



MN House Education Finance Committee

Dr. James Densley

Dr. Jillian Peterson

The Violence Prevention Project Research Center, Hamline University

Dedicated to reducing violence through research that is accessible and actionable

Committed to generating knowledge to enlighten and empower the public, guide practitioners, and drive informed policy decisions.



**VIOLENCE
PREVENTION
PROJECT**

RESEARCH CENTER

HAMLIN UNIVERSITY

"If you ever wondered how we can stop mass shootings, this is the book for you."

—NICOLE HOCKLEY, co-founder and managing director, Sandy Hook Promise

THE VIOLENCE PROJECT



HOW TO STOP A MASS
SHOOTING EPIDEMIC

JILLIAN PETERSON, PHD
& JAMES DENSLEY, PHD



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K-12 School Homicide Incidents

Access the full [K-12 Incidents dataset](#) and [K-12 Victims dataset](#)

Select a measure to update the trend below

Incidents
372

Victims Killed
493

Victims Killed & Injured
780

Select filters to narrow your focus:

Year 2000 to 2024

Perpetrator Age 7 to 66

Victims Killed 1 to 26

Victims Injured 0 to 17

K-12 School Shootings by Level

Visualizing where school shootings occur across elementary, middle, and high schools.

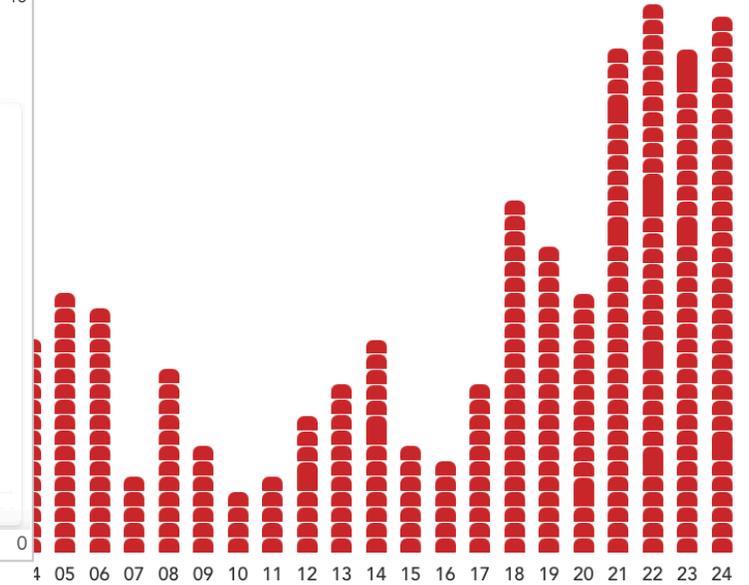
232 High School
85 Elementary
39 Middle School

High School accounts for 62% of K-12 school shootings. Click the legend below to filter by school level.



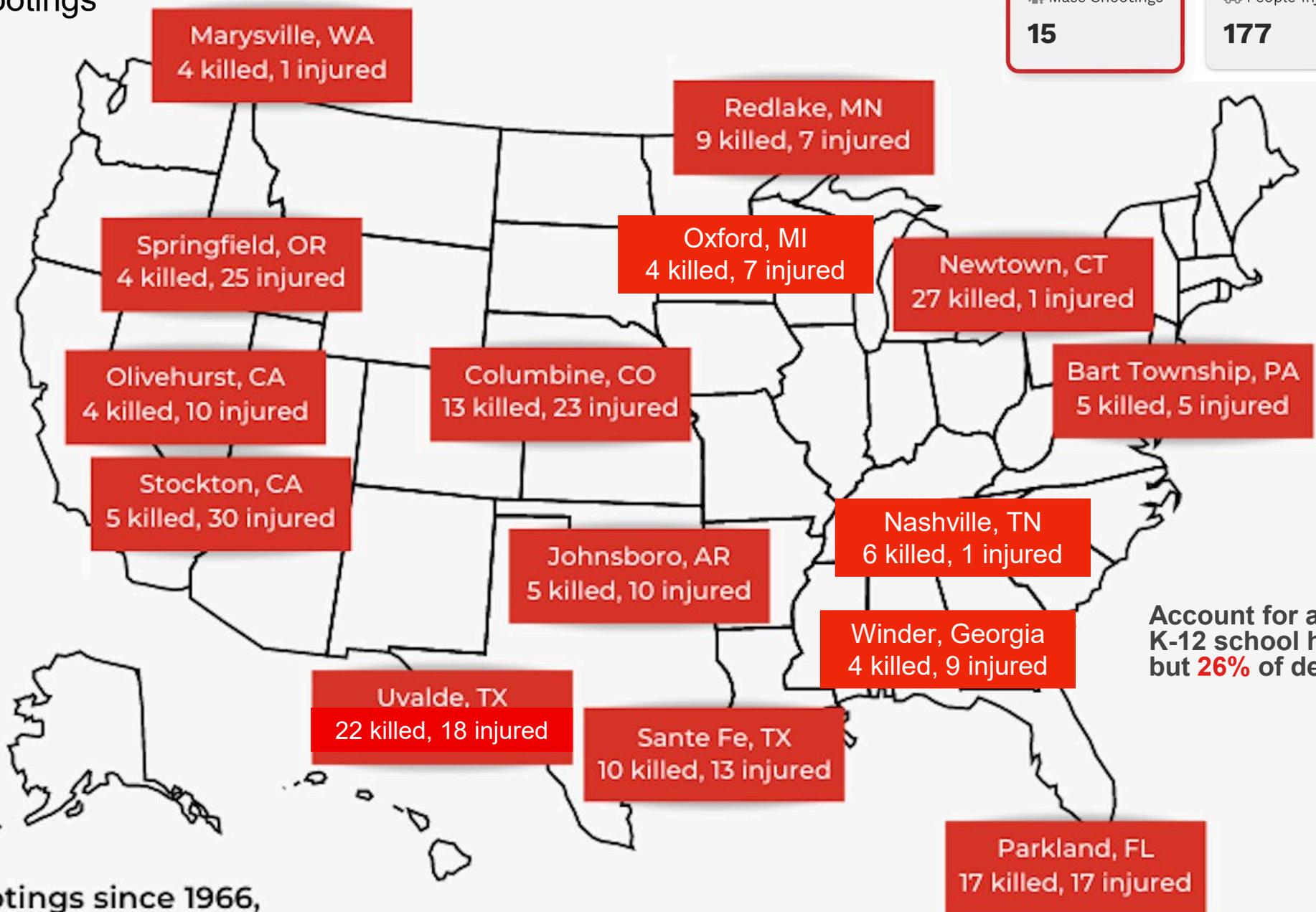
High School (232) Elementary (85) Middle School (39) Unknown (1) Other (10)

40



Mass School Shootings (4 or more killed)

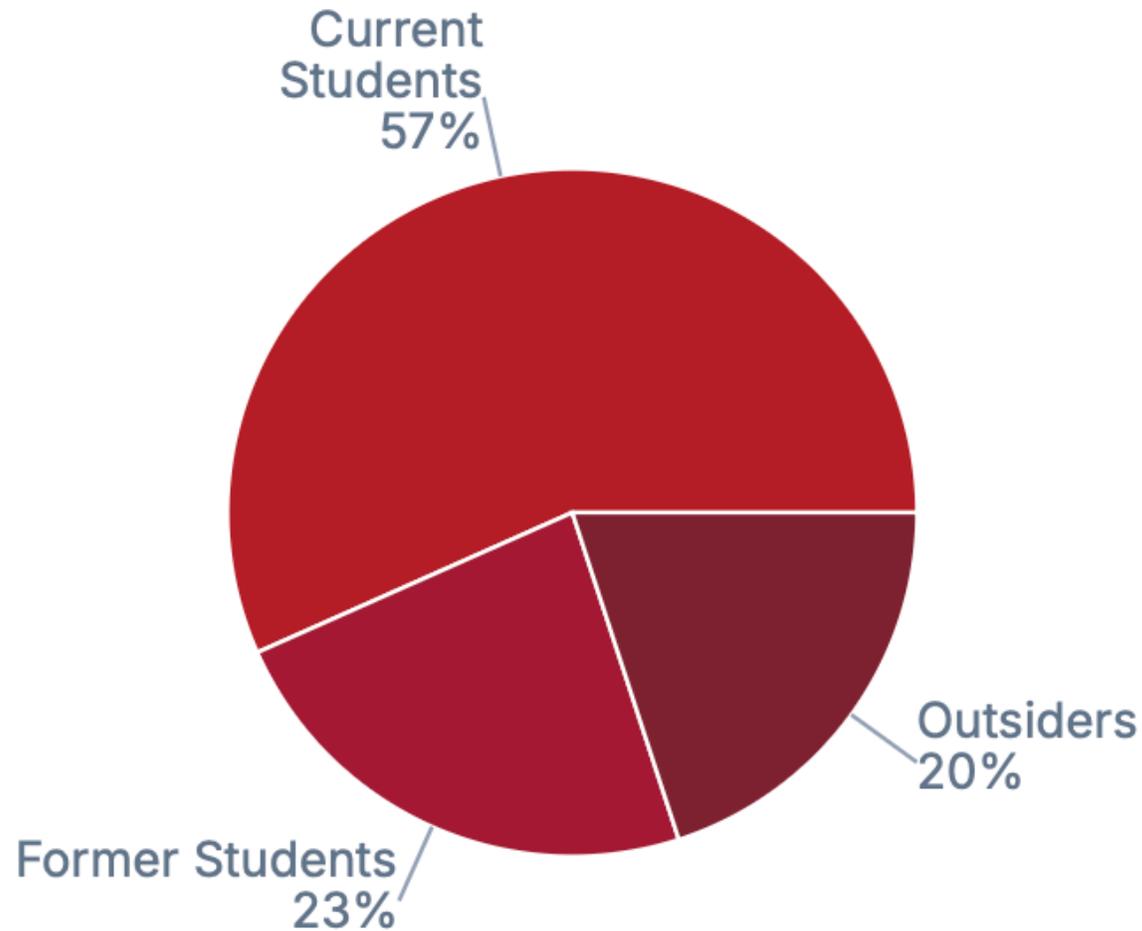
 Mass Shootings	 People Injured	 People Killed
15	177	138



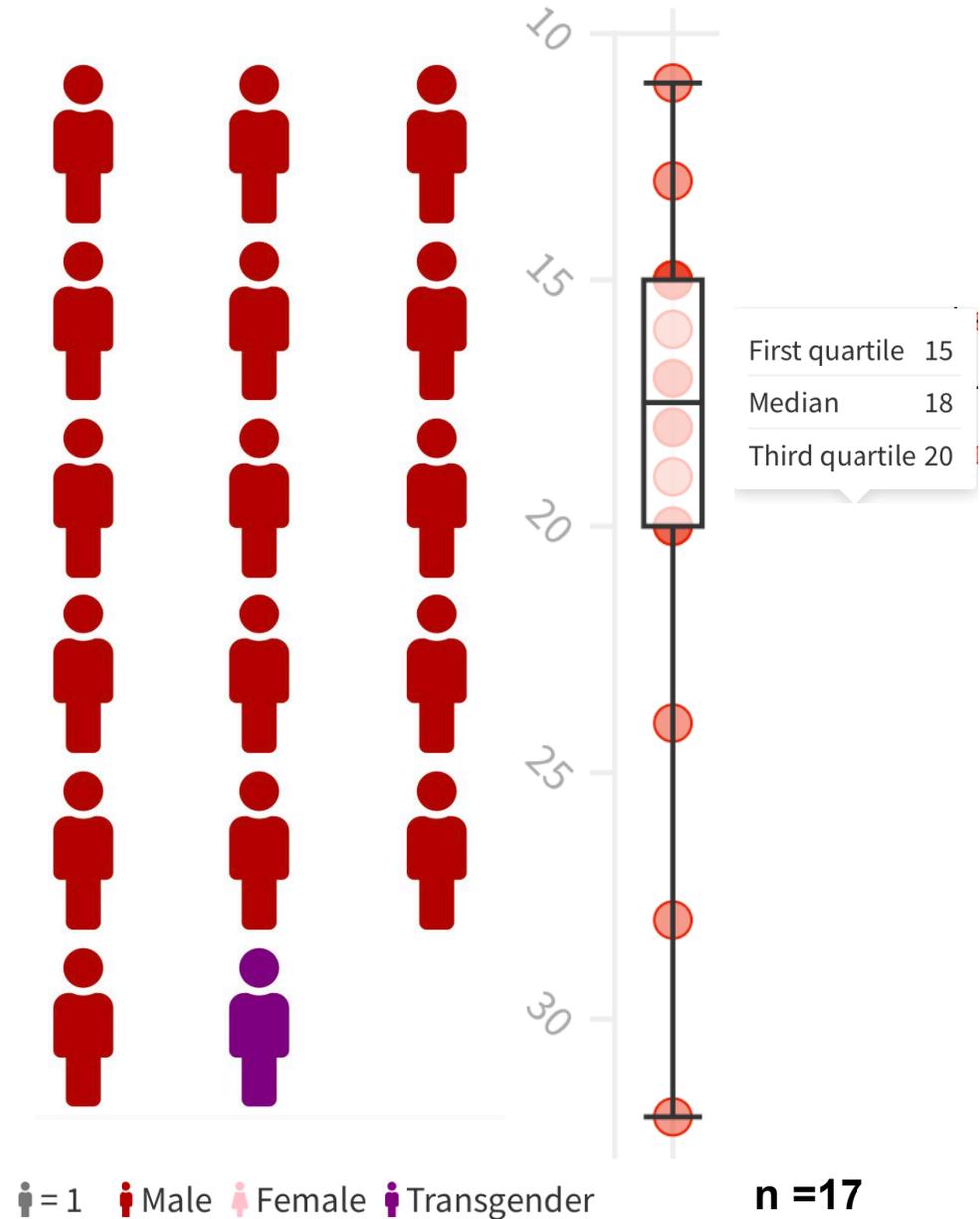
Account for about **3%** of all K-12 school homicide cases, but **26%** of deaths, 2000–24

Shootings since 1966,
from The Violence Project Database

1. Shooters are “insiders”



Gender & Age of K-12 School Mass Shooters



Minnesota districts work to take the trauma out of school shooter drills

A gentler training protocol is now the blueprint for a growing number of districts.

Opinion | School shutdowns are only a Band-Aid solution to gun violence

By Jillian Peterson and James Densley

THE CONVERSATION

Academic rigor, journalistic flair

School shootings dropped in 2025 - but schools are still focusing too much on safety technology instead of prevention

Published: December 16, 2025 8:28pm EST



Research Letter | Public Health

Presence of Armed School Officials and Fatal and Nonfatal Gunshot Injuries During Mass School Shootings, United States, 1980-2019

Jillian Peterson, PhD, James Densley, DPHi, Gina Erickson, PhD

Introduction

Author affiliations and article information are listed at the end of this article.

After deadly school shootings at Columbine, Sandy Hook, and Parkland, many states mandated School Resource Officers or provided funding for districts to hire them.¹ Lawmakers also considered arming teachers. Florida now requires a law enforcement officer or trained school guardian in every school.²

By examining every recorded incident where one or more people were intentionally shot in a school building during the school day, or where a perpetrator came to school heavily armed with the intent of firing indiscriminately, we examine the association between the presence of an armed officer on scene and the severity of shootings in K-12 (kindergarten through 12th grade) schools.

Table 1. Descriptive and Missing Case Information for All Variables

Variable	Cases, No. (%)	Persons injured, mean (SD), No.	Persons killed, mean (SD), No.	Missing cases, No. (% imputed)
Persons killed per case, mean (SD) [range], No.	NA	NA	1.34 (5.25) [0-27]	NA
Persons injured per case, mean (SD) [range], No.	NA	3.15 (5.06) [0-32]	NA	NA
Weapons per case, mean (SD) [range], No.	1.63 (1.22) [1-8]	NA	NA	3 (2.24)
Armed officer	29 (23.58)	3.86 (5.45)	2.07 (4.16)	11 (8.21)
Lockdown drills	53 (44.92)	2.91 (4.75)	1.77 (4.63)	16 (11.94)
Targeted	57 (47.11)	2.74 (3.54)	1.11 (1.73)	13 (9.70)
No. of shooters				
One	124 (92.54)	2.94 (4.93)	1.29 (3.18)	NA
More than one	10 (7.46)	5.80 (6.12)	2.00 (4.16)	NA
Known weapon type				
Any AR or SMC	14 (10.45)	7.79 (9.69)	5.36 (8.05)	NA
Any handgun	92 (68.66)	3.18 (3.18)	1.45 (3.24)	NA
Any shotgun	29 (21.64)	3.72 (5.20)	1.79 (3.37)	NA
Any rifle	23 (17.16)	3.74 (5.56)	0.87 (1.49)	NA
Region				
South	39 (29.10)	3.36 (4.45)	1.41 (3.17)	NA
Midwest	35 (26.12)	1.60 (2.89)	0.83 (2.69)	NA
Northeast	19 (14.18)	1.37 (1.54)	2.05 (6.16)	NA
West	41 (30.60)	5.10 (7.41)	1.39 (2.38)	NA
Urbanicity				
Urban	34 (25.37)	2.82 (4.46)	0.56 (1.05)	NA
Suburban	58 (43.28)	3.60 (5.73)	1.67 (4.46)	NA
Rural	42 (31.34)	2.79 (4.57)	1.52 (2.24)	NA
School type				
Elementary	17 (12.69)	5.53 (8.44)	2.94 (6.44)	NA
High school	81 (60.45)	3.15 (4.89)	1.21 (2.67)	NA
Middle or combined	36 (26.87)	2.03 (2.86)	0.89 (1.86)	NA
Institution type				
Public	122 (91.04)	3.28 (5.24)	1.42 (3.37)	NA
Private/other	12 (8.96)	1.83 (2.44)	0.58 (1.44)	NA

Abbreviations: AR, assault rifle; NA, not applicable; SMC, submachine gun.

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JAMA Network Open. 2021;4(2):e2037394. doi:10.1001/jamanetworkopen.2020.37394

February 16, 2021 | 14

2. Shooters are in crisis



Over 80%

of mass shooters show signs like depression, mood swings, agitation, isolation, or trouble with daily tasks before they attack.

After a bad breakup in February 2023, Card became delusional, thought people were calling him a pedophile, stopped taking medication, and lost weight

Robert Card

After graduating high school in 2018, he withdrew from social activities

Ahmad Al Aliwi Alissa

Bing had been paranoid about the government and social media since at least 2016

Andre Bing

He became isolated from friends.

James Pough

He believed that the administrators of the college he attended were conspiring against him and having him bugged and followed

One Goh

He fired guns into the air to scare officials off his property and was verbally abusive and threatening to them

Carl Drega

He had been a reclusive, paranoid, and abusive person for as long as his neighbors could remember

William Cruse

He had been paranoid for 14 years - he used to tape his employees' phone calls because he thought they were talking about him

Mark Barton

3. Shooting is a final act

“So, why did you commit this crime?” the head parole commissioner asked.

“Because I wanted to die,” she said. “I was trying to commit suicide.”

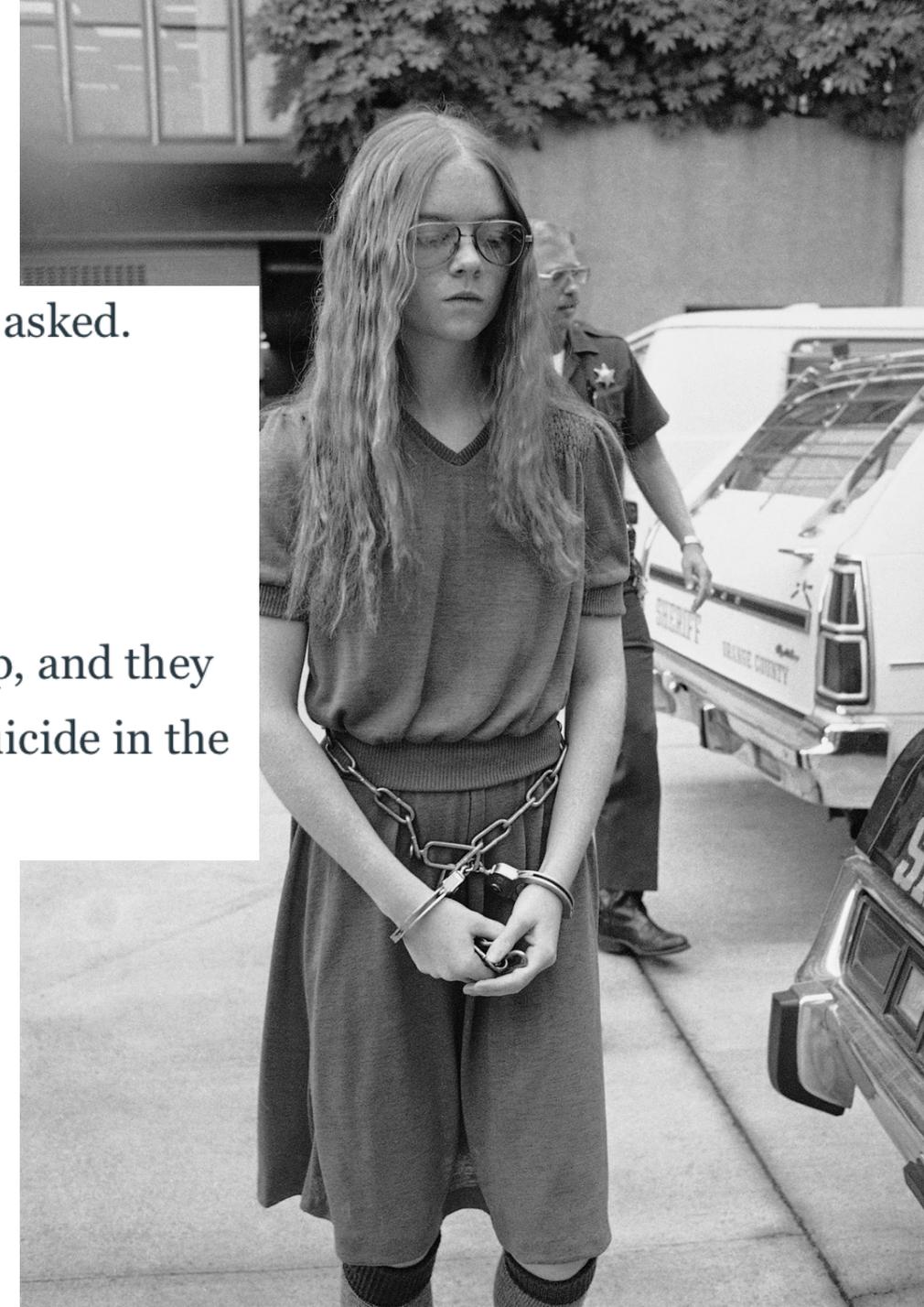
“Why pick the school across the street?” the commissioner asked.

“Because I knew that if I fired on the school the police would show up, and they would shoot me and kill me,” she said. “And every time I had tried suicide in the previous year I had screwed it up.”

The Grover Cleveland Elementary School shooting
San Diego, CA

January 29, 1979

The principal and a custodian were killed
8 children and a police officer were injured



How Columbine became a blueprint for school shooters

Jillian Peterson & James Densley April 17, 2019

4. Shooters study others

Modern radicalization = **social, iterative, addictive**



Romanticization

Finding perpetrators "fascinating" or "attractive"



Idolization

Admiring their power, manifestos, or kill counts



Identification

"I'll do it too" — subcultures reward imitation with same clothes, slogans, symbols, weapons

Watch for "wannabe" talk: mimicry, fascination with shooters. Loneliness, humiliation, loss of purpose are root causes

"Edgy" or **gore** content is a pipeline: "Can you handle this?"



5. Shooters leak plans

Check for updates

Article

SM+S
social media + society

Social Media + Society
January-March 2023, 1–15
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DOI: 10.1177/20565001221165101
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How Mass Public Shooters Use Social Media: Exploring Themes and Future Directions

Jillian Peterson¹, James Densley², Jamie Spaulding¹, and Stasia Higgins¹

Abstract
This mixed-methods study examines social media use among public mass shooters in the United States as an extension of a comprehensive database of 170 mass shooters from 1966 to 2021. Here, we report findings from a systematic content analysis of public data and detailed timelines that were constructed for 44 mass shooters' social media habits and changes to those habits during the period of time leading up to their shooting. The paper also presents as a case study, a sentiment analysis, and term-linkage network for one perpetrator's total 3,000 tweets. Several themes were found in the data—there were shooters who changed their posting habits and in some cases, stopped using social media entirely in the lead up to their crime; shooters who used hate speech and were “radicalized” to violence online; shooters with a demonstrable interest in violence, who referenced past mass shooters in their own communications; shooters who exhibited signs of mental illness and suicidality; shooters who were already known to authorities; and shooters who like those described above, actively posted while shooting, presumably to boost their own celebrity status. The findings from this study provide insight into commonalities among mass shooters in terms of their social media usage, which could lead to new pathways for prevention and intervention.

Keywords
mass shooting violence, social media, mental health

During Friday Prayer on 15 March 2019, two consecutive mass shootings occurred at mosques in Christchurch, New Zealand. A gunman killed 51 people and injured 40 more in an attack that he live-streamed on Facebook from a head-mounted camera. In the highly disturbing video, the gunman drives to the first mosque, walks inside, and shoots multiple people before leaving the scene in his car and narrating his journey to the next mosque. The video was taken down within 20 min by Facebook, but anything posted online leaves a digital fingerprint, so versions of it stayed live (Peterson & Densley, 2021b). Within 24 hr, Facebook banned 1.5 million versions of the video footage—1.2 million of which the company stopped from being uploaded at all (Peterson & Densley, 2021b). However, one copy of the video lingered on its platform for 6 hr, and another on YouTube for 3 hr. The quick and seemingly unstoppable spread of this video typifies how social media has changed mass public shootings: they can be watched uncensored and go viral.

In addition to live streaming their attacks, mass shooters in recent years have posted online while perpetrating them. The perpetrator of the 2018 mass shooting at the Borderline Bar and Grill in Thousand Oaks, California, which killed 11, checked his phone and made two posts to social media during the incident (Ventura County Sheriff's Office, 2021). During the 2017 attacks at Pulse, a nightclub in Orlando, Florida, which killed 49, the shooter checked Facebook and Twitter to make sure his massacre was going viral (Peterson & Densley, 2021b). In addition, having already stabbed his two housemates and another man to death, the 2014 shooter in Isla Vista near UC Santa Barbara, filmed himself from behind the wheel of his BMW and uploaded to YouTube his intent to exact “retribution” on a world he believed had wronged him (Garvey, 2014). The video spawned copycats and in parts of the internet, the shooter is worshipped as a hero.

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²Metropolitan State University, USA

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Original Investigation | Public Health

Communication of Intent to Do Harm Preceding Mass Public Shootings in the United States, 1966 to 2019

Jillian Peterson, PhD, Gina Erickson, PhD, Kyle Knapp, BA, James Densley, PhD

Abstract

IMPORTANCE Understanding the motivation of a mass shooter's intent to do harm can help practitioners and policy makers develop more effective intervention strategies.

OBJECTIVE To examine the prevalence of communication of intent to do harm, known as leakage, in a sample of 170 mass public shooters from 1966 to 2019; the characteristics of perpetrators who do and do not leak their plans; and whether leakage is a form of fame-seeking behavior or a cry for help among individuals who are in crisis or suicidal.

DESIGN, SETTING, AND PARTICIPANTS This cross-sectional study included perpetrators who killed 4 or more people in a public space from 1996 to 2019 and were included in a comprehensive database of US mass shootings. That database was built from August 2017 to December 2019, and analysis took place from January to May 2021.

MAIN OUTCOMES AND MEASURES Leakage was identified and coded using publicly available records. Any communication to a third party of an intent to do harm prior to the shooting was coded as leakage. Logistic regression models were used to examine the risk factors associated with leakage. Models estimating leakage were examined to assess the 2 hypothesized pathways to leakage (the cry-for-help model and the fame-seeking model).

RESULTS The 170 participants in this sample included 166 (97.7%) male perpetrators and 3 (2.3%) female perpetrators, with a mean (SD) age of 34 (12) years. Overall, 161 participants had known race and ethnicity: 11 (6.8%) Asian individuals, 35 (21.7%) Black individuals, 14 (8.7%) Latinx individuals, 7 (4.4%) Middle Eastern individuals, 3 (1.9%) Native American individuals, 89 (55.3%) White individuals, and 2 (1.2%) individuals with other race and ethnicity. Overall, 79 mass shooters (46.5%) leaked their plans. Of perpetrators who leaked their plans, 35 (44.3%) leaked specific plans about a mass shooting, and 44 (55.1%) leaked nonspecific plans about generalized violence. The study findings indicate that leakage was associated with receiving counseling (odds ratio, 7.0; 95% CI, 2.2–23.8) and being in crisis (odds ratio, 2.3; 95% CI, 1.1–4.8).

Key Points

Question What factors are associated with a mass shooting perpetrator's decision to communicate their intent to do harm?

Findings This cross-sectional study of 170 perpetrators found that nearly half leaked their plans, with 44.3% of them leaking specific plans about a mass shooting. Leakage was associated with receiving counseling and suicidality, which suggests it may be best characterized as a cry for help from perpetrators prior to their act.

Meaning These findings suggest that leakage is a critical moment for mental health intervention to prevent gun violence.

Author affiliations and article information are listed at the end of this article.

YouTube

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Reply to comment

nikolas cruz 1 hour ago
Im going to be a professional school shooter

Like Dislike

Add a reply...
+nikolas cruz

#7 ON TRENDING
The FBI came to visit me today about Nikolas Cruz

BREAKING NEWS
MINNEAPOLIS MASS SHOOTING
KARE 11

NEW INFORMATION ABOUT SHOOTER

Chapter 5 - Test REVIEW #1
November 30th 2021
8:59 AM

Using Congruent Triangles

Given: $\overline{MQ} \cong \overline{NQ}$
 $\overline{MQ} \perp \overline{NT}$
Prove: $\overline{MN} \cong \overline{QT}$

1. $\overline{MQ} \cong \overline{NQ}$
2. $\angle 1 \cong \angle 2$
3. $\overline{MT} \cong \overline{NT}$
4. $\triangle MNT \cong \triangle QNT$

Reasons:
o Given
o CPCTC
o SAS
o Reflexive Property
o Reflexive Property
o Def'n of Bisector
o Alt. Int. \angle s Thm.

5.3, 5.5-5.6: Congruent Triangles
k any given information on the diagram. Are the triangles congruent? Which theorem proves this?
Write congruent statements for the bottom row.

$\triangle PQR \cong \triangle PQR$ $\triangle PQR \cong \triangle PQR$ $\triangle ABC \cong \triangle ABC$ $\triangle WXY \cong \triangle WXY$

OHS Rocks!
I love my life so much!!!
Were all friends here!

Meet the St. Paul-based team trying to get ahead of school shootings and workplace violence

In the 20 years since Red Lake High School violence, more is understood about warning signs.



Strategy for Targeted Violence Prevention for the State of Minnesota

Minnesota Bureau of Criminal Apprehension
1430 Maryland Ave. East
St. Paul, MN 55106
651-793-7000
<https://dps.mn.gov/divisions/bca>

A St. Paul Police officer works with agents from the Minnesota Department of Public Safety's Bureau of Criminal Apprehension in the Fusion room at BCA headquarters in St. Paul on March 19, 2025. (John Autey / Pioneer Press)



An Exploration of K–12 School Shooting Threats in the United States

Jillian Peterson¹, James Densley², David Riedman³,
Jamie Spaulding¹, and Hannah Malicky⁴

¹ Department of Criminal Justice and Forensic Science, Hamline University

² Department of Criminal Justice, Metropolitan State University

³ Department of Criminal Justice, University of Central Florida

⁴ Department of Peace and Conflict Studies, Grinnell College

This exploratory study examines approximately 1,000 shooting threats made at K–12 schools gathered from publicly available news reports over a 4-year academic period, including prepandemic, pandemic, and postpandemic data. The content analysis finds violent threats increased dramatically in 2021–2022. A majority of individuals who make school shooting threats are male students at large public high schools, which is consistent with those who perpetrate mass shootings at K–12 schools. However, those who threaten shootings are a more diverse population than perpetrators themselves in that they are a wider variety of ages and nearly one fifth are female. Text analysis identified words indicating the specificity of a threat and showed threats tended to be both negative and angry. In 40% of cases, it was unclear if the threat was real or a joke/hoax, yet the most common outcome was to arrest the individual making the threat and charge them with a felony. This study concludes with a call for research to better understand who makes school shooting threats and the challenges to this line of research.

Public Significance Statement

The results of this exploratory examination of 1,000 school shooting threats over a 4-year period show that threats are increasing. Those who threatened school shootings were a more diverse group than perpetrators of school shootings; and in 40% of cases, it is unclear if the threat is real or a joke. Future research is needed to understand and design appropriate intervention strategies for various forms of threats.

Keywords: school violence, school shooting, mass shooting, threat assessment, gun violence

Supplemental materials: <https://doi.org/10.1037/tam0000215.supp>

Threats of school shootings are a serious concern for schools and communities, yet it is currently unknown the extent to which they are happening, where they are happening most frequently, who is making them, the nature of

the threats, and how schools are responding to them. This exploratory study is the first step to understanding the nature and extent of school shooting threats in the United States in an effort to identify trends and patterns, inform future research, and help to promote school safety and prevent violence from occurring. The present study examines approximately 1,000 K–12 school shooting threats gathered from publicly available news reports over a 4-year period. It explores the content of the threats using text-based sentiment analysis and public reporting on threats to answer the following research

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The authors have no known conflicts of interest to disclose.
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C.A.R.E. TEAM

Collaborate. Assess. Respond. Evaluate.

Evidence-Based Response Options Beyond “**Threat**” Assessment



Individual & Group Counseling



Mentoring Programs



Peer Support Networks



Restorative Mediation



Basic Needs Support



Safe Storage of Firearms

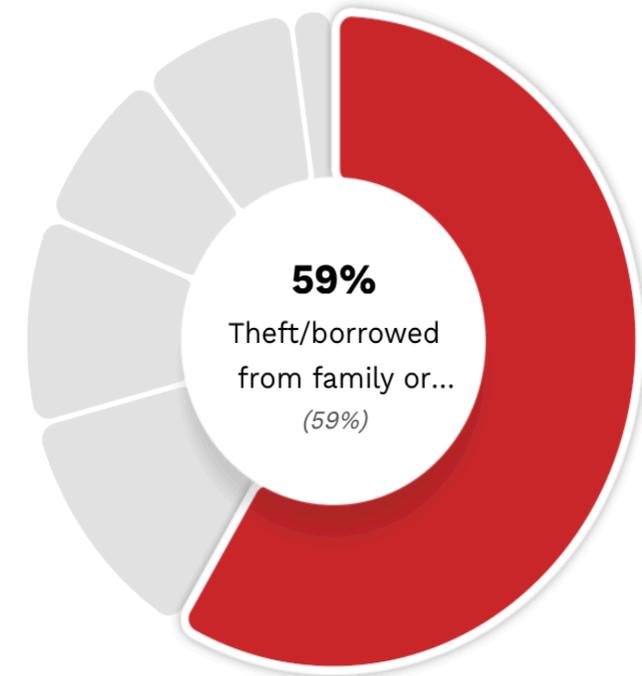


Social Services Connection



Community Partnerships

6. Get guns from adults



How Acquired by %Firearms %

● Theft/borrowed from family or friend	59%
● Straw purchase	12%
● Illegal street sale	10%
● Federal Firearms Licensed dealer	8%
● Gifted	8%
● System failure (background check missed something, records ...	2%

Implications for prevention

Insiders: Think beyond doors and drills

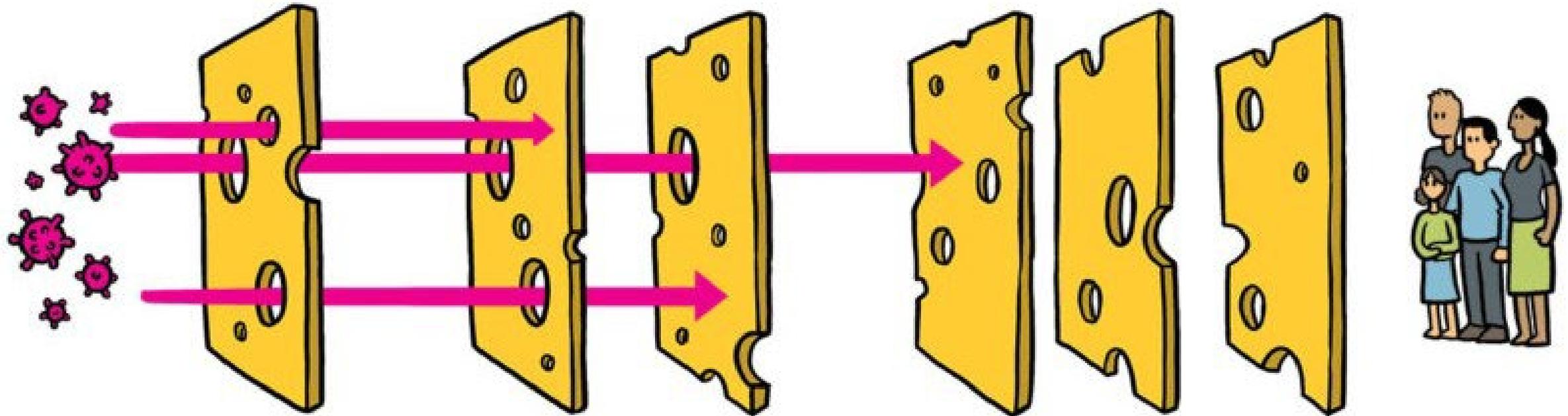
Crisis: Know the signs, crisis intervention

Final act: Suicide prevention, not punishment

Study others: Child protection, focus on media and social media

Leak plans: BTAM, reporting systems, relationships

Firearms: Secure storage, ERPOs



Understanding Homicide in the Twin Cities

JOURNAL OF CRIME AND JUSTICE
<https://doi.org/10.1080/0735648X.2024.2426502>



OPEN ACCESS

Murder in a time of crisis: a qualitative exploration of the 2020 homicide spike through offender interviews

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ABSTRACT

This study investigates how the COVID-19 pandemic and the civil unrest following George Floyd's murder influenced the 2020 homicide surge, focusing on individuals already at high risk for violence. Based on life history interviews with 18 people convicted of homicide in Minnesota, the research explores how the disruptions of 2020 intensified pre-existing vulnerabilities, accelerating pathways to lethal violence. Participants reported that the breakdown of social order, loss of routine, and economic instability created conditions that rapidly escalated violence within their lives and communities. This qualitative analysis complements existing quantitative research by offering a detailed account of the micro-level experiences behind the homicide spike, revealing how large-scale societal disruptions can shape individual trajectories toward serious violence. Findings underscore the need for policies that address structural inequalities and ensure continuity of social supports and mental health services during periods of widespread upheaval to prevent future escalations in violence.

ARTICLE HISTORY

Received 18 September 2024
Accepted 3 November 2024

KEYWORDS

COVID-19; George Floyd; homicide

In 2020, the United States experienced an unprecedented 30% increase in homicides, the largest annual rise in over a century since records began (Gramlich 2021). Data from the Centers for Disease Control and Prevention (CDC) and the Federal Bureau of Investigation (FBI) show that the murder rate jumped from 6.0 per 100,000 people in 2019 to 7.8 in 2020, with firearms involved in 77% of cases (Gramlich 2021). This dramatic spike has sparked extensive debate and research into its causes (Regalado, Timmer, and Jawaid 2022).

Explanations for the surge include the widespread social and economic disruptions caused by the COVID-19 pandemic, including the closure of schools and essential community services, which increased stress and reduced access to support systems (Lopez and Rosenfeld 2021; Rosenfeld and Lopez 2020). Reduced proactive policing and eroding trust in law enforcement following the murder of George Floyd on 25 May 2020, also likely contributed (Kim 2023; Nix et al. 2024; White, Oroso, and Terpstra 2022). Moreover, studies have shown that record numbers of gun purchases (Schleimer et al. 2021) and heightened legal cynicism – whereby individuals lose trust in government institutions (Moule et al. 2022) – fueled rising violence.

While homicide rates generally exhibit slow, gradual changes over time (Rosenfeld 2024), the unprecedented surge in 2020 demands a deeper understanding of its underlying mechanisms (Lopez and Rosenfeld 2021). Existing research has focused primarily on macro-level trends in gun

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DEVIANANT BEHAVIOR
<https://doi.org/10.1080/01639625.2024.2443778>



OPEN ACCESS

Exploring the Overlap: Suicidal Thoughts and Homicidal Acts Among Incarcerated Offenders

Jillian K. Peterson^a and James A. Densley^b

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ABSTRACT

This study explores the intersection of suicidality and homicidality through psychosocial life-history interviews with 18 people convicted of murder or manslaughter incarcerated in Minnesota. During in-depth qualitative life-history interviews about their childhood, adolescence, and adulthood, the participants revealed significant adverse childhood experiences and mental health issues. A majority of them were on the suicide spectrum before committing homicide. Hopelessness and previous suicide attempts were prevalent, highlighting the complex interplay between suicidality and violent behavior. These findings underscore the need for comprehensive mental health support and early interventions to address ACEs, suggesting that integrated care could mitigate the risk factors for both suicide and homicide. This study contributes to understanding the nuanced relationship between these behaviors among perpetrators of homicide and emphasizes the importance of holistic approaches in prevention and policymaking.

ARTICLE HISTORY

Received 30 August 2024
Accepted 13 December 2024

The intersection of suicidal ideation and homicidal behavior is complex and multifaceted, necessitating a nuanced exploration to fully understand the underlying psychological, social, and situational dynamics. The present study delves into this intricate relationship by conducting in-depth qualitative life history interviews with incarcerated homicide offenders, shedding light on the often-overlooked link between prior trauma, mental illness, and suicidal tendencies leading up to their crimes. The concept that suicide and homicide may be two sides of the same coin (Bills 2017) serves as the cornerstone of our inquiry, providing a lens through which we examine the duality of inward and outward-directed aggression.

Understanding the overlap between suicide and homicide has long been a central issue in social science generally and violence research specifically. Durkheim's (1951) seminal work first noted the complex interplay between these forms of violence, observing, "Suicide sometimes coexists with homicide, sometimes they are mutually exclusive, sometimes they react under the same conditions in the same way, sometimes in opposite ways" (p. 355). Later, Henry and Short (1954) framed suicide and homicide as expressions of aggression directed inward or outward, respectively – a view echoed in Freudian psychoanalytic theory, which posits that suicide unconsciously internalizes aggression, while homicide externalizes it (Freud 2004; Palmer 1972). These frameworks emphasize the importance of exploring how suicidal ideation and attempts may precede homicidal behavior, providing a comprehensive understanding of violence as both an internal and external phenomenon.

Despite the robust theoretical groundwork, empirical studies have predominantly focused on aggregate-level analyses, examining the correlation between suicide and homicide rates across different regions or countries (Unnithan et al. 1994). These cross-sectional designs, while informative, often

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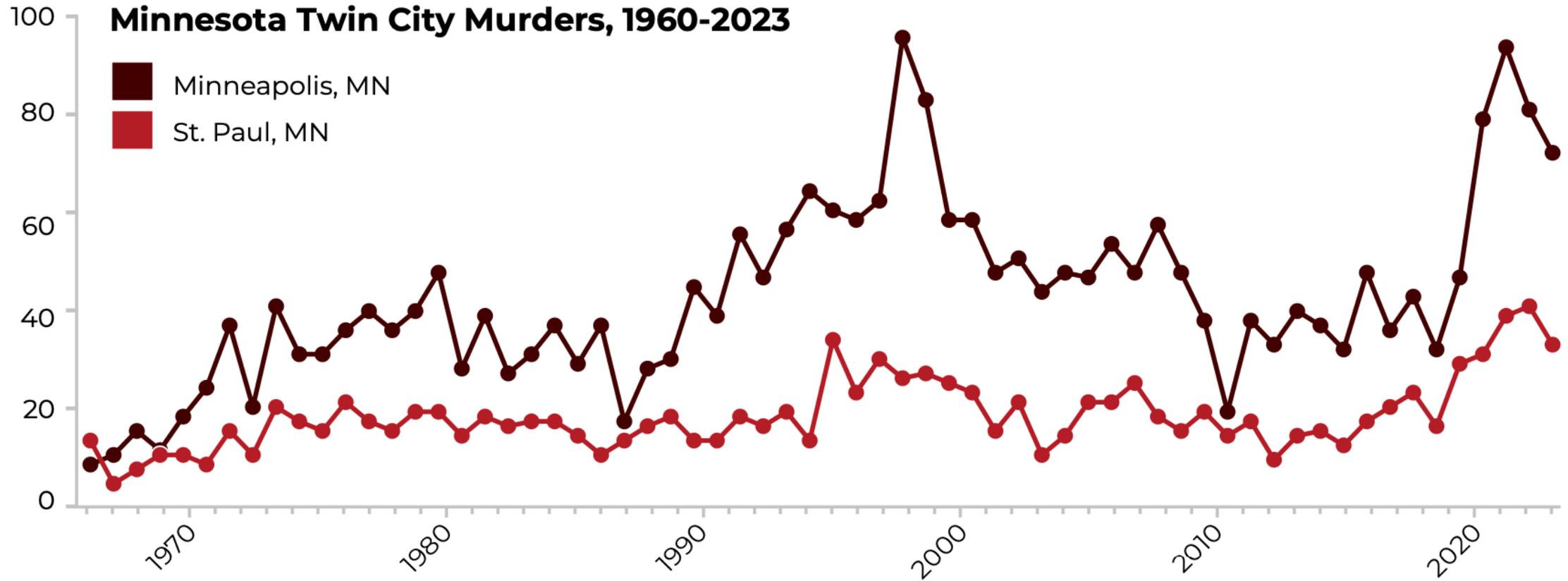
Journal of
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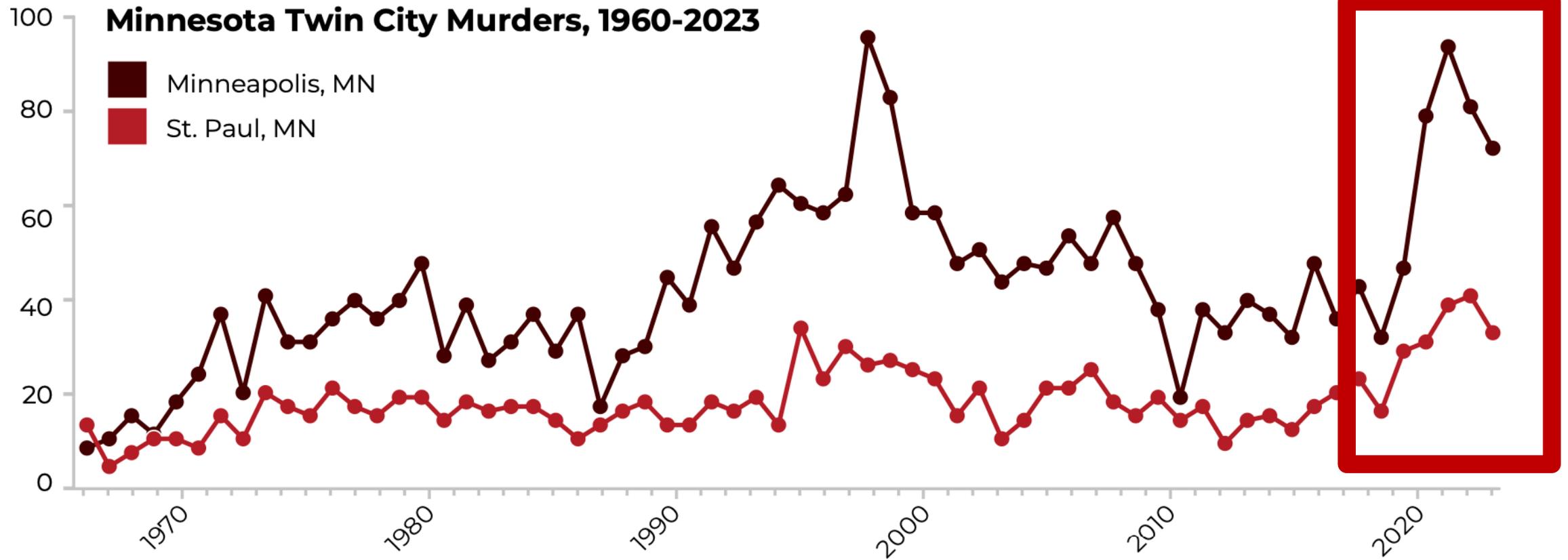
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The Changing Nature of Homicide in the Twin Cities: An Interrupted Time Series Analysis of the Police Murder of George Floyd

Twin Cities Homicide Trends



Twin Cities Homicide Trends



Homicide Perpetrator Interviews

Existing vulnerabilities

- Violence, Drug Use, Firearm Access, Mental Health

Covid pandemic & Murder of George Floyd

- Breakdown of social order, loss of routine, and economic instability
- Loss of relationships, school, homeless shelter, jobs

Crisis Points

- Not well -planned – desperation

Mental Health

- Depression, anxiety
- Suicidality, futurelessness , Anticipated Early Death



The Long Reach of Gun Violence

- ~7% of American adults report being “on the scene” of a mass shooting in their lifetime, about half of these since 2015
- Among the directly exposed, 1/3 reported an associated physical injury
- 94% reported mental health impacts
- Youngest generation is the most exposed

Original Investigation | Public Health Direct Exposure to Mass Shootings Among US Adults

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Abstract

INTRODUCTION Mass shootings, defined as incidents where 4 or more people are shot with a firearm, have become a significant public health concern in the US.

OBJECTIVE To estimate the prevalence of direct exposure to mass shootings among US adults and identify the sociodemographic groups most affected.

DESIGN, SETTING, AND PARTICIPANTS A survey was administered in January 2024 to a sample of 10 000 respondents (18 years or older) designed to be representative of US adults using a multistage matched sampling design. In addition to exposure to mass shootings, the survey also collected sociodemographic information, including age, gender, self-reported race and ethnicity, and socioeconomic status.

EXPOSURE Survey respondents were asked about their lifetime presence at the scene of a mass shooting, any physical injuries sustained (including being shot or trampled or experiencing a related physical injury), and the features of such incidents.

MAIN OUTCOME AND MEASURES Multivariable logistic regression was used to generate adjusted odds ratios (AORs) of the associations between sociodemographic measures and being present on the scene of and injured in a mass shooting. All analyses undertaken to generate population and relational inferences were weighted to achieve representativeness of US adults.

RESULTS Of the 10 000 respondents included in the analysis, 51.34% (95% CI, 50.27%-52.40%) were female. In terms of race and ethnicity, 3.04% (95% CI, 2.71%-3.38%) were Asian, 12.46% (95% CI, 11.81%-13.12%) were Black, 16.04% (95% CI, 15.10%-16.98%) were Hispanic, 62.78% (95% CI, 61.73%-63.84%) were White, and 5.67% (95% CI, 5.23%-6.11%) were other race or ethnicity. The findings indicated that 6.95% (95% CI, 6.39%-7.50%) of respondents were present at the scene of a mass shooting, and 2.18% (95% CI, 1.85%-2.50%) sustained physical injuries, such as being shot or trampled, during such incidents. A total of 54.89% of mass shootings to which respondents were exposed occurred in 2015 or more recently, and 76.15% took place in respondents' local communities. Mass shootings were most likely to occur in neighborhoods. Younger individuals (eg, AOR for Baby Boomer and Silent generations vs Generation Z, 0.12; 95% CI, 0.09-0.18) and males (AOR, 1.55; 95% CI, 1.29-1.85) were more likely to report exposure compared with those from older generations or female individuals, respectively. Black respondents reported higher rates of being present at mass shootings (AOR, 1.87; 95% CI, 1.49-2.34), while Asian respondents reported lower rates (AOR, 0.36; 95% CI, 0.19-0.66), compared with White respondents, but there were no racial and ethnic differences in injuries sustained.

CONCLUSIONS AND RELEVANCE The findings from this survey study of US adults underscore the extensive and often overlooked regular exposure to mass shootings in this country. The demographic disparities in exposure highlight the need for targeted interventions and support for the most

(continued)

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Key Points

Question How prevalent is direct exposure to mass shootings in the US, and is risk equal across sociodemographic groups?

Findings In a survey study of 10 000 US adults, 7% reported having been present on the scene where 4 or more people were shot, which was more common among younger generations, males, and Black respondents. Two percent reported having been injured in a mass shooting—by being shot, trampled, or experiencing related injuries—which was more common among younger generations and males.

Meaning These findings underscore the extensive and often overlooked regular exposure to mass shootings in US society, which calls for targeted interventions designed to reduce violence.

Invited Commentary

Supplemental content

Author affiliations and article information are listed at the end of this article.

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Article

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Mental health consequences of exposure to mass and non-mass shootings in a national sample of US adults

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Check for updates

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Gun violence exposure is a major public health issue in the United States, yet its mental health consequences remain insufficiently examined. This study investigates the short- and long-term psychological self-reported impacts of lifetime gun violence exposure using a cross-sectional survey of 10,000 respondents designed to be representative of US adults administered online by YouGov in January 2024. Findings revealed that 20.1% of respondents reported a mass shooting in their community, 18.3% had been threatened with a firearm, and 2.2% and 2.4% were injured in mass and non-mass shootings, respectively. Between 58.6% and 94.4% reported mental health consequences across exposure types, with younger individuals and women particularly vulnerable. While mass shootings corresponded with greater psychological distress, the long-term impacts, including post-traumatic stress, were reported at a higher rate following non-mass shootings. These findings promote trauma-informed public health interventions tailored to both individual and community-level needs in the aftermath of gun violence.

In 2024, the US Surgeon General declared gun violence a public health emergency responsible for tens of thousands of fatal and non-fatal injuries annually, with over 48,000 fatalities in 2022 alone¹. The increasing burden of firearm violence in the United States has substantial psychological and social ramifications for individuals and communities, with profound mental health implications that extend beyond the physical toll².

Existing literature suggests that exposure to gun violence can lead to major psychological distress, including anxiety, depression, panic attacks and post-traumatic stress symptoms³. Survivors of gun violence, whether directly injured or exposed as witnesses, may experience persistent mental health impacts that undermine their quality of life, including suicidal ideation and psychotic experiences⁴. Vulnerable populations—including women, younger individuals and racial or ethnic minorities—may face even higher risks for negative psychological outcomes following gun violence exposure^{5,6}. Estimates of post-traumatic stress disorder (PTSD) in survivors of mass shootings range from 3% to 9%, depending in part on how the symptoms are defined⁷. Communities experiencing mass shootings are often

described as co-victims due to widespread social disruptions, including school and business closures, fear and confusion⁸.

While research has begun to explore the psychological impact of exposure to gun violence, substantial gaps in our understanding remain. Many studies have focused narrowly on specific forms of violence, such as mass shootings, which represent only a small fraction of all firearm incidents, or have been confined to certain geographic areas, often overlooking the broader, community-wide consequences of gun violence exposure. The mental health effects of gun violence have not yet been comprehensively characterized on a national scale. In addition, the cumulative effects of different forms of gun violence exposure, such as being threatened with a firearm or witnessing a shooting, are less well-documented, especially in nationally representative samples. Most existing research treats firearm violence homogeneously, overlooking the differential impacts based on the nature, proximity and context of the violence⁹. Some forms of violence may be more consequential for mental health, or some individuals may be more susceptible to psychological effects than others.

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THANK YOU