

# Firearm Violence and Children



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## KEYWORDS

- Firearm violence • Minoritized groups • Low-income and middle-income countries
- Children

## KEY POINTS

- Firearm violence is the leading cause of death among US children and adolescents.
- Adolescents, racially minoritized youth, and children from low-income communities are disproportionately affected.
- Exposure to firearm violence has long-term effects on mental health, cognitive development, and socioeconomic outcomes.
- Evidence-based interventions at the school, community, and health care system levels can mitigate harm.
- Comprehensive firearm policy and improved data infrastructure are essential to prevention efforts.

## INTRODUCTION: FIREARM VIOLENCE AS A GLOBAL PUBLIC HEALTH CRISIS

Firearm violence is widely recognized as one of the most pressing humanitarian crises of the twenty-first century, with profound implications for children's health and well-being. Around the world, communities face firearm-related mortality and morbidity that disproportionately affect the most vulnerable populations. Unlike many other large-scale health crises, firearm violence is the direct result of human behavior, weapon availability, and policy decisions, and is therefore entirely preventable. In the United States, firearms have now surpassed vehicle crashes to become the leading cause of death among children and adolescents, underscoring the urgent need for coordinated action.<sup>1</sup>

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| Abbreviations |                                               |
|---------------|-----------------------------------------------|
| CBT           | cognitive behavioral therapy                  |
| HPA           | hypothalamic-pituitary-adrenal                |
| HVIPs         | Hospital-based violence intervention programs |
| LMICs         | low-income and middle-income countries        |
| PTSD          | posttraumatic stress disorder                 |
| TF-CBT        | trauma-focused CBT                            |

Recent work situates firearm violence within broader patterns of structural and political determinants of health. Analyses of firearm ownership, availability, and policy variation demonstrate that firearm violence is not random but strongly correlated with social structures and regulatory frameworks.<sup>2</sup> Recent modeling of firearm ownership trends across US states, revealed clear spatiotemporal patterns linked to cultural norms and legislative differences.<sup>2</sup> Globally, firearm violence in low- and middle-income countries is compounded by fragile health systems, a cycle of armed conflict, and access to unrestricted illegal firearms.<sup>3</sup> These findings expose a dual crisis of violence and inadequate data infrastructure, reflecting not only tragedies, but also structural failures in governance and prevention.<sup>4</sup>

Collectively, the data clearly indicate that firearm violence is more than a law enforcement or political issue: it is an urgent matter of child health that warrants mobilization of resources and expertise equivalent to other major public health emergencies. Pediatric clinicians, researchers, and policymakers share a responsibility to document, prevent, and mitigate the glaringly disproportionate impact of firearms on children.

PEDIATRIC FIREARM VIOLENCE

In the United States, firearms are the single leading cause of death among children and adolescents, surpassing motor vehicle crashes and other injuries.<sup>5</sup> Longitudinal analyses cataloged more than 1400 school shootings between 1997 and 2022, events that not only account for direct fatalities and injuries but also generate widespread fear, media exposure, and secondary trauma among students, families, and school personnel.<sup>6</sup> The frequency of such incidents has accelerated in recent years, mirroring broader societal trends of increased firearm availability and polarized debates over firearm regulation.

Geospatial studies further extend this epidemiologic lens into everyday community settings. Research in Compton, California, found that firearm-related homicides clustered along walkable routes frequently used by adolescents commuting to and from school, underscoring that pediatric firearm exposure extends well beyond high profile shootings.<sup>7</sup> For many children, the threat of firearm violence is embedded in the fabric of daily life.

More broadly, exposure to firearm violence during adolescence predicts heightened risks of depression, anxiety, substance use, academic disruption, and countless other poor health, learning, and developmental outcomes.<sup>8</sup> Such exposures contribute to the normalization of violence, shaping risk behaviors and perpetuating intergenerational cycles of disadvantage.

SUBGROUPS AT HEIGHTENED RISK OF FIREARM VIOLENCE

Firearm violence is not evenly distributed across populations. Its burden falls disproportionately on children and adolescents from low-income households, racially and

ethnically minoritized groups, and communities facing structural disadvantages. These disparities underscore the role of social determinants of health in shaping vulnerability to firearm injury and exposure.

Socioeconomic disadvantage is a consistent predictor of firearm violence exposure. Children living in neighborhoods characterized by concentrated poverty, limited educational and employment opportunities, and inadequate community infrastructure are placed at high risk and far more likely to be victims or witnesses of firearm violence. Qualitative reviews of community interventions highlight how underfunded schools and limited access to health care exacerbate vulnerability.<sup>9</sup> Community-level analyses using measures such as the Social Vulnerability Index further demonstrate that poverty and disinvestment translate directly into increased pediatric firearm injury risk.<sup>10</sup>

Beyond income, race and ethnicity are powerful predictors of firearm exposure. Black and Hispanic children are disproportionately more likely than their White peers to witness or live near fatal shootings, even after accounting for neighborhood poverty.<sup>11</sup> Environmental racism—including exposure to poverty, segregation, and systemic disinvestment—amplifies these risks.<sup>12</sup> Exposure to deadly firearm violence is disproportionately concentrated among Black and Hispanic adolescents, with downstream consequences for mental health, education attainment, and broader health disparities.<sup>13</sup>

These vulnerabilities often intersect. Many children and teens experience overlapping risks of poverty, racial segregation, and systemic disinvestment, leading to compounded exposures. Structural inequities—such as discriminatory housing policies, underfunded schools, policing practices, and unequal and limited access to physical and mental health care—further intensify this convergence. Children who live at these intersections may face daily firearm exposure not as isolated events but as part of a broader environment of chronic adversity. For example, neighborhoods with concentrated firearm violence often overlap with areas of limited recreational space and restricted access to mental health services, creating cumulative disadvantages that undermine resilience.

Frequent exposure to firearm violence in structurally disadvantaged contexts can perpetuate intergenerational cycles of risk and constrained opportunity, not because violence is accepted as normal, but because chronic threat destabilizes developmental, educational, and economic trajectories. Importantly, children, families, and communities affected by firearm violence consistently resist narratives that frame violence as inevitable or pathologize those who live amid it, demonstrating resilience, mutual support, and sustained efforts to protect youth despite persistent exposure. Together, these realities highlight the limitations of individual-level explanations and underscore the need to shift attention upstream—toward the policies, systems, and historical decisions that have shaped inequitable environments and facilitated widespread firearm availability. Addressing these disparities therefore requires not only individual- and family-level interventions, but also structural reforms across housing, education, health care, and community investment that reduce exposure and expand opportunity.<sup>4,13</sup>

## HEALTH AND PSYCHOSOCIAL IMPACTS OF FIREARM VIOLENCE

Beyond immediate injuries and fatalities, firearm violence imposes profound and lasting burdens on children and adolescents across mental health, cognitive development, and socioeconomic trajectories.

In line with the literature on adverse childhood experiences, it has been documented that exposure to firearm violence is consistently associated with elevated risks of

depression, anxiety, and posttraumatic stress disorder (PTSD) among youth.<sup>14</sup> Significant declines in quality of life and increases in trauma-related symptoms have been documented among children living in neighborhoods heavily affected by firearm violence.<sup>15</sup> Systematic reviews further confirm that exposure to shootings—whether witnessed or directly experienced—is linked to heightened risks of emotional dysregulation, externalizing behaviors, and suicidality, with effects that persist across time.<sup>16</sup> Mass shootings, although far less common than community violence, exert uniquely severe psychological consequences, including elevated rates of PTSD, grief reactions, and academic disruption among child and adolescent survivors.<sup>17</sup>

The developmental effects extend into cognition and education. Community exposure to firearm homicide has been associated with impaired academic performance, absenteeism, and reduced concentration in school.<sup>18</sup> Exposure is also linked with increased handgun carrying among adolescents, reflecting maladaptive coping mechanisms and altered decision-making processes.<sup>19</sup> Neighborhood-level dynamics compound these risks, as environments with frequent shootings weaken trust and collective efficacy, undermining developmental processes essential for learning, cognitive growth, and social development.<sup>20</sup>

The biological mechanisms underlying these psychosocial outcomes are increasingly well described. Repeated trauma exposure activates the hypothalamic-pituitary-adrenal (HPA) axis, leading to chronic elevations in cortisol and toxic stress.<sup>21</sup> Over time, these processes contribute to structural changes in the amygdala, hippocampus, and prefrontal cortex—regions critical for emotional regulation, memory, and executive functioning.<sup>22,23</sup> Such neurobiological alternations highlight firearm violence as not only a social determinant of health but also an exposure with lasting neurodevelopmental implications.

The long-term socioeconomic implications are of comparable magnitude. Early exposure to firearm violence predicts disrupted educational attainment and diminished social mobility, perpetuating cycles of disadvantage and community disinvestment.<sup>24</sup>

For pediatric clinicians and public health practitioners alike, these findings highlight the need for proactive, trauma-informed care in clinical, school, and community settings. Validated screening tools such as the Child PTSD Symptom Scale<sup>25</sup> and the UCLA PTSD Reaction Index<sup>26</sup> can help identify at-risk children in primary care and emergency settings. Trauma-informed practice also involves creating safe clinical environments, avoiding retraumatization, and providing anticipatory guidance for families about common behavioral and environmental responses to violence exposure.<sup>27</sup> Evidence-based interventions such as cognitive behavioral therapy (CBT) and trauma-focused CBT (TF-CBT) remain gold standards for treating pediatric trauma, with strong support for their effectiveness in reducing PTSD symptoms and improving functioning.<sup>28,29</sup> Clinicians can also partner with schools, community organizations and hospital-based violence intervention programs to ensure continuity of care. Ultimately, addressing the psychosocial consequences of firearm violence requires both individualized clinical care and advocacy for structural change to foster safe environments where children can thrive.

## THE AFTER-SCHOOL PERIOD AS A VULNERABILITY

Risk is not evenly distributed across the day. The after-school period—particularly between 3:00 and 6:00 PM—represents a window of heightened vulnerability when children are outside structured school supervision but may not yet be in the care of guardians. Analyses of pediatric firearm injuries by time and location demonstrate

significant clustering of incidents during after-school hours in community settings such as parks, streets, and transit routes.<sup>30</sup> These patterns reflect broader gaps in community safety infrastructure and point to opportunities for targeted, supervised, and accessible programming to reduce exposure during predictable risk windows.

Structured after-school programs have been shown to reduce violence involvement and improve academic and psychosocial outcomes, particularly for youth who attend schools with less access to evidence-informed after-school programming.<sup>23,31</sup> Programs that combine academic support, mentoring, social-emotional skill development, and recreational activities not only provide safe environments but also strengthen protective factors such as connectedness, prosocial behaviors, and self-regulation. Public health frameworks emphasize that support during these hours can buffer against both victimization and perpetration of firearm violence. Partnerships between schools, community organizations, and health care systems can ensure equitable access to such programs, particularly in areas where firearm risk is highest.

### SCHOOL-BASED INTERVENTIONS

Each year, dozens of K-12 schools in the United States tragically experience and must respond to intentional firearm violence. At the same time, and with the right support and resources, they are also uniquely positioned to meaningfully prevent school gun violence from occurring in the first place. In the United States, there are an estimated 90,000 K-12 schools serving nearly 51 million children and the research is very clear that investments in evidence-informed prevention would meaningfully reduce threats of firearm violence in schools.<sup>32</sup>

Specifically, evaluations of K-12 firearm incidents caution that purely punitive or security driven measures, such as increased surveillance or armed personnel, may foster climates of fear and disproportionately affect marginalized students.<sup>25</sup> In contrast, balanced approaches that integrate safety planning with mental health supports and evidence-based threat assessment strategies are more likely to prevent escalation while preserving a positive learning environment.

School communities themselves often express stronger support for interventions that build capacity rather than intensify control. Surveys of stakeholders show greater endorsement of social-emotional learning curricula, conflict resolution training, and supportive school climates compared with surveillance heavy strategies or hyper-realistic drills.<sup>33</sup> Trauma-informed practices—including staff training, embedded counseling, and peer-support-programs—are essential to mitigate psychological impacts of firearm exposure and promote academic continuity.

Emerging evidence also suggests that schools can play a central role in broader community firearm prevention. Programs that link schools with hospital-based violence intervention initiatives extend the continuum of care for students who have been directly injured by firearms, providing multidisciplinary rehabilitation, trauma-informed counseling, and support for academic and social reintegration.<sup>34</sup> These partnerships bridge medical, educational, and community systems to reduce reinjury and retaliation risk while promoting recovery and resilience. Collaboration with local behavioral health networks and restorative justice initiatives has likewise demonstrated promise in reducing recidivism and improving student outcomes.<sup>26</sup> Integration of firearm safety education into health curricula, when paired with parent engagement, may further support safe storage practices and reduce access among adolescents.

## COMMUNITY-LEVEL INTERVENTIONS

Community-level interventions are critical for reducing pediatric firearm violence and mitigating its effects. Approaches at this level address not only immediate safety but also the structural conditions that shape exposure to violence.

Health care–based interventions are one important component of comprehensive firearm violence prevention. Hospital-based violence intervention programs (HVIPs) identify youth at the point of care following firearm-related injuries and provide wrap-around services, including case management, mental health support, and connections to education and employment.<sup>34</sup> Evidence shows that HVIPs can reduce subsequent injury and arrests, while also improving psychosocial outcomes among adolescents treated for violent injury.<sup>35</sup> Emerging data further suggest that medical-legal partnerships embedded within trauma care settings can address unmet legal and financial needs, such as access to income supports, victim compensation, housing problems, and benefits navigation, that commonly arise during recovery from violent injury.<sup>36</sup> Integrating pediatric providers into these multidisciplinary initiatives helps ensure that children and adolescents exposed to violence are connected with sustained medical, psychosocial, and structural support over time.

Community violence interruption models represent another pillar of prevention. Programs such as Cure Violence and Advance Peace employ trained credible messengers to mediate conflicts, promote nonviolent norms, and provide mentorship to youth at risk of perpetration or victimization. Evaluations of these models suggest reductions in shootings and improvements in community cohesion, although sustainability often depends on stable funding and policy support.<sup>37,38</sup>

Prevention and resilience-building extend beyond individual services. Early community-wide injury prevention efforts emphasized the creation of safe physical environments through coordinated investments in neighborhood spaces, demonstrating the feasibility and impact of place-based approaches to violence reduction.<sup>39</sup> Building on this foundation, contemporary studies show that investments in safe green spaces, recreational facilities, and community centers are associated with declines in neighborhood firearm violence and improved perceptions of safety among children.<sup>40</sup> These environmental strategies reduce opportunities for violence while fostering collective efficacy and community engagement.

Finally, support for individuals and communities after firearm violence occurs is a vital but sometimes overlooked dimension. Community-based grief counseling, school-based trauma services, and peer-support networks help buffer long-term psychosocial harm. Partnerships between health care, schools, and community-organizations can ensure continuity of care and reduce disparities in access to trauma-informed services.<sup>41</sup>

Together, these multi-level interventions demonstrate that preventing and mitigating pediatric firearm violence requires coordinated strategies across health care, community organizations, and policy domains.

## FIREARM POLICY

Firearm policy is one of the strongest determinants of pediatric firearm exposure and outcomes. Differences in state and national regulations contribute directly to disparities in firearm mortality among children. Stronger firearm laws—particularly those related to safe storage, background checks, and child access prevention—are consistently associated with lower rates of pediatric firearm deaths.<sup>42,43</sup>

Recent analyses of state-level firearm policies show that states with more comprehensive firearm laws—often summarized using composite *policy grades* that reflect

the strength and breadth of regulations such as background checks, permitting requirements, and child access prevention provisions—experience lower fatalities from mass shootings, including among youth.<sup>44</sup> Conversely, the diffusion of punitive firearm preemption laws, which prohibit local governments from enacting firearm regulations that exceed state standard, had limited the ability of communities to implement evidence-based prevention strategies tailored to local risk patterns. These constraints are particularly relevant for pediatric injury prevention, as they restrict locally driven approaches to safe storage, youth access reduction, and community-based interventions.<sup>45</sup> Public opinion data also reveal strong parental support for age-related restrictions and safe storage policies, suggesting broad acceptability of pediatric-centered firearm regulation.<sup>46</sup>

Child access prevention laws remain among the most effective at reducing unintentional firearm injuries and suicides among adolescents.<sup>47</sup> Universal background checks and licensing requirements further reduce rates of youth firearm homicide and suicide, with benefits extending across state lines.<sup>48,49</sup> While some policies, such as restrictions on high-capacity magazines and assault weapons, show mixed evidence on pediatric outcomes, international comparisons demonstrate that countries with comprehensive regulations consistently report much lower rates of firearm-related child mortality than the United States.<sup>50</sup>

These findings highlight firearm policy as both a clinical and public health priority. Comparative experience from other high-income countries demonstrates that comprehensive firearm regulation can substantially reduce firearm-related morbidity and mortality among children, underscoring the preventability of these outcomes.<sup>51</sup> Pediatric clinicians can contribute by counseling families on safe storage, supporting legislation grounded in evidence, and engaging with policymakers to reduce preventable child deaths.

## GAPS IN DATA AND WHY THAT MATTER

Despite increasing recognition of firearm violence as a pediatric public health crisis, critical data gaps undermine prevention and intervention efforts. Historically, federal restrictions on firearm research funding constrained surveillance and slowed scientific progress.<sup>52</sup>

Recent studies emphasize the urgent need to close these gaps. Progress in pediatric firearm research has accelerated modestly in recent years, but the field still lags far behind other leading causes of child mortality.<sup>53</sup> Limitations include the lack of standardized national surveillance for nonfatal firearm injuries among children. Mortality data are relatively well documented, but information on emergency department visits, hospitalizations, and long-term functional outcomes remains fragmented.<sup>54</sup>

Disaggregated data are another deficiency. Without systematic reporting by age, race, ethnicity, and geography, disparities remain obscured, hindering the development of tailored prevention strategies.<sup>55</sup> Experts argue that revitalizing developmental and longitudinal research is essential to understand how firearm exposure across childhood shapes later health trajectories.<sup>56</sup>

Closing these gaps will require coordinated federal and state investments in surveillance infrastructure, standardized reporting mechanisms, and sustained funding. Clinicians and researchers can contribute by integrating systematic data collection into health care and school systems, strengthening the evidence base for equitable prevention.

In the global context, firearm violence and conflict-related injury represent major threats to child health and are poorly captured by existing surveillance systems,

particularly in low- and middle-income countries (LMICs) where health information infrastructure is limited and conflict disrupts data collection.<sup>57</sup> Armed conflict and chronic exposure to violence impair children's physical and psychological development and are associated with a range of adverse health outcomes across settings.<sup>58</sup> Without standardized global reporting of nonfatal firearm injuries, disabilities, and long-term outcomes, these burdens remain obscured, hindering coordinated prevention and humanitarian response efforts.<sup>57</sup> Events such as the December 14, 2025 mass shooting at Bondi Beach in Sydney, where 2 gunmen killed at least 15 people, including at a Hanukkah celebration, despite Australia's historically strict firearm laws, underscore that firearm violence and its consequences are not unique to any one national context and that even well-regulated settings can experience sudden catastrophic events.<sup>59</sup> Strengthening global injury surveillance, harmonizing reporting standards across countries and conflict-affected areas, and integrating these data into international health frameworks are therefore essential to improving pediatric protection, clinical response, and equitable prevention efforts worldwide.<sup>57</sup>

### CHALLENGES OF COLLECTING DATA ON CHILDREN

Collecting accurate data on firearm violence affecting children presents unique methodological and ethical challenges. Children may underreport exposure due to fear, stigma, or mistrust of adults, while parental reporting often fails to capture exposures occurring outside the home.<sup>60,61</sup> Administrative datasets such as hospital or school records rarely capture the full range of firearm experiences, particularly noninjury exposures like witnessing shootings.<sup>62</sup>

Linking across data systems—healthcare, education and child welfare—remains technically and legally complex because of privacy and confidentiality constraints.<sup>63</sup> Ethical considerations add further complexity: studies involving minors must safeguard against retraumatization, ensure informed consent, and apply developmentally appropriate measures and protocols.

Best practices include the use of validated child-focused instruments, trauma-informed approaches to data collection, and inclusion of community advisory boards to guide sensitive research.<sup>64</sup> Expanding infrastructure for child-centered violence research, coupled with training investigators in trauma-informed methods, will be critical to advancing an accurate and ethical evidence base.

### FUTURE DIRECTIONS AND IDEAL NEXT STEPS

Future progress in preventing pediatric firearm violence will depend on integrating public health, clinical, and policy approaches. Strengthening research infrastructure remains a top priority. Dedicated funding streams are needed to support longitudinal studies, randomized trials of interventions, and improved surveillance systems capable of capturing both fatal and nonfatal firearm injuries in children.<sup>41,50</sup>

Expanding community partnerships is equally critical. Models that link health care providers with schools, community organizations, and local governments have demonstrated promise in addressing social determinants of health that underlie firearm risk.<sup>25,33</sup> Scaling these collaborations requires stable funding and integration into broader child health initiatives.

Clinicians also play an important role in advancing prevention. Normalizing firearm safety counseling—similar to seatbelt or tobacco cessation counseling—can enhance parental adoption of safe storage practices.<sup>64</sup> Given that firearm-related mortality includes both homicide and suicide, counseling may also include lethal means safety strategies, including the temporary removal or off-site storage of firearms during

period of elevated suicide risk.<sup>65</sup> Evidence suggests that lethal means counseling in clinical settings can increase adoption of secure storage practices and reduce access to firearms during acute crises.<sup>66</sup> However, widespread implementation remains limited by training gaps, time constraints, and legal barriers in some states.<sup>67</sup>

Finally, addressing pediatric firearm violence requires sustained policy engagement. Evidence indicates that strong firearm laws are protective, but variability in adoption perpetuates inequities. Continued advocacy from clinicians, researchers, and communities is essential to translate evidence into policy that safeguards children's health.<sup>41,46–48</sup>

## SUMMARY

Firearm violence represents a major threat to children's health and well-being in the twenty-first century and is increasingly recognized as a humanitarian crisis with global implications.<sup>68</sup> Across settings, firearm violence intersects with structural inequities, displacement, and community instability, contributing to preventable injury, disability, and psychological trauma among children. In the United States, firearm-related mortality has become a leading cause of death among children and adolescents, and its burden is not evenly distributed: children from low-income families, racially and ethnically minoritized groups, and structurally disadvantaged communities tragically bear the heaviest risks.<sup>9–13</sup> Beyond mortality, firearm violence disrupts mental health, cognitive development, and long-term socioeconomic trajectories.<sup>15–20</sup>

Evidence demonstrates that prevention is possible. School-based interventions, community partnerships, and hospital-based programs reduce risks and promote resilience.<sup>23,25,26,32–34</sup> Policy measures, including child access prevention laws, safe storage initiatives, and universal background checks, consistently correlate with lower rates of pediatric firearm injury and death.<sup>41,46–48</sup> However, data gaps and research limitations hinder the ability to fully capture the scope of the problem and to design precise interventions.<sup>52–54</sup>

Pediatric firearm violence is a preventable public health crisis. Reducing its toll will require coordinated action across health care, schools, communities, and policy makers, guided by a commitment to child health equity and informed by global lessons on protecting children from violence in humanitarian contexts.<sup>68</sup>

## INSIGHTS TO ACTION

- Firearm violence is the leading cause of death among children and adolescents in the United States.<sup>5</sup>
- Risk is disproportionately concentrated in low-income neighborhoods and racially/ethnically minoritized communities.<sup>11–13</sup>
- Exposure to firearm violence is strongly associated with mental health consequences, including depression, anxiety, and PTSD, as well as adverse effects on cognition and academic performance.<sup>15–20</sup>
- The after-school period represents a predictable window of heightened vulnerability when pediatric firearm injuries cluster.<sup>21</sup>
- Trauma-informed, school-based, and community-level interventions can reduce risks and foster resilience.<sup>23,26</sup>
- Firearm policy—including child access prevention laws, universal background checks, and safe storage requirements—is consistently associated with lower rates of pediatric firearm injury and death.<sup>41,46–48</sup>

- Clinicians can contribute by integrating firearm safety counseling into routine practice and engaging in data collection to strengthen the evidence base.<sup>64</sup>
- Pediatric clinicians can also support prevention by partnering with schools and community organizations to expand access to safe, supervised after-school programming and other upstream supports that reduce exposure during predictable high-risk periods.<sup>21,23</sup>

## DISCLOSURE

The authors have no relevant financial or commercial conflicts of interest to disclose.

## REFERENCES

1. Snooks C, Levas M, Schultz ML. Gun violence in children: a public health crisis and an upstream approach to our response. *WMJ (Wisconsin Medical Journal)* 2024;123(6):543–5.
2. Barak-Ventura R, Marín MR, Porfiri M. A spatiotemporal model of firearm ownership in the United States. *Patterns* 2022;3(10):100546. <https://doi.org/10.1016/j.patter.2022.100546>.
3. Jadoon OK, Shazia S, Ullah I, et al. The global scourge of Gun violence: a call for action. *J Ayub Med Coll Abbottabad* 2024;36(4):14150. <https://doi.org/10.55519/JAMC-04-14150>.
4. Benach J, Muntaner C, et al. Arms, conventional wisdom, and public health Policy. *Int J Health Serv* 2022;52(4):493–510.
5. Martin SA, Bishop K, Choma EG, et al. Pediatric firearm violence in America. *J Pediatr Health Care* 2024;38(2):123–30.
6. Andrews AL, Killings X, Oddo ER, et al. Pediatric firearm injury mortality epidemiology. *Pediatrics* 2022;149(4):e2021052739. <https://doi.org/10.1542/peds.2021-052739>.
7. Rapa, et al. School shootings in the United States: 1997–2022. *J Sch Health* 2023; 93(1):21–9.
8. Barboza-Salerno GE, Meshelemiah JCA, et al. Gun violence on walkable routes to and from school in Compton, California. *J Urban Health* 2023;100(4):567–78.
9. Walsh CS, Sullivan TN, Kliewer W, et al. A qualitative scoping review of community firearm violence interventions. *J Community Health* 2025;50(2):287–305.
10. Polcarí AM, Hoefler LE, Callier KM, et al. Social vulnerability index is strongly associated with pediatric firearm injury. *J Trauma Acute Care Surg* 2023;95(6): 1203–11.
11. Kravitz-Wirtz N, Bruns A, Aubel AJ, et al. Inequities in community exposure to deadly Gun violence. *J Urban Health* 2022;99(3):435–47.
12. Bray-Aschenbrenner, et al. Environmental racism: associations between poverty, racism, and pediatric firearm exposure. *Health Place* 2022;74:102769. <https://doi.org/10.1016/j.healthplace.2022.102769>.
13. James, et al. Racial/Ethnic disparities in adolescent firearm exposure and outcomes. *Pediatrics* 2021;147(5):e2020020281. <https://doi.org/10.1542/peds.2020-020281>.
14. Rajan S, Branäs CC, Myers D, et al. Youth exposure to violence involving a gun: evidence for adverse childhood experience classification. *J Behav Med* 2019; 42(4):646–57.
15. Paruk, et al. Trauma exposure and mental health among South African children. *Child Adolesc Psychiatry Ment Health* 2019;13:32.

16. Holloway, et al. Longitudinal impacts of pediatric firearm exposure on mental health and behavior: a systematic review. *Child Adolesc Psychiatry Ment Health* 2021;15(1):72.
17. Cimolai, et al. Mass shootings and child/adolescent psychological outcomes: a systematic review. *J Child Psychol Psychiatry* 2020;61(9):1044–62.
18. Bruns, et al. Community gun homicide and academic outcomes. *Educ Res* 2018; 47(8):521–32.
19. Comer JS, et al. Firearm violence exposure and adolescent handgun carrying. *J Adolesc Health* 2017;61(6):776–82.
20. Gard AM, Brooks-Gunn J, McLanahan SS, et al. Deadly Gun violence, neighborhood collective efficacy, and adolescent development. *PNAS Nexus* 2022;1(5):pgac243. <https://doi.org/10.1093/pnasnexus/pgac243>.
21. Shonkoff JP, Garner AS, et al. Committee on Psychosocial Aspects of Child and Family Health; Committee on Early Childhood, Adoption, and Dependent Care; section on Developmental and Behavioral Pediatrics. The lifelong effects of early childhood adversity and toxic stress. *Pediatrics* 2012;129(1):e232–46.
22. Ordoobadi AJ, Wickard A, Heindel P, et al. Quantifying pediatric gun violence by location and time of day: a call for focused intervention. *J Pediatr Surg* 2024; 59(5):923–30.
23. Reeping PM, Gobaud AN, Branas CC, et al. K–12 school shootings: implications for policy and clinical practice. *Pediatr Clin North Am* 2021;68(2):341–53.
24. Moin ASM, Dhawan S, Shieh C, et al. Increased hormone-negative endocrine cells in the pancreas in type 1 diabetes. *J Clin Endocrinol Metab* 2016;101(9): 3487–96.
25. Carter PM, et al. Stakeholder acceptability of school-based firearm violence prevention strategies. *J Prev* 2022;43(5):657–69.
26. Purtle J, Rich LJ, Bloom SL, et al. Hospital-based violence intervention programs targeting adolescents: a systematic review. *J Trauma Acute Care Surg* 2015; 79(6):983–93.
27. Forkey H, Szilagyi M. Trauma-informed care. *Pediatrics* 2020;145(2):e20193751. <https://doi.org/10.1542/peds.2019-3751>.
28. Silverman WK, Ortiz CD, Viswesvaran C, et al. Evidence-based psychosocial treatments for children and adolescents exposed to traumatic events. *J Clin Child Adolesc Psychol* 2008;37(1):156–83.
29. Cohen JA, Mannarino AP, Deblinger E. Trauma-focused CBT for children and adolescents: treatment applications. 2nd edition. New York: Guilford Press; 2017.
30. Durlak JA, Weissberg RP, Pachan M. A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents. *Am J Community Psychol* 2010;45(3–4):294–309.
31. Gottfredson DC, Cross AB, Wilson DM, et al. Effects of participation in after-school programs for middle school students: a randomized trial. *J Res Educ Eff* 2010;3(3):282–313.
32. Rajan S, Reeping PM, Ladhani Z, et al. Gun violence in K-12 schools in the United States: moving towards a preventive (versus reactive) framework. *Prev Med* 2022;165(Pt A):107280.
33. Skiba RJ, Arredondo MI, Williams NT. More than a metaphor: the contribution of restorative justice to school discipline reform. *Peabody J Educ* 2014;89(2): 206–28.
34. Juillard C, Smith R, Anaya N, et al. Saving lives and saving money: Hospital-based violence intervention is cost-effective. *J Trauma Acute Care Surg* 2015; 78(2):252–8.

35. Webster DW, Whitehill JM, Vernick JS, et al. Effects of Baltimore's Safe Streets program on gun violence: a replication of Chicago's CeaseFire program. *J Urban Health* 2013;90(1):27–40.
36. Tung EL, Pillai R, Sen-Gupta N, et al. Income support needs and bedside legal assistance for patients recovering from violent injuries. *JAMA Netw Open* 2025; 8(10):e2538044. <https://doi.org/10.1001/jamanetworkopen.2025.38044>.
37. McDaniel DD. Risk and protective factors associated with gang affiliation among high-risk youth: a public health approach. *Inj Prev* 2012;18(4):253–8.
38. Branas CC, Cheney RA, MacDonald JM, et al. A difference-in-differences analysis of health, safety, and greening vacant urban space. *Am J Epidemiol* 2011; 174(11):1296–306.
39. Laraque D, Barlow B, Durkin M, et al. Injury prevention in an urban setting: challenges and successes. *Bull N Y Acad Med* 1995;72(1):16–30. PMID: 7581311; PMCID: PMC2359423.
40. Jaycox LH, Cohen JA, Mannarino AP, et al. Children's mental health care following community violence: a review. *J Behav Health Serv Res* 2004;31(2): 213–36.
41. Ventura C, et al. Association of state firearm laws with firearm deaths among children. *AJPM Focus* 2024;3(2):100250. <https://doi.org/10.1016/j.focus.2024.100250>.
42. Fleegler EW, Lee LK, Monuteaux MC, et al. Firearm legislation and firearm-related fatalities in the United States. *JAMA Intern Med* 2013;173(9):732–40.
43. Duchesne J, Taghavi S, Toraih E, et al. State gun law grades and impact on mass shooting fatalities. *J Am Coll Surg* 2022;235(3):S153–4.
44. Macinko J, Cook J, Alpert A. The diffusion of punitive firearm preemption laws in the United States. *Am J Prev Med* 2023;65(2):197–205.
45. Jones VC, Wagner ED, Ward JA, et al. Parental support for age-related firearm policies: a national survey. *BMC Pediatr* 2025;25:145.
46. Monuteaux MC, Lee LK, Hemenway D, et al. Child access prevention laws and firearm fatalities among children aged 0 to 14 years. *Pediatrics* 2019;143(6): e20182307. <https://doi.org/10.1542/peds.2018-2307>.
47. Crifasi CK, Meyers JS, Vernick JS, et al. Effects of changes in permit-to-purchase handgun laws in Connecticut and Missouri on suicide rates. *Prev Med* 2015; 79:43–9.
48. Kaufman EJ, Morrison CN, Branas CC, et al. State firearm laws and interstate firearm deaths from homicide and suicide in the United States: a cross-sectional analysis. *Lancet Public Health* 2018;3(6):e323–31.
49. Grinshteyn E, Hemenway D. Violent death rates in the United States compared to those of the other high-income countries, 2015. *Prev Med* 2019;123:20–6.
50. Semenza DC. Addressing data deficiencies to prevent pediatric firearm violence. *Am J Public Health* 2024;114(2):152–4.
51. Grinshteyn E, Hemenway D. Violent death rates in the United States compared with those of other high-income countries. *Prev Med* 2019;123:20–6.
52. Stearns K, et al. Progress in pediatric firearm research in the United States. *Adv Pediatr* 2025;72:143–60.
53. Gani F, Sakran JV, Canner JK. Emergency department visits for firearm-related injuries in the United States, 2006–14. *Health Aff* 2017;36(10):1729–38.
54. Barber C, Azrael D, Hemenway D. Suicide mortality in the United States: the importance of attending to method in understanding population-level disparities. *Annu Rev Public Health* 2013;34:393–408.

55. Pardini DA, et al. Revitalizing developmental research for violence prevention. *J Clin Child Adolesc Psychol* 2021;50(6):893–909.
56. Turner HA, Finkelhor D, Hamby S, et al. Family structure, victimization, and child mental health in a nationally representative sample. *Soc Sci Med* 2013;87:39–51.
57. United Nations Children's Fund (UNICEF). Global status report on preventing violence against Children 2020. UNICEF. 2020. Available at: <https://www.unicef.org/sites/default/files/2020-06/Global-status-report-on-preventing-violence-against-children-2020.pdf>. Accessed January 16, 2025.
58. United Nations Children's Fund (UNICEF). Reporting on Children in armed conflict 2025. UNICEF. 2025. Available at: <https://www.unicef.org/reporting-children-armed-conflict>. Accessed January 16, 2025.
59. Gelineau K, Graham-McLay C, McGurk R. Father and son gunmen kill at least 15 people in attack on Hanukkah event at Sydney's Bondi Beach. Associated Press. 2025. Available at: <https://apnews.com/article/australia-shooting-sydney-bondi-beach-31f711f09f677d0f88091ece25f651c1>.
60. Finkelhor D, Hamby SL, Ormrod R, et al. The Juvenile Victimization Questionnaire: reliability, validity, and national norms. *Child Abuse Negl* 2005;29(4):383–412.
61. Vivolo-Kantor AM, Henessy KD, Holland KM, et al. Linking data systems for violence prevention: opportunities and challenges. *Am J Prev Med* 2016;51(5 Suppl 3):S137–45.
62. Trickett PK, Noll JG, Putnam FW. The impact of sexual abuse on female development: lessons from a multigenerational, longitudinal research study. *Dev Psychopathol* 2011;23(2):453–76.
63. Jaycox LH, Cohen JA, Mannarino AP, et al. Trauma-informed approaches to data collection with children exposed to violence. *J Behav Health Serv Res* 2004;31(2):213–36.
64. Rowhani-Rahbar A, Simonetti JA, Rivara FP. Effectiveness of interventions to promote safe firearm storage. *Epidemiol Rev* 2016;38(1):111–24.
65. Betz ME, Miller M, Barber C, et al. Lethal means access and assessment among suicidal emergency department patients. *Ann Emerg Med* 2016;67(5):584–92.
66. Runyan CW, Brooks-Russell A, Tung GJ, et al. Hospital emergency department lethal means counseling for suicidal patients. *Am J Prev Med* 2018;54(2):259–65.
67. Roszko PJ, Ameli J, Carter PM, et al. Clinician attitudes, screening practices, and interventions to reduce firearm-related injury. *Epidemiol Rev* 2016;38(1):87–110.
68. Global Burden of Violence Against Children Collaborators. The global burden of violence against children. *Lancet* 2024;403(10427):605–58. [https://doi.org/10.1016/S0140-6736\(23\)02641-6](https://doi.org/10.1016/S0140-6736(23)02641-6).