

# Chapter 5

## School Shootings: Creating Safer Schools



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### Introduction

For most who live in America, schools are considered places that should be a safe haven. School should be a place for children to grow, learn, and explore. The scariest thing a child should experience in school is a spelling test or how they are going to do in Advanced Placement (AP) Chemistry. For hundreds of years, education has been happening, and it has mostly been a place where students are safe.

More than 30 years before the Columbine High School shooting in 1999, Charles Whitman climbed the tower at the University of Texas and shot 15 people before the police shot him. (He had killed his wife and mother before going to campus, giving a total count of 18 people dead.) It was the first mass murder in the twentieth century in a school setting. But it was the Columbine High School shooting that ushered in a trajectory that continues. Since then, law enforcement, psychologists, and others have tried to understand who and why individuals are at risk to commit violence and to identify ways to intervene before they become violent.

### Identifying Possible School Shooters

Experts point to numerous causes for school shootings, yet the profile and motivation of shooters who target educational institutions vary widely, creating a spectrum of events. Langman [1] analyzed 62 shooting incidents that occurred from 1966 through 2015. He limited his review to premeditated events where three or more people were killed or wounded. More than half the perpetrators were adolescents, and 95.3% were

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male. More than half were Caucasian. Sometimes the shooters apparently planned to either kill themselves as part of the event or to have the police shoot them. The overall suicide rate was 42.2%, but more shooters had expressed suicidal intent [1].

Many perpetrators have been the victims of school bullying, making them possibly feel justified in turning their wrath to classmates and against teachers and administrators for not protecting them. Levin and Madfis [2] believe that some individuals view school violence as a solution to the shooters' damaged sense of self-worth. The act of being a school shooter is a way to assert their masculinity and gain notoriety [2]. Finding no other way to be noticed, they use attacking a school as a way to gain attention.

Often in the media reports surrounding school shootings, there is a suggestion that mental health problems are the major cause of gun violence, and that psychiatric illness can predict gun crimes. Evidence strongly indicates that individuals who perpetrate mass killings are often mentally ill and socially marginalized [3]. However, there also exist a number of stereotypical assumptions about guns, violence, and mental illness in general, thus oversimplifying the connection between violence and mental illness in public discourse [3]. While many school shooters were mentally ill or showed symptoms of mental health problems, most people with mental health problems do not resort to shooting classmates.

## Cultural Violence

It has been suggested that violence in our culture also contributes to the common settings around school shootings. Many video games, movies, music, and comic books are filled with and glorify violence. The American Psychological Association (APA) has suggested that this may play a role in the violence we see in schools and in school shootings. Studies supported by the APA suggest that violent video game exposure is associated with an increased composite aggression score; increased aggressive behavior; increased aggressive cognitions; increased aggressive affect, increased desensitization and decreased empathy; and increased physiological arousal. Others strongly opposed the idea that violent video games leads to actual violence, focusing on the methodological problems in other studies [4, 5]. A recent meta-analysis reviewed 24 studies with over 17,000 participants, and concluded that there was an association of playing violent video games with greater levels of overt physical aggression over time, even after accounting for prior aggression [6]. An earlier study found that children diagnosed with disruptive behavior, as demonstrated by attention-deficit-hyperactivity disorder, oppositional defiant disorder, or conduct disorder, processed movies with antisocial messages differently than comparable children without such diagnoses [7].

Does violent media have enough of an influence that it is a public health threat? Huesmann argues that it does [8]. Based on two earlier (1994 and 2002) meta-analyses, there was a large effect size of exposure of media violence in childhood to latter aggressive or violent behavior [9, 10]. Indeed, the effect size found for media

violence is larger than other public health threats, such as condom use and sexually transmitted HIV, passive smoking and lung cancer at work, and exposure to lead and children's IQ scores, among others [8]. The U.S. owns almost half of the civilian-owned guns in the world. Forty percent of people in the U.S. own or live in a house with guns, with most gun owners having more than one gun [11]. In 2019 there were about 63,000 gun dealers in the U.S., which does not include other than legal sources [12]. These statistics help explain how school shooters have access to multiple firearms.

## Guns in Schools

There are, as of this writing, two federal laws in the United States governing guns in kindergarten through 12th grade. One is the Gun-Free Schools Act of 1994, which requires each state has a law that schools must expel for 1 year any student who has a firearm on campus. A local administrator, however, may modify the expulsion requirements on a case-by-case basis [13]. The other is Gun-Free School Zones Act, which states that it is unlawful to knowingly “possess a firearm that has moved in or that otherwise affects interstate or foreign commerce at a place that the individual knows, or has reasonable cause to believe, is a school zone.” [14] The exception to this law is that it exempts individuals licensed to possess a gun or carry a concealed weapon. The law also allows weapons in school zones if the gun is not loaded and is either in a locked container or a locked vehicular firearms rack. It is also lawful to have a weapon for use in a school-approved program, or when there is a contract between the school and the person with the gun [15].

As a general rule, most states prohibit guns in public schools. Many schools, however, provide exceptions to these laws, including those with concealed carry licenses, anyone with permission of school, and law enforcement. Many states also have exceptions to the law (Table 5.1). A more detailed explanation of individual state laws may be found at the Giffords Law Center website [16].

## Higher Education

States typically have more lax laws regarding guns on college campuses. In 2013 and 2014, 33 states introduced legislation to allow concealed carry on campuses (Table 5.2). In 2015, Texas passed a law allowing individuals to carry concealed weapons. In 2016, Tennessee passed a law allowing faculty to carry handguns, and a year later, Arkansas and Georgia passed laws allowing both faculty and students to carry guns on campus. Ohio passed a law in 2016, leaving the decision to individual colleges [18]. In the wake of school shootings, five states introduced legislation to prohibit concealed carry weapons on college and university campuses. In all five states, the bills were defeated. There are no federal laws governing guns on college campuses.

**Table 5.1** State policies on carrying guns in primary and secondary schools [17]

Policy	States
Requires permission of school authorities	Alaska, Arizona, Connecticut, Georgia, Iowa, Kansas, Louisiana, Massachusetts, Michigan, Montana, New Jersey, New York, Nevada, Ohio, Oklahoma, Oregon, Texas, Utah, Vermont
Requires concealed carry license	Alabama, Oregon, Rhode Island, Utah
Requires concealed carry license and permission of authorities	Idaho, Indiana, Missouri
School employees (other than security, requires concealed carry license and permission of authorities)	Idaho, Kansas, Wyoming
School employees (other than security, requires permission of authorities and completion of specified training)	Florida, Missouri, Oklahoma, Tennessee (only in qualifying districts), Texas, South Dakota
School security	Alabama, California, Colorado, Delaware, Georgia, Idaho, Illinois, Indiana, Maryland, Michigan, Mississippi, North Dakota, New Mexico, Nevada, Ohio, Oklahoma, South Dakota, Tennessee, Texas, Washington, West Virginia
Only students prohibited	New Hampshire
No relevant statute	Hawaii
Law enforcement	Alaska, Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Massachusetts, Maryland, Maine, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, North Carolina, New Mexico, Nevada, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin

## The Scope of School Shootings

There is no official count of school shootings or victims, in part because no standard definition exists. Sometimes the shooter is included in the death toll if the person commits suicide. Some reports include unintentional injury on school property. Other reports focus on mass attacks rather than those that occur in schools (Table 5.3). There were also a number of incidents where shootings were intentional, but the fact that it occurred on a school campus appears to be irrelevant, as

**Table 5.2** State policies on carrying guns on college campuses [18]

Policy	States
Prohibit carrying a concealed weapon on campus	California, Florida, Illinois, Louisiana, Massachusetts, Michigan, Missouri, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, South Carolina, Wyoming
Decision to ban or allow concealed carry weapons is made by individual college or university	Alabama, Alaska, Arizona, Connecticut, Delaware, Hawaii, Indiana, Iowa, Kentucky, Maine, Maryland, Minnesota, Montana, New Hampshire, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Vermont, Virginia, Washington, West Virginia
Allow carrying of concealed weapons	Arkansas, Colorado, Georgia, Idaho, Kansas, Mississippi, Oregon, Texas, Utah, Wisconsin
Allow licensed faculty members to carry concealed weapons, but not students or the general public	Tennessee

best can be determined, as opposed to shootings that specifically target students or others on a campus. Many estimates of shooting exclude the perpetrator. But whether the perpetrator's death is self-inflicted or by law enforcement, we have chosen to include their deaths in the count in Table 5.3 [19].

This table reviews shootings from the 1950s to the present. The data are presented in decades from 1950 to 2009; 2010 through 2012 are grouped, and then these are single years. At least two sources verified every incident listed in the table [19].

In 2014 and 2015, there were 61 shooting incidents each year. In all of the 1990s and 2000s, there were 61 shootings in each decade. After a drop in the number in 2016, the numbers increased again. Although there were no mass school shootings in 2019, there were 101 shooting incidents at schools. The COVID-19 pandemic of 2020 is the likely cause in the drop of incidents seen in the first 4 months of the year.

As previously noted, many people believe the 1999 Columbine High School massacre initiated the modern era of school shootings. Actually, it began in 1966. After killing his mother and wife, Charles Whitman climbed the tower at the University of Texas at Austin and killed 15 people and injured another 31. It ended when the Austin police killed him. On autopsy, he was found to have a brain tumor. Whether the tumor was responsible for his inability to control his behavior was not conclusive [20]. The mass shootings at schools in the United States are listed in Table 5.4.

As shown in Table 5.4, there were 33 years between the University of Texas tower shooting and Columbine. Although there were six mass shootings, defined as four or more deaths, in between those two events, the information level and the speed of dissemination of that information have increased significantly. If notoriety is something an individual is seeking, it is certainly more accessible now than in the past.

**Table 5.3** Shootings on school property [19]

Year(s)	Number of incidents	Number of deaths	Average number of deaths/year	Number of injuries	Number of school shooting by type of school*				
					College	High school	Junior high/middle school	Elementary school	Preschool
1950s	17	13	1.3	8	3	11	3	-	-
1960s	18	44	4.4	64	4	9	3	2	-
1970s	27	30	3.0	75	4	12	6	5	-
1980s	38	48	4.8	164	5	18	8	7	-
1990s	61	86	8.6	145	8	37	14	2	-
2000s	61	106	10.6	137	15	34	10	3	-
2010-2012	22	54	18	39	7	14	4	2	-
2013	38	28	28	36	13	17	5	3	-
2014	61	27	27	49	26	25	1	7	2
2015	61	35	35	56	27	17	5	9	2
2016	38	17	17	42	13	21	2	1	-
2017	49	22	22	37	19	20	-	8	-
2018	85	63	63	64	17	47	7	14	-
2019	101	35	35	61	36	37	7	18	1
2020 (January-April)	25	9	27	11	14	7	1	3	-

\*School level not included when shooting was either into/on a school bus or in a K-12 school

**Table 5.4** Mass shootings at the US schools

Date	School	Location	Deaths	Injuries
August 1, 1966	University of Texas	Austin, TX	16	31
May 4, 1970	Kent State University	Kent, OH	4	9
July 12, 1976	California State University	Fullerton, CA	7	2
January 17, 1989	Cleveland Elementary School	Stockton, CA	6	32
November 1, 1991	University of Iowa	Iowa City, IA	6	1
May 1, 1992	Lindhurst High School	Olivehurst, OH	4	10
March 24, 1998	Westside Middle School	Jonesboro, AR	5	10
April 20, 1999	Columbine High School	Columbine, CO	15	21
October 28, 2002	University of Arizona	Tucson, AZ	4	0
March 21, 2005	Red Lake Senior High School	Red Lake, MN	10	5
October 2, 2006	West Nickel Mines School	Bart Township, PA	6	5
April 16, 2007	Virginia Tech University	Blacksburg, VA	33	23
February 14, 2008	Northern Illinois University	DeKalb, IL	6	17
April 2, 2012	Oikos University	Oakland, CA	7	3
December 14, 2012	Sandy Hook Elementary School	Newtown, CT	27	2
June 7, 2013	Santa Monica College	Santa Monica, CA	6	2
October 24, 2014	Marysville Pilchuck High School	Marysville, WA	5	1
October 1, 2015	Umpqua Community College	Roseburg, OR	10	8
February 14, 2018	Marjory Stoneman High School	Parkland, FL	17	17
May 18, 2018	Santa Fe High School	Santa Fe, TX	10	13

**Table 5.5** African school shootings

Year	Country	Deaths	Injuries	School type
1997	Yemen	6	12	Unknown
1999	South Africa	3	0	High school
2009	South Africa	2	0	High school
2010	South Africa	1	1	Middle school
2013	South Africa	1	0	High school
2013	Nigeria (multiple incidents by Boko Haram) <sup>a</sup>	133	10	Elementary to college
2015	Kenya <sup>b</sup>	148	79	College

<sup>a</sup>These incidents occurred within the context of religious violence between Nigeria's Muslim and Christian communities, and Boko Haram's aim is to establish an Islamic State

<sup>b</sup>Al-Shabaab is a jihadist fundamentalist group in East Africa. The organization pledged allegiance to Al-Qaeda. Al-Shabaab imposes a strict version of Sharia in areas under its control. This was an attack on Christians

## School Shootings Outside of the United States

Unfortunately, the United States is not alone in the problem of school shootings. Tables 5.5, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11, and 5.12 show the shootings at schools in Africa, Asia, Canada, Central America, Europe, Mexico, Oceania, and South America from 1990 to the present.

**Table 5.6** Asian school shootings

Year	Country	Deaths	Injuries	School type
1990	Sri Lanka	158	unknown	College
1994/1999/2000 <sup>a</sup>	Philippines	3	0	College
1999	Yemen	6	12	High school
2000	Indonesia	165 <sup>b</sup> –191 <sup>c</sup>	100s	Unknown
2002	China	2	2	Middle school
2003	Thailand	2	4	High school
2005	China	0	16	Elementary school
2008	Israel	8	11	High school
2009	Azerbaijan	13	13	College
2011	China	1	0	Middle school
2014	Pakistan	150 <sup>d</sup>	100+	K-12

Unverified: 1999, China, two deaths, seven injuries middle school

<sup>a</sup>Three individual incidents involving fraternity gang fights [21]

<sup>b</sup>Official count

<sup>c</sup>News reports considered more valid

<sup>d</sup>Taliban attack

**Table 5.7** Canadian school shootings

Year	Country	Deaths	Injuries	School type
1992	Canada	4	1	College
1999	Canada	1	1	High school
2004	Canada	1	0	High school
2006	Canada	2	19	College
2007	Canada	1	0	High school
2007	Canada	1	0	High school
2010	Canada	0	0	High school
2013	Canada	2	0	Preschool
2016	Canada	4	7	Secondary school

**Table 5.8** Central American school shootings [22]

Year	Country	Deaths	Injuries	School type
2009	El Salvador	1	1	High school
2009	Honduras	0	4	High school
2010	Costa Rica	1	0	High school
2017	Costa Rica	2	1	K-12
2019	Belize	0	1	High school



**Table 5.9** European school shootings

Year	Country	Deaths	Injuries	School type
1994	Denmark	3	2	College
1996	United Kingdom (Scotland)	18	16	Primary school
1999	Netherlands	0	5	High school
2000	Germany	1	1	High school
2001	Sweden	1	0	High school
2002	Germany	17	1	High school
2002	Germany	2	1	High school
2002	Bosnia-Herzegovina	2	1	High school
2003	Germany	0	1	High school
2004	The Netherlands	1	0	High school
2006	Germany	1	5	High school
2007	Finland	9	1	High school
2008	Finland	11	1	College
2009	Germany	16	9	High school
2009	Greece	1	3	College
2009	Norway	0	0	Elementary school
2009	Hungary	1	3	College
2012	France	4	1	Primary school
2014	Russia	2	1	High school
2014	Estonia	1	0	High school
2017	France	0	4	High school
2018	Russia	0	7	Middle school
2018	Russia	1	1	College
2018	Crimea	21	70	College
2019	Poland	0	2	Elementary school

**Table 5.10** Mexican school shootings

Year	Country	Deaths	Injuries	School type
2004	Mexico	1	0	Middle school
2007	Mexico	1	0	Preschool
2010	Mexico	2	0	Elementary school
2011	Mexico	1	5	Elementary school
2012	Mexico	1	0	Elementary school
2014	Mexico	1	0	Middle school
2017	Mexico	4	1	Middle school
2018	Mexico	2	0	College
2018	Mexico	1	1	High school
2018	Mexico	1	4	High school
2018	Mexico	1	0	Middle school
2019	Mexico	1	0	Elementary school
2019	Mexico	1	0	College
2020	Mexico	2	6	Elementary school

Unverified: 2018, Mexico two deaths (not included in table)

**Table 5.11** Oceanian school shootings

Year	Country	Deaths	Injuries	School type
1991	Australia	0	3	High school
1993	Australia	0	0	High school
1999	Australia	1	0	College
2001	Australia	1	0	High school
2002	Australia	2	5	College
2012	Australia	0	0	High school

**Table 5.12** South American school shootings [22]

Year	Country	Deaths	Injuries	School type
2000	Brazil	1	1	High school
2001	Brazil	1	2	High school
2004	Argentina	4	5	Middle school
2008	Brazil	1	0	Unknown
2009	Argentina	1	0	Middle school
2011	Brazil	13	22	Middle school
2017	Brazil	2	4	High school
2018	Brazil	0	2	High school
2019	Brazil	10	11	High school

These tables should be considered as a minimum count. As with the shootings in the United States, unintentional discharge was not included in the count. Notably, there were more than six times as many school shootings in the United States as the rest of the world. However, because of the sectarian violence in Indonesia (2000), Nigeria (2013), and Kenya (2015), with more than 100 victims in a single incident, there were more killings in Africa and Asia than in the United States.

## Creating Safer Schools

Parents around the world, including those in the United States, want their children to be safe. Price and Khubchandani [23] review the literature with the traditional public health approach of primary, secondary, and tertiary prevention. As with other diseases/conditions, primary prevention is the most effective strategy. In this instance, primary prevention would be to prevent students and others from accessing guns. In their model, Price and Khubchandani [23] describe secondary prevention as preventing those with gun access from bringing firearms into a school. Finally, tertiary prevention would have armed personnel intercede during a school shooting. To be clear, the goal is that no one should ever be at the point of needing tertiary prevention. Ideally, neither students nor adults should have guns in school settings, particularly in primary and secondary schools. Using nationally representative data, Schuster and colleagues found that 35% of homes with children younger

than 18 had at least one gun, and almost half of those guns were neither in a locked cabinet nor had a trigger lock [24]. Other studies corroborated youths' access to guns [25, 26]. Particularly disturbing findings were that having children in the home, was not significantly associated with higher rates of safe gun storage [26] and that students who were bullied compared to those who were not had access to a loaded gun without adult permission [27]. Vossekuil and colleagues found that 68% of students got their weapons from their own or a relative's homes [28].

There is an association between stricter firearm legislation at the state level and lower pediatric firearm-related mortality. These state laws include universal background checks for firearm purchases, universal background checks for ammunition purchases, identification requirement for firearms, and child access prevention laws [29, 30]. Goyal and colleagues used state-level data to control for population-based race and ethnicity proportions, percent of the population with a college education, and percent of the population living below the poverty threshold. Their study supports the hypothesis that states with stricter firearm-related legislation have lower rates of pediatric firearm-related deaths compared with states with less strict firearm legislation [29]. Madhavan found that the association between child access prevention laws and firearm suicide remained significant after controlling for relevant characteristics (socioeconomic factors, registered firearms, and other firearm legislation) [30].

While limiting access to guns is one approach, metal detectors in schools, school resource police officers, and threat assessments form other methods to prevent school shootings. The goal of threat assessments is to identify students before they actively pose a threat to others. Many programs exist that could help prevent a tragedy. Such programs include conflict-resolution curricula, bullying prevention, deterring aggression, and others that encourage positive and helpful behaviors [31]. Clinicians should establish student's motives and objectives to determine if a student had the means and were likely to act on a threat of violence [32]. Students tend to share their plans with others. Vossekuil and colleagues in their report found that 81% of school shooters had told at least one other person about their plan [28]. In a study of middle and secondary school students reviewing who would inform others found that while 40% said they would tell another student, only 20% would share that information with an adult. Boys were less likely than girls to report, and the likelihood of reporting decreased with age [23].

Secondary prevention accepts that students will have access to guns, and the goal is to prevent them from bringing them to school. Schools engage in practices and procedures to keep their students, faculty, and staff safe. Some practices limit and control access to school by locking or monitoring entrance to the building. Other methods restrict what students or visitors can bring into the school, such as use of metal detectors and security cameras. In one 2017 study, the National Center for Education Statistics surveyed students age 12–18 years on safety measures in their schools. Most schools (99.4%) had at least one security measure. Other measures included security cameras to monitor the school (83.4%), a requirement that students wear badges or picture IDs (24.4%), metal detectors (10.4%), locker checks (47.8%), security guards and/or assigned police officers (70.9%), other school staff

or adults supervising the hallway (88.2%), a written code of student conduct (94.7%), locked entrance or exit doors during the day (78.8%), and a requirement that visitors sign in and wear badges or stickers (90.4%) [33]. Other security measures included a requirement that faculty and staff wear badges or picture IDs, a strict dress code or uniforms for students, and random dog sniffs to check for drugs. The percentage of schools varied by school level. For example, security camera use and drug-sniffing dogs increased with increasing age of the students. Conversely, controlled access to school buildings during class time was highest for elementary school students and lowest for high school students [34].

In the wake of mass school shooting, schools have renewed interest in a resource officer. Anderson evaluated a bill to help school districts support student resource officers for elementary and middle schools [35]. The theory behind a school resource officer is that students will gain trust in law enforcement, schools will be safer, and an officer would be present if needed. Among middle-schoolers, boys, students who felt connected to school, and those with positive attitudes towards resource officers believed resource officers' presence made them safer. Girls, African-American students, and students who experienced violence reported that the resource officer did not make them feel safe at school. There was no association between the presence of a school resource officer and any reduction in school shooting severity [35, 36].

The Gun-Free Schools Act led to zero-tolerance policies. While expelling students for bringing a gun to school is logical, the policy was taken to the extreme, including expulsion for bringing butter knives or toy swords, over-the-counter medication like aspirin, talking back to a teacher, or being disruptive [37]. This expansion of zero-tolerance policies has created a school to prison pipeline that targets low socioeconomic and racial minorities [23, 37].

The secondary prevention of random locker searches enters the area of Fourth Amendment rights to be free from unreasonable searches. While there is a need to strike a balance between the school's and student's rights, that balance will likely depend on the student population, and the history of violence at the school.

Tertiary prevention would have armed personnel, be it teacher, school resource officers or others, intercede during a school shooting. Such person would shoot, and presumably kill the shooter. If the shooter has a semiautomatic weapon, armed personnel would need to be in exactly the same place as the shooter to minimize the number of victims. A 2011 study found a correlation between armed guards in schools and higher rather than lower rates of school violence [38]. Two of the deadliest shootings occurred in schools with armed security personnel [39].

## Conclusion

Gun violence is a public health crisis. In the United States, firearms have caused an increasing number of deaths over time, reaching almost 40,000 in 2018.

Firearm-related violence includes homicide, suicide, accidental deaths, and injuries. Although not limited to occurring in schools, all of these firearm-related incidents have happened in schools, from preschools through colleges.

Preventing school violence needs to be a priority. It requires a focus on programs that develop the positive aspects of development and reduces violence. It may not be easy, but we need to develop programs and train individuals to recognize warning signs. It requires training staff to defuse a volatile situation. It requires teaching students about healthy relationships, about not bullying others, about the importance of self-esteem, and about conflict resolution. It may not be easy to pay attention and to care, but our children's very lives may depend upon it.

## References

1. Langman P. Multi-victim school shootings in the United States: A fifty-year review. *J Campus Behav Interv.* 2016;4:5–17.
2. Levin J, Madfis E. Mass murder at school and cumulative strain: A sequential model. *Am Behav Sci.* 2009;52:1227–45.
3. Metzl JM, MacLeish KT. Mental illness, Mass shootings, and the politics of American firearms. *Am J Public Health.* 2015;105:240–9.
4. Ferguson CJ. Media violence: miscast causality. *Am Psychol.* 2002;57:446–7.
5. Ferguson CJ. The problem of false positives and false negatives in violent video game experiments. *Int J Law Psychiatry.* 2018;56:35–43.
6. Prescott AT, Sargent JD, Hull JG. Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proc Natl Acad Sci U S A.* 2018;115(40):9882–8.
7. Grimes T, Vernberg E. Catheters, Emotionally disturbed children's reactions to violent media segments. *J Health Commun.* 1997;2(3):157–68.
8. Huesmann LR. The impact of electronic media violence: scientific theory and research. *J Adolesc Health.* 2007;41(6 Suppl 1):S6–13.
9. Paik H, Comstock G. The effects of television violence on antisocial behavior: A meta-analysis. *Commun Res.* 1994;21:516–46.
10. Anderson CA, Bushman BJ. Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: a meta-analytic review of the scientific literature. *Psych Sci.* 2001;12:353–9.
11. Fox K. How the US gun culture compares with the world. CNN. <https://www.cnn.com/2017/10/03/americas/us-gun-statistics/index.html>. Updated August 6, 2019. Accessed 14 Apr 2020.
12. Freskos B. The life cycle of a stolen gun. *The New Yorker* <https://www.newyorker.com/news/news-desk/why-thieves-target-gun-stores>. Published February 7, 2019. Accessed 14 Apr 2020.
13. US Department of Education. Gun possession – SEC. 4141. Gun-free requirements. <https://www2.ed.gov/policy/elsec/leg/esea02/pg54.html>. Published September 1, 2004. Accessed 17 Apr 2020.
14. US Congress. S. 2070 – gun-free school zones act of 1990. <https://www.congress.gov/bill/101st-congress/senate-bill/2070>. Published February 12, 1990. Accessed 17 Apr 2020.
15. Giffords Law Center. Guns in schools. <https://lawcenter.giffords.org/gun-laws/policy-areas/guns-in-public/guns-in-schools/#federal>. No date. Accessed 17 Apr 2020.
16. Giffords Law Center. Guns in school state by state. <https://lawcenter.giffords.org/gun-laws/state-law/50-state-summaries/guns-in-schools-state-by-state/>. Published December 16, 2019. Accessed 15 Apr 2020.
17. Erwin B. National conference of state legislators: school safety: guns in schools. <https://www.ncsl.org/research/education/school-safety-guns-in-schools.aspx>. Published March 8, 2019. Accessed 15 Apr 2020.

18. National Conference of State Legislators. Guns on campus: overview. <https://www.ncsl.org/research/education/guns-on-campus-overview.aspx>. Published November 1, 2019. Accessed 15 Apr 2020.
19. Kiely M, Manze MG, Palmedo PC. Personal health: a population perspective. Burlington: Jones & Bartlett Learning; 2018.
20. Frederick E. The Daily Texan. <https://thedailytexan.com/2016/07/30/experts-still-disagree-on-role-of-tower-shooters-brain-tumor>. Published July 30, 2016. Accessed 01 May 2020.
21. Zarco RM, Shoemaker DJ. Report on student organization conflicts, University of the Philippines, Diliman, 1938–2000. *Philipp Sociol Rev.* 2012;60:19–70.
22. United Nations Regional Center for Peace, Disarmament and Development in Latin America and the Caribbean. Preventing firearms proliferation and armed violence in education centres of Latin American and the Caribbean. Lima: United Nations; 2011.
23. Price JH, Khubchandani J. School firearm violence prevention practices and policies: functional or folly? *Violence Gend.* 2019;6(3):154–67.
24. Schuster MA, Franke TM, Bastian AM, Sor S, Halfon N. Firearm storage patterns in US homes with children. *Am J Public Health.* 2000;90:588–94.
25. Johnson RM, Coyne-Beasley T, Runyan CW. Firearm ownership and storage practices, US households, 1992–2002: a systematic review. *Am J Prev Med.* 2004;27:173–82.
26. Connor SM. The association between presence of children in the home and firearm-ownership and-storage practices. *Pediatrics.* 2005;115:e38–43.
27. Simckes MS, Simonetti JA, Moreno MA, Rivera FP, Oudekerk BA, Rowhani-Rahbar A. Access to a loaded gun without adult permission and school-based bullying. *J Adolesc Health.* 2017;61:329–34.
28. Vossekuil B, Fein RA, Reddy M, Borum R, Modzeleski W. The final report and findings of the safe school initiative: implications for the prevention of school attacks in the United States. U.S. Department of Education, Office of Elementary and Secondary Education, Safe and Drug-Free Schools Program and U.S. Secret Service, National Threat Assessment Center, Washington, DC, 2002. <https://www2.ed.gov/admins/lead/safety/preventingattacksreport.pdf> Accessed 7 May 2020.
29. Goyal MK, Badolato GM, Patel SJ, Iqbal SF, Parikh K, McCarter R. State gun laws and pediatric firearm-related mortality. *Pediatrics.* 2019;144(2):e20183283. <https://doi.org/10.1542/peds.2018-3283>.
30. Madhavan S, Taylor JS, Chandler JM, Staudenmayer KL, Chao SD. Firearm legislation stringency and firearm-related fatalities among children in the US. *J Am Coll Surg.* 2019;229(2):150–7.
31. Rappaport N, Barrett JG. Under the gun: threat assessment in schools. *Virtual Mentor.* 2009;11(2):149–54.
32. Federal Bureau of Investigation. The school shooter: a threat assessment perspective. <https://www.fbi.gov/file-repository/stats-services-publications-school-shooter-school-shooter/view>. Published December 1, 1999. Accessed 7 May 2020.
33. U.S. Department of Education, National Center for Education Statistics. Digest of education statistics. Table 233.80 [https://nces.ed.gov/programs/digest/d18/tables/dt18\\_233.80.asp?current=yes](https://nces.ed.gov/programs/digest/d18/tables/dt18_233.80.asp?current=yes) Published December 2019. Accessed 7 May 2020.
34. U.S. Department of Education, National Center for Education Statistics. Indicators of school crime and safety: 2018. Indicator 19: school safety and security measures. (NCES 2019–047). 2019. <https://nces.ed.gov/fastfacts/display.asp?id=334> Published 2019. Accessed 7 May 2020.
35. Anderson KA. Policing and middle school: an evaluation of a statewide school resource officer policy. *Middle Grades Rev.* 2018;4(2):Article 7. <https://scholarworks.uvm.edu/mgreview/vol4/iss2/7>
36. Livingston MD, Rossheim ME, Hall KS. A descriptive analysis of school and school shooter characteristics and the severity of shootings in the United States, 1999–2018. *J Adolesc Health.* 2019;64(6):797–9.

37. Maxime F. Zero-tolerance policies and the school to prison pipeline. <http://www.sharedjustice.org/domestic-justice/2017/12/21/zero-tolerance-policies-and-the-school-to-prison-pipeline>. Published January 18, 2018. Accessed 8 May 2020.
38. Jennings WG, Khey DN, Maskaly J, Donner CM. Evaluating the relationship between law enforcement and school security measures and violent crime in schools. *J Police Crisis Negotiations*. 2011;11:109–24.
39. Crews GA, Crews AD, Burton CE. The only thing that stops a guy with a bad policy is a guy with a good policy: an examination of the NRA's National School Shield: proposal. *Am J Crim Justice*. 2013;38:183–99.