

POLICY BRIEF

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# Overview of The American School Shooting Study (TASSS)

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## SYNOPSIS

This policy brief reviews the creation of The American School Shooting Study (TASSS), a national-level database using open-source information, to examine school shootings in the United States and provide policymakers with the information they need to develop meaningful policies.

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## ABOUT THE AUTHORS

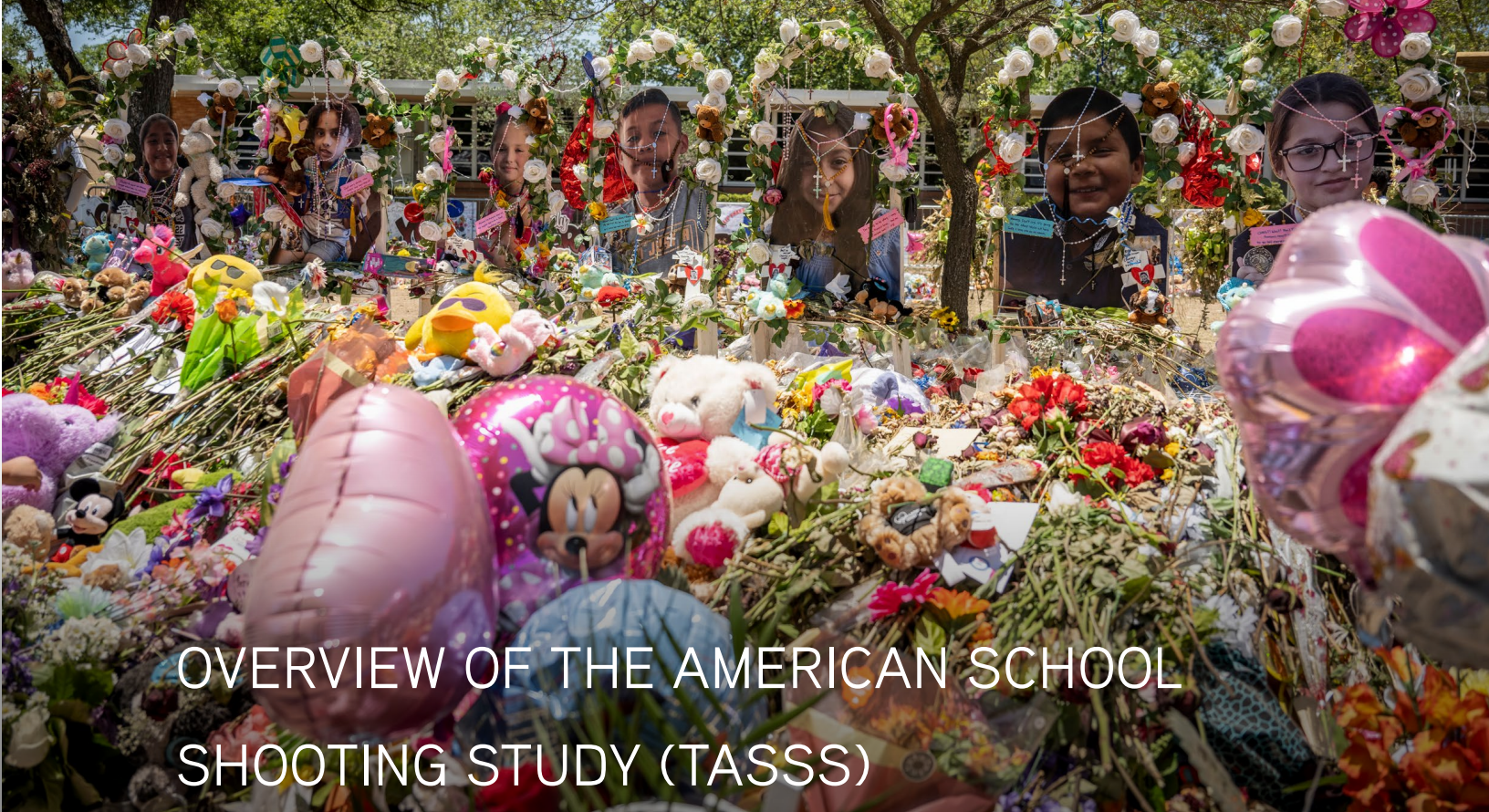
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## OVERVIEW OF THE AMERICAN SCHOOL SHOOTING STUDY (TASSS)

Although rare events, school shootings remain a pressing public policy issue in America. Importantly, available data show a modest upward trend in multiple-casualty school shootings.<sup>1,2</sup> Few crimes are as shocking as the recent mass shooting attack at the Robb Elementary School in Uvalde, Texas, on May 24, 2022, in which 19 students and two teachers were murdered. These high-profile events have led to heated debates about gun control, gun rights, mental health, and privacy rights.

Surveys suggest that Americans today tend to view schools as unsafe, and public fear over school violence has deepened.<sup>3</sup> Indeed, the adverse costs of school shootings go well-beyond the terrible loss of life and grief of the families and communities immediately impacted. The effects reverberate throughout the nation. Not only are teachers and schoolchildren directly exposed, but parents, police, first responders, nurses, surgeons, pastors, counselors, and custodians, to name a few, are also vicariously affected. In the wake of traumatic attacks, schools struggle to cope, and surviving students' school performance may suffer.<sup>4</sup>

Although research on school shootings has increased recently, much of the literature is inconsistent, primarily due to variations in datasets and school shooting definitions.<sup>5</sup> Most studies employ small nonprobability rather than randomly selected samples of US school shooters or prioritize mass shootings and lethal gun violence.<sup>6, 7</sup> By contrast, the limited quantitative studies tend to be more inclusive by studying fatal and nonfatal gun assaults.<sup>8, 9</sup> Even here, there are disparities in inclusion criteria, as some studies examine school-associated violence that transpires both on and off campus property.<sup>10</sup>

While extensive data have documented school crimes more broadly, there is far less information on school shootings. For instance, the Department of Justice's National Crime Victimization Survey's (NCVS) School Crime Supplement provides homicide numbers but exclude precise statistics on school shootings. This lack of consistent, national-level data has hindered the development of systematic research,<sup>11</sup> limiting our capacity to create and implement public policy that is directed toward reducing school shootings and is rooted in rigorous social science. Accordingly, we created a national-level database using open-source information to examine school shootings in the United States and provide stakeholders with the information they need to develop meaningful policies.<sup>12</sup>

## Methodology

One challenge to adopting effective policy solutions to school shootings is the limited understanding of the problem. Therefore, we sought to extend the literature by creating The American School Shooting Study (TASSS). Six criteria must be satisfied to include a shooting in TASSS:

### TASSS Inclusion Criteria

- The shooting must have occurred between January 1, 1990, and December 31, 2016.<sup>13</sup>
- The shooting must have occurred in the 50 States or Washington, DC.
- The shooting must have resulted in a criminal justice response that confirmed its occurrence and not merely be an unsubstantiated rumor.
- A firearm must have discharged explosives to propel a projectile. Thus, TASSS excludes plots (no discharge occurred) and cases where the perpetrator used non-gun weapons.
- The shooting injury must have occurred on the K-12 school's (both public and private) grounds, either inside the school building or outside in yards or parking lots that are also on school property.
- The gun discharge must have injured or killed at least one person with a bullet wound.



We reviewed over 40 sources, including existing databases, chronologies/listings, official records, law enforcement reports, scholarly works, newspaper accounts/listings, online encyclopedias, blogs, and watch-groups/advocacy reports. We also comprehensively searched and scraped the Internet, conducting keyword searches using major search engines and leading newspapers to locate relevant events. We treated each incident and the involved perpetrators as a case study with the goal of compiling virtually all public information about both the shooting and individuals involved. Upon pretesting a data collection strategy, we created a search protocol with over 60 search engines and websites. We searched these sources to identify relevant information about each event and the perpetrators. In doing so, we uncovered a range of information, including media accounts, court records, government records, obituaries, videos and documentaries, blogs, books and biographies, after-action and watch-group reports,<sup>14</sup> scholarly accounts, and social media information.

Upon completion of the search files, we assigned each incident to a different research assistant (RA) to review the collected documents and code relevant variables about the event (e.g., lethality, number of casualties, location, whether school was in session, and type of school) and the offender (e.g., age, sex, race, grade level, psychological issues, school failures/suspension/expulsion, etc.) into an encrypted, online data entry portal. Systematically coding the cases was an iterative process, as the RAs' data entry was repeatedly scrutinized, evaluated, corrected, and updated as needed.

## Findings

We identified 652 school shootings—of those, an average of 24 occurred each year. Shooting events were classified into one of four categories based on intent: self-harm/suicides, accidental discharges, intentional, and justified. Events that ended in murder-suicides were categorized as intentional. Over 25 percent involved self-harm/suicides and accidental discharges. Intentional interpersonal school shootings often receive the most public attention and we identified 473 (nearly 75 percent of all shootings) in total. On average, around 18 intentional school shootings occur each year, and mass homicide shootings remained outliers. [Table 1](#) provides a breakdown of the number of school shootings by year and type.

TABLE 1. Yearly Prevalence of School Shootings

Year	Intentional (72.55%)	Self-Harm (15.64%)	Accidental (11.20%)	Justified (0.61%)	Total Annual Incidents
1990	11	0	0	0	11
1991	22	2	5	0	29
1992	27	1	4	0	32
1993	30	7	4	0	41
1994	25	6	5	0	36
1995	11	2	1	0	14
1996	13	3	0	0	16
1997	10	2	1	0	13
1998	14	3	1	0	18
1999	14	5	3	0	22
2000	14	2	5	0	21
2001	12	6	3	0	21
2002	7	1	0	0	8
2003	9	8	1	0	18
2004	18	3	3	0	24
2005	25	0	7	0	32
2006	24	6	5	0	35
2007	20	9	1	0	30
2008	23	5	4	0	32
2009	25	5	3	1	34
2010	14	3	0	0	17
2011	13	1	4	1	19
2012	9	4	1	1	15
2013	17	5	2	1	25
2014	19	4	4	0	27
2015	18	5	1	0	24
2016	29	4	5	0	38
<b>TOTAL</b>	<b>473</b>	<b>102</b>	<b>73</b>	<b>4</b>	<b>652</b>

SOURCE: The American School Shooting Study (TASSS)

NOTE: Each school shooting represents one event and is categorized based on intent.

Of the 473 intentional shootings, publicly known perpetrators committed 354 incidents, which averaged 13 per year. In contrast, publicly unknown perpetrators (i.e., open sources did not identify the shooter because of their age or perpetrator was not identified) were responsible for 119 intentional shootings, averaging just five per year. Not surprisingly, we uncovered more open-source information for the known perpetrators.

Like nonschool firearms violence, intentional school shootings were more frequently nonfatal events. Almost 56 percent of all school shootings resulted in no deaths, and 44 percent (n = 209) were homicides. An average of eight fatal intentional school shootings occurred each year.

## What Do These Numbers Tell Us?

While it is common for the US to suffer from around 14,000–15,000 homicide events in a single year—and over 20,000 in 2020<sup>15</sup>—school shootings clearly encapsulate a tiny percent of this violence. Likewise, with more than 50 million students enrolled in grade K-12 schools each year, only a handful may commit school shootings. Even students who share common risk factors as school shooters (e.g., arrest histories, family troubles, gang affiliation, etc.) will likely never open fire at their school.

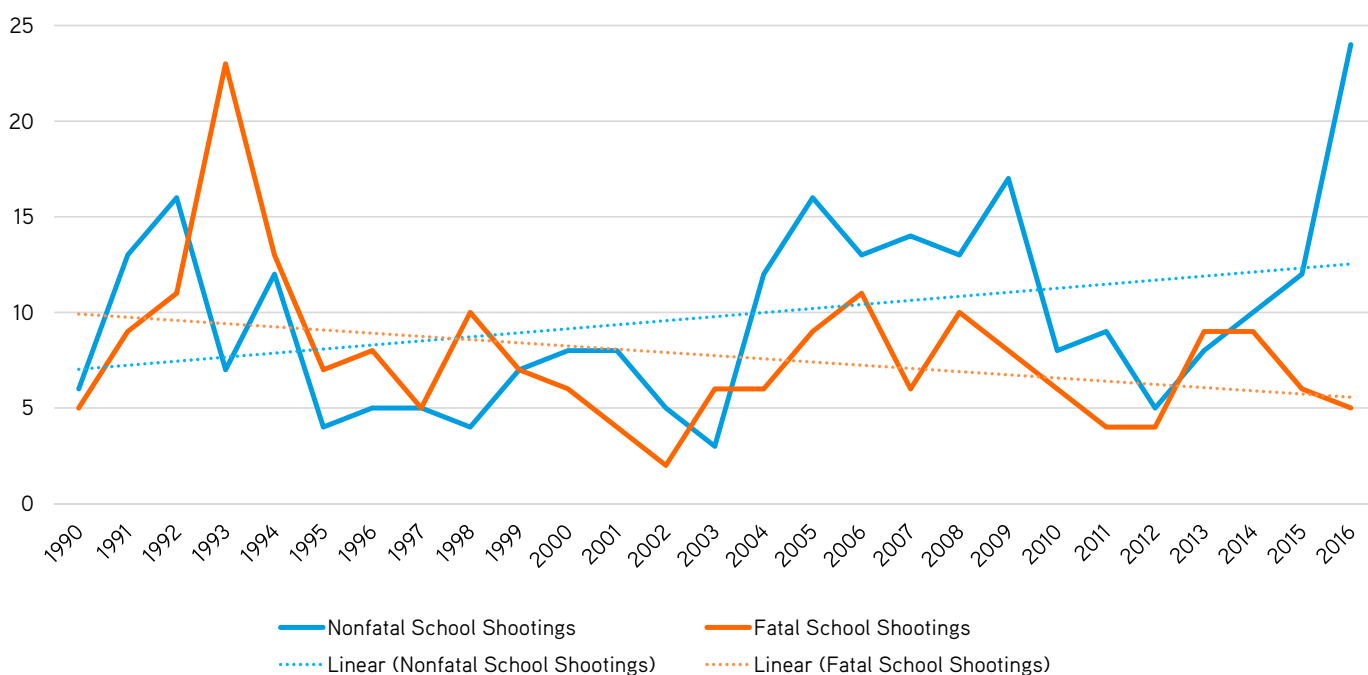
## No Clear Time Trend to Shootings

Considering the series of data from 1990 to 2016, no type (intentional, self-harm, etc.) increased and there is no clear time trend. The 1990s had the most fatal shootings in our study compared to 2001 to 2016 (see [Figure 1](#)). There has been a consistent increase in nonfatal shootings from 2012 to 2016. Fatal shootings did not follow this pattern. In some ways, these findings mirror general violence trends. For instance US violent crime and youth violence specifically has dropped significantly since 1993. Future research could address whether the consistent increase in nonfatal shootings seen recently was associated with improved medical care, faster emergency response times, and/or changes in policy related to police response.<sup>16</sup>

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FIGURE 1. Yearly Prevalence of Fatal and Nonfatal Intentional US School Shootings



## Self-Harm Versus Intentional Interpersonal Violence

Around 25 percent of school shootings involved suicide/self-harm and accidental shootings, and an additional 75 percent were intentional interpersonal violence. Self-harm may require different responses than intentional shootings, highlighting the need for increased access to mental health care for students. Further, 29 percent (n = 101) of the 354 known intentional shooting offenders were 20 years or older. Proportionately more of the adults committed fatal school shootings than the adolescents. Perhaps these adult shooters were more “capable,” more determined, or had greater experience with firearms generally. Regardless, it demonstrates the importance of understanding the different pathways to serious school violence.

## Elementary Versus High School

Similarly, we found that while most attacks targeted high schools, shootings occurring at elementary schools were deadlier. Importantly, adults were almost four times more likely than adolescents (26 percent versus 7 percent) to target an elementary school. It is possible that elementary school shootings are more deadly because of the population of younger victims were more physically vulnerable.

Finally, compared to high school students, elementary school students are less likely to possess or use guns. Middle and high school students often target their own schools (58 percent), whereas adults who target elementary schools (n = 27) sometimes suffer from mental illness (26 percent) or the school location is incidental to the aggressor’s motive (i.e., 48 percent were domestic violence). Thus, different opportunity structures across school types may account for some of the variation.

## School Shootings Characteristics

We found a high proportion (40 percent) of school shootings were committed by nonstudents who opened fire outside of the school building and during nonschool hours. Many of these shootings were motivated by nonschool issues like interpersonal disputes and gang activity. Thus, contrary to conventional views, student-perpetrated multi-victim attacks motivated by psychological distress represent a minority of cases.

Collectively, these findings imply that many school shootings are nonschool related. As such, they may represent community or neighborhood violence that spills onto the school grounds. Thus, policymakers may want to distinguish between school shootings occurring while school is in session and inside the building and shootings occurring outside the building when school is not in session. For these latter cases, policy responses may do well to incorporate school and community partnerships to address wider social problems.



## Adolescent School Shooters

An examination of the 253 known adolescent shooters found that most were young males, and many had faced adversity in school, personally, and at home. Around 26 percent had evidence of psychological issues, 19 percent had family problems, 21 percent were expelled or suspended at some point, close to 10 percent had dropped out of school, approximately 31 percent had criminal records, and around 21 percent were gang members. Thus, roughly a quarter of the adolescent school shooters exhibited risk factors (e.g., gang membership, prior suspension), and many had co-occurring ones. The knowledge gained here about these risk factors may benefit school officials going forward. Although the scope of this study to distinguish school shooters from other at-risk youth was limited, this information can nonetheless be integrated into current threat assessment criteria to better weigh the risks when making decisions about appropriate student level interventions.<sup>17</sup>

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## Takeaways for Policymakers

Rare events like mass shootings, terrorism, and school shootings are difficult to study using quantitative data. The development of rigorous methodologies to manage these challenges is important because these crimes are often newsworthy and initiate national policy decisions about how to respond, prevent, reduce, and manage these social problems. It is crucial that policy decisions be grounded upon solid empirical data, and that scholars and policymakers are made aware of the strengths and weaknesses in publicly sourced data.

Our most important finding is that these shootings encompass various disparate acts that occur on school grounds. Accordingly, this highlights that a one-size-fits-all approach to school violence prevention will likely be insufficient to address this violence. As shown here, there is a need to disaggregate school shootings to respond to the varied threats, harms, types, and locations of school shootings more effectively. Findings from this study can help develop more refined and targeted policy interventions, while also giving schools, communities, and the wider society more accurate information about the nature of serious school gun violence.

# ENDNOTES

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- 13 We are currently updating TASSS to include cases that occurred up until December 31, 2020.
- 14 After-action reports usually describe what occurred, analyze the responses and actions of participants, and often offer suggestions to improve public and private responses and policies to enhance safety. Watch-groups/advocacy groups often compile reports about relevant incidents and offenders.
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## **ABOUT THE REGIONAL GUN VIOLENCE RESEARCH CONSORTIUM**

The Regional Gun Violence Research Consortium is dedicated to the reduction of gun violence involving firearms through interdisciplinary research and analysis.

With the combined expertise of public health, social welfare, public policy, and criminal justice experts, the consortium informs the public and provides evidence-based, data-driven policy recommendations to disrupt the cycle of firearm-involved mass shootings, homicides, suicides, and accidents.

The consortium is part of States for Gun Safety, a multistate coalition that aims to reduce gun violence. Previous analyses include:

- + Creating a multistate database to supplement the federal National Instant Criminal Background Check System.
- + Tracking and intercepting guns that are used in crimes as well as guns transported across state borders.
- + Informing policymakers and the public through interdisciplinary research and analysis.

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