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Public Mass Shootings: Database Amasses Details of a Half Century of U.S. Mass Shootings with Firearms, Generating Psychosocial Histories

A troubled past and leaked plans are common to those who take part in mass shootings. Most use handguns, NIJ-supported research shows.

February 3, 2022

Persons who committed public mass shootings in the U.S. over the last half century were commonly troubled by personal trauma before their shooting incidents, nearly always in a state of crisis at the time, and, in most cases, engaged in leaking their plans before opening fire. Most were insiders of a targeted institution, such as an employee or student. Except for young school shooters who stole the guns from family members, most used legally obtained handguns in those shootings.

Those are prominent traits of persons who have engaged in public mass shootings – that is, a shooting that kills four or more people^[1] – collected in a comprehensive new database of identified U.S. mass shootings from 1966 to 2019. The data on 172 mass public shooters cover more than 150 psychosocial history variables, such as those individuals' mental health history, past trauma, interest in past shootings, and situational triggers.

With support from the National Institute of Justice, The Violence Project database has drawn data exclusively from open sources such as social media sites and online

newspapers. The aim is to build a broader understanding on the part of the public, the justice system, and the research community of who mass shooters are and what motivates their decision to discharge firearms at multiple people.

As part of the project, researchers also separately interviewed persons in prison who had engaged in mass shootings, in part to look for shared traits.

A Troubling Upward Trend

The research examined an era of marked increase in the number and deadly effect of mass shootings in the United States. To summarize that trend:

- The project spanned mass shootings over more than 50 years, yet 20% of the 167 mass shootings in that period occurred in the last five years of the study period.
- More than half occurred after 2000, of which 33% occurred after 2010.
- The years with the highest number of mass shootings were 2018, with nine, and 1999 and 2017, each with seven.
- Sixteen of the 20 deadliest mass shootings in modern history (i.e., from 1966 through 2019), occurred between 1999 and 2019, and eight of those sixteen occurred between 2014 and 2019.
- The death toll has risen sharply, particularly in the last decade. In the 1970s, mass shootings claimed an average of eight lives per year. From 2010 to 2019, the end of the study period, the average was up to 51 deaths per year.

The Study Design

The research adopted a mixed method approach combining objective, or readily quantified, data, to populate the database and the interviews of the small sample of persons in prison who had committed mass shootings. The database, as well as a detailed study methodology and research codebook, are available at www.theviolenceproject.org. Mass shooting cases were identified using several sources, including all existing mass shooting databases, with close examination of each case. Researchers also reviewed source lists of mass shootings from new outlets. Shooters' first-person accounts were scrutinized, and secondary sources, such as documentary films, biographies, newspaper archives, for example, were mined for a variety of relevant mass shooting data points. In all, the research team coded more than 160 variables for database inclusion. Examples of variable ranges

include demographics, family background, breakups, and employment trouble, telling others about one's plans to kill ahead of time (known as "leakage"), and firearms use, including whether weapons were purchased legally or illegally, or stolen. The database includes tabs on more than 370 firearms used in mass shootings and 1,239 people who lost their lives to those weapons, plus 2,020 of those injured.

This project followed a research methodology that has proven effective in terrorism studies, which also are rare events that can result in mass casualties.

Other Key Findings and Applicability [↗](#)

Trauma, Suicidality, and Crisis [↗](#)

Suicidality was found to be a strong predictor of perpetration of mass shootings. Of all mass shooters in the The Violence Project database, 30% were suicidal prior to the shooting. An additional 39% were suicidal during the shooting. Those numbers were significantly higher for younger shooters, with K-12 students who engaged in mass shootings found to be suicidal in 92% of instances and college/university students who engaged in mass shooting suicidal 100% of the time.

In terms of past trauma, 31% of persons who perpetrated mass shootings were found to have experiences of severe childhood trauma, and over 80% were in crisis.

Trauma was a common element of the backgrounds of those committing mass shooting, both in the database and the qualitative studies. Early intervention through school-based services may be a key component of early prevention.

Crisis / Mental Illness [↗](#)

In public discourse, mass shootings are often blamed on mental illness. But the research indicates the role of mental illness in mass shootings is complicated, not clear-cut. Mental health issues were common among those who engaged in mass shootings, with psychosis playing a minor role in nearly one third of the cases, but a primary role 10% of the time.

The data indicate, however, that nearly all persons who engage in mass shootings were in state of crisis in the days

Addressing Trauma [↗](#)

NIJ's CrimeSolutions has rated programs as effective or promising for reducing the impact of trauma on youth. See:

or weeks preceding the shooting.

Warning Signs — Leakage [↗](#)

Nearly half of individuals who engaged in mass shootings (48%) leaked their plans in advance to others, including family members, friends, and colleagues, as well as strangers and law enforcement officers. Legacy tokens, such as manifestos, were left behind by 23.4% of those who committed mass shootings. About 70% of individuals who perpetrated mass shooting knew at least some of their victims. In particular, K-12 school and workplace shooters were “insiders” – current or former students and employees. That finding has implications for physical security measures and the use of active shooter drills.

The fact that leakage is a common occurrence with mass shootings provides an opportunity for intervention. Anonymous reporting systems may increase the likelihood of leakage and is an important area for more research. Threat assessment teams that intervene with a holistic, collaborative approach to intervention are promising.

Firearms [↗](#)

Notably, most individuals who engaged in mass shootings used handguns (77.2%), and 25.1% used assault rifles in the commission of their crimes. Of the known mass shooting cases (32.5% of cases could not be confirmed), 77% of those who engaged in mass shootings purchased at least some of their guns legally, while illegal purchases were made by 13% of those committing mass shootings. In cases involving K-12 school shootings, over 80% of individuals who engaged in shootings stole guns from family members.

The findings support safe storage of guns. Yet, the researchers noted that there are no federal laws requiring safe storage of guns, and no federal standards for firearm locks. The data also support “red flag” laws permitting law enforcement or family members to petition a state court to order temporary removal of a firearm from a person who presents a danger.

Motivation Over Time [↗](#)

Since the 1970s, the only statistically significant change in motivations for mass shootings

[Cognitive Behavioral Intervention for Trauma in Schools \(CBITS\)](#)

[Bounce Back](#)

[Enhancing Resiliency Amongst Student Experiencing Stress \(ERASE-Stress\) in Israel](#)

is the decrease in shootings motivated by employment issues.

Script [↗](#)

The data show that many individuals who engage in mass shootings study past mass shooters – one in five (21.6%) studied other mass shooters, and many are radicalized online. The researchers recommended media literacy education as a means of helping people critically consume information and counter extremist propaganda that facilitates violence.

Mass Shooting Demographics [↗](#)

Of the 172 individuals who engaged in public mass shootings covered in the database, 97.7% were male. Ages ranged from 11 to 70, with a mean age of 34.1. Those shooting were 52.3% White, 20.9% Black, 8.1% Latino, 6.4% Asian, 4.2% Middle Eastern, and 1.8% Native American.

Most individuals who perpetrated mass shootings had a prior criminal record (64.5%) and a history of violence (62.8%), including domestic violence (27.9%). And 28.5% had a military background. Most died on the scene of the public mass shooting, with 38.4% dying by their own hand and 20.3% killed by law enforcement officers.

Locations of Mass Shootings [↗](#)

Locations of public mass shootings, by percentage of all occurrences in the database, were:

Location	Percent
Workplace	30.8
Retail establishment	16.9
Bar or restaurant	13.4
Residential location	8.1
Outdoors	8.1

K-12 school	7.6
Place of worship	6.4
College or university	5.2
Government or place of civic importance	3.5

Interviews [↗](#)

The research team cautioned that the qualitative data, from five interviews, did not lend themselves to generalization, because each individual's story is unique. There was no single profile of a person who engaged in a mass shooting, but the interviewed mass shooters shared the following traits:

- Early childhood trauma and exposure to violence.
- An identifiable grievance or crisis point.
- Validation of beliefs – finding inspiration in past shootings by others.
- The means to carry out an attack.

Other Limitations [↗](#)

The database used open source data, leaving room for bias, the researchers noted, because the source data were originally gathered for different purposes. Media outlets have their own biases, in terms of coverage of different mass shootings. Generally, the report noted, certain categories of mass shootings tended to attract the most coverage. They include bias in favor of coverage of mass shootings related to:

- K-12 schools
- Military bases
- Higher body counts or younger victims
- Assault rifles
- Clustered with other shootings

The researchers cautioned readers to interpret mass shooting trends over time with

caution, in light of the fact that mass shootings are extreme and rare events.

About This Article

The research described in this article was funded by NIJ award [2018-75-CX-0023](#), awarded to Hamline University. This article is based on the grantee report “[A Multi-Level, Multi-Method Investigation of the Psycho-Social Life Histories of Mass Shooters](#),” September 2021, by project’s Principal Investigator, Jillian Peterson. The Co-Principal Investigator was James Densley.

Notes

[\[note 1\]](#) The Congressional Research Service has defined a public mass shooting as a “a multiple homicide incident in which four or more victims are murdered with firearms”, not including the shooter(s), “within one event, and [where] at least some of the murders occurred in a public location or locations in close geographical proximity (e.g., a workplace, school, restaurant, or other public settings), and the murders are not attributable to any other underlying criminal activity or commonplace circumstance (armed robbery, criminal competition, insurance fraud, argument, or romantic triangle).”

Cite this Article

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