medical care for the child who was injured.

The researchers also noted that the siblings of survivors did not have an increase in mental health care visits or diagnoses. The researchers said this could be because the mental health effects of gun violence on people close to those shot often go underrecognized.

"The siblings of young people who suffer firearm injuries may not be accessing much-needed support in the aftermath of familial trauma," Song said.

Unsurprisingly, [family](#) members of [young people](#) who died from a firearm [injury](#) experienced even more dramatic effects. Those who lost a child or a sibling to firearm injuries experienced more than twice as many psychiatric disorders after their loss than before it. The increase in fathers was particularly sharp, with more than five times as many psychiatric disorders in the months following the fatal shooting of a child than in the months before. Mothers of children who were killed had a 15-fold increase in mental health visits, and fathers, who rarely had mental [health care](#) before losing their child, exhibited an 87-fold increase in mental health visits.

Song and colleagues said that the new findings can help clinicians identify more promptly those in need of help by improving screening for mental health problems not only among survivors of firearm injuries, but also among their siblings, parents, and perhaps even other [family members](#). This trauma-informed approach is key, and it is starting to be taught more to medical trainees, the researchers said.

Why firearm injuries may continue to rise

The researchers emphasized that it is also important for everyone to practice gun safety, since children and teens are increasingly exposed to firearms.

Studies have shown that living in a home with firearms increases the risk for firearm injuries. An estimated 30 million children in the U.S. live in households with firearms. Nearly 4.6 million children in the U.S. live in homes where at least one firearm is kept loaded and unlocked. The number of children living in households with at least one firearm has gone up by 5 million since 2019.

Medical professionals have a role to play in promoting gun safety, Song said, and many professional organizations, including the American College of Physicians, the American Nurses Association, and the American Academy of Pediatrics have developed policies and procedures to help their members counsel families on the importance of firearm safety.

"Clinicians see firsthand the realities of gunshot wounds," Song said. "In addition to patching up the injured and treating the traumatized, clinicians have opportunities to help prevent [firearm injuries](#) from happening."

Additional authors were José Zubizarreta, Mia Giuriato, Katherine Koh, and Chana Sacks.

More information: Firearm Injuries In Children And Adolescents: Health And Economic Consequences Among Survivors And Family Members, *Health Affairs* (2023). [DOI: 10.1377/hlthaff.2023.00587](https://doi.org/10.1377/hlthaff.2023.00587). www.healthaffairs.org/doi/abs/.../hlthaff.2023.00587

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