

School Shootings¹

Approximately one-third (n = 52 or 37%) of the 139 documents focus primarily on school shootings. Included in this list are peer-reviewed, published articles, government/organization reports, books and book chapters.

Page	Alphabetical List of Citations
6	Agnich, L.E. (2015). A comparative analysis of attempted and completed school-based mass murder attacks. <i>American Journal of Criminal Justice</i> , 40, 1–22 https://doi.org/10.1007/s12103-014-9239-5
6	Anderson M., Kaufman J., Simon T.R., Barrios, L., Paulozzi, L., Ryan, G., Hammond, R., Modzeleski, W., Feucht, T., Potter, L., & the School-Associated Violent Deaths Study Group. (2001). School-associated violent deaths in the United States, 1994-1999. <i>Journal of the American Medical Association</i> , 286(21), 2695–2702. doi:10.1001/jama.286.21.2695
7	Brock, M., Kriger, N., & Miro, R. (2018). <i>School Safety Policies and Programs Administered by the U.S. Federal Government 1990-2016</i> . National Institute of Justice, U.S. Department of Justice. https://www.ncjrs.gov/pdffiles1/nij/grants/251517.pdf
7	Brown, R. P., Osterman, L. L., & Barnes, C. D. (2009). School violence and the culture of honor. <i>Psychological Science</i> , 20(11), 1400–1405. https://doi.org/10.1111/j.1467-9280.2009.02456.x
7	Centers for Disease Control and Prevention. (2001). Temporal variations in school-associated student homicide and suicide events -- United States, 1992-1999. <i>MMWR: Morbidity & Mortality Weekly Report</i> , 50(31), 657–660. https://doi.org/10.1001/jama.286.10.1168
8	Centers for Disease Control and Prevention. (2008). School-associated student homicides -- United States, 1992-2006. <i>MMWR: Morbidity & Mortality Weekly Report</i> , 57(2), 33–36. https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5702a1.htm
8	Daniels, J. A. (2019). <i>A preliminary report on the Police Foundation's Averted School Violence Database</i> . Washington, DC: Office of Community Oriented Policing Services.
9	Donohue, E., Schiraldi, V., & Ziedenberg, J. (1998). <i>School house hype: School shootings and the real risks kids face in America</i> . Justice Policy Institution, Washington, DC. https://files.eric.ed.gov/fulltext/ED448226.pdf
9	Erlandsson, A. & Meloy, J. R. (2018). The Swedish school attack in Trollhattan. <i>Journal of Forensic Sciences</i> , 63(6), 1917-1927. https://doi.org/10.1111/1556-4029.13800
9	Farr, K. (2010). Trouble with the other: The role of romantic rejection in rampage school shootings by adolescent males. <i>Violence and Gender</i> , 6(3), 147-153. http://doi.org/10.1089/vio.2018.0046

10	Ferguson, C. J. (2008). The school shooting/violent video game link: causal relationship or moral panic? <i>Journal of Investigative Psychology & Offender Profiling</i> , 5(1/2), 25–37. https://doi.org/10.1002/jip.76
10	Fox, J. A., & DeLateur, M. J. (2014). Mass shootings in America: Moving beyond Newtown. <i>Homicide Studies</i> , 18(1), 125–145. https://doi.org/10.1177/1088767913510297
10	Fridel, E. F. (2019). The contextual correlates of school shootings. <i>Justice Quarterly</i> . https://doi.org/10.1080/07418825.2019.1666907
11	Fritzon, K. & Brun, A. (2005). Beyond Columbine: A faceted model of school-associated homicide. <i>Psychology, Crime, & Law</i> , 11(1), 53-71. https://doi.org/10.1080/1068316042000209314
11	Gerard, F. J., Whitfield, K. C., Porter, L. E., & Browne, K. D. (2016). Offender and offence characteristics of school shooting incidents. <i>Journal of Investigative Psychology & Offender Profiling</i> , 13(1), 22–38. https://doi.org/10.1002/jip.1439
12	Government Accountability Office, K-12 Education: Characteristics of school shootings, GAO-20-455 (Washington, D.C.: June 2020). https://www.gao.gov/assets/710/707469.pdf
12	Hall, R.C. W., Friedman, S. H., Sorrentino, R., Lapchenko, M., Marcus, A., & Ellis, R. (2019). The myth of school shooters and psychotropic medications. <i>Behavioral Sciences and the Law</i> , 37, 540-558. https://doi.org/10.1002/bsl.2429
12	Holland, K. M., Hall, J. E., Jing Wang, Gaylor, E. M., Johnson, L. L., Shelby, D., Simon, T. R., Wang, J., & the School-Associated Violent Deaths Study Group. (2019). Characteristics of school-associated youth homicides - United States, 1994-2018. <i>Morbidity & Mortality Weekly Report</i> , 68(3), 53–60. https://doi.org/10.15585/mmwr.mm6803a1
13	JeeHae H. L. (2013). School shootings in the U.S. public schools: Analysis through the eyes of an educator. <i>Review of Higher Education & Self-Learning</i> , 6(22), 88–119.
14	Kalish, R. & Kimmel, M. (2010). Suicide by mass murder: Masculinity, aggrieved entitlement, and rampage school shootings. <i>Health Sociology Review</i> , 19(4), 451-464. https://doi.org/10.5172/hesr.2010.19.4.451
14	Katsiyannis, A., Whitford, D. K., & Ennis, R. P. (2018). Historical examination of United States intentional mass school shootings in the 20th and 21st centuries: Implications for students, schools, and society. <i>Journal of Child & Family Studies</i> , 27(8), 2562–2573. https://doi.org/10.1007/s10826-018-1096-2
14	Kiilakoski, T., & Oksanen, A. (2011). Cultural and peer influences on homicidal violence: A Finnish perspective. <i>New Directions for Youth Development</i> , 129. https://doi.org/10.1002/yd.385
15	Langman, P. (2009). Rampage school shooters: A typology. <i>Aggression and Violent Behavior</i> , 14, 79-86. https://doi.org/10.1016/j.avb.2008.10.003

15	Lankford, A. (2013). A comparative analysis of suicide terrorists and rampage, workplace, and school shooters in the United States from 1990 to 2010. <i>Homicide Studies</i> , 17(3), 255–274. https://doi.org/10.1177/1088767912462033
15	Lawrence, R., & Mueller, D. (2003). School shootings and the man-bites-dog criterion of newsworthiness. <i>Youth Violence and Juvenile Justice</i> , 1(4), 330–345. https://doi.org/10.1177/1541204003255842
16	Leary, M.R., Kowalski, R.M., Smith, L. and Phillips, S. (2003). Teasing, rejection, and violence: Case studies of the school shootings. <i>Aggressive Behavior</i> , 29, 202-214. https://doi.org/10.1002/ab.10061
16	Levin, J., & Madfis, E. (2009). Mass murder at school and cumulative strain: A sequential model. <i>American Behavioral Scientist</i> , 52(9), 1227–1245. https://doi.org/10.1177/0002764209332543
16	Lindberg, N., Sailas, E., & Kaltiala-Heino, R. (2012). The copycat phenomenon after two Finnish school shootings: An adolescent psychiatric perspective. <i>BMC Psychiatry</i> , 12(1), 91–101. https://doi.org/10.1186/1471-244X-12-91
17	Livingston, M. D., Rossheim, M. E., & Hall, K. S. (2019). A descriptive analysis of school and school shooter characteristics and the severity of school shootings in the United States, 1999–2018. <i>Journal of Adolescent Health</i> , 64(6), 797–799. https://doi.org/10.1016/j.jadohealth.2018.12.006
17	Madfis, E. (2017). In search of meaning: Are school rampage shootings random and senseless violence?, <i>The Journal of Psychology</i> , 151(1), 21-35. https://doi.org/10.1080/00223980.2016.1196161
18	Markey, P. M., Ivory, J. D., Slotter, E. B., Oliver, M. B., & Maglalang, O. (2019). He does not look like video games made him do it: Racial stereotypes and school shootings. <i>Psychology of Popular Media Culture</i> . http://dx.doi.org/10.1037/ppm0000255
18	Meloy, J. R., Hempel, L. A. G., Mohandie, K., Shiva, A. A., & Gray, B. T. (2001). Offender and offense characteristics of a nonrandom sample of adolescent mass murderers. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 40(6), 719-728. https://doi.org/10.1097/00004583-200106000-00018
19	Meloy, J. R., Hoffmann, J., Roshdi, K., & Guldinmann, A. (2014). Some warning behaviors discriminate between school shooters and other students of concern. <i>Journal of Threat Assessment and Management</i> , 1(3), 203–211. https://doi.org/10.1037/tam0000020
19	Mulvey, E. P., & Cauffman, E. (2001). The inherent limits of predicting school violence. <i>American Psychologist</i> , 56(10), 797–802. https://doi.org/10.1037/0003-066X.56.10.797
19	Muschert, G. W. (2007). Research in school shootings. <i>Sociology Compass</i> , 1(1), 60–80. https://doi.org/10.1111/j.1751-9020.2007.00008.x

20	Musu, L., Zhang, A., Wang, K., Zhang, J., & Oudekerk, B.A. (2019). <i>Indicators of School Crime and Safety: 2018</i> (NCES 2019-047/NCJ 252571). National Center for Education Statistics, U.S. Department of Education, and Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice. Washington, DC. https://nces.ed.gov/pubs2019/2019047.pdf
20	National Research Council. (2003). <i>Deadly Lessons: Understanding lethal school violence</i> . Washington, DC: The National Academies Press. https://doi.org/10.17226/10370
21	National School Safety Center. (2010). The National School Safety Center's Report on School Associated Violent Deaths. http://www.schoolsafety.us
21	Nekvasil, E. K., Cornell, D. G., & Huang, F. L. (2015). Prevalence and offense characteristics of multiple casualty homicides: Are schools at higher risk than other locations? <i>Psychology of Violence, 5</i> (3), 236–245. https://doi.org/10.1037/a0038967
22	Newman, K. S. (2004). <i>Rampage: The social roots of school shootings</i> . Basic Books. https://doi.org/10.1086/502987
22	Paradice, D. (2017). An analysis of US school shooting data (1840-2015). <i>Education, 138</i> (2), 135–144. https://eric.ed.gov/?id=EJ1162452
22	Perkins, J., Perkins, H.W., & Craig, D. (2020). Norms and attitudes about being an active bystander: Support for telling adults about seeing knives or guns at school among Greater London youth. <i>Journal of Youth and Adolescence, 49</i> , 849-868. https://doi.org/10.1007/s10964-019-01127-7
23	Pontes, N. M. H., & Pontes, M. (2019). Additive interactions between school bullying victimization and gender on weapon carrying among U.S. high school students: Youth risk behavior survey 2009 to 2015. <i>Journal of Interpersonal Violence, 34</i> (1), 117-138. https://doi.org/10.1177/0886260519877945
23	Raitanen, J., & Oksanen, A. (2019). Deep interest in school shootings and online radicalization. <i>Journal of Threat Assessment and Management, 6</i> (3-4), 159–172. https://doi.org/10.1037/tam0000127
24	Rees, C. A., Lee, L. K., Flegler, E. W., & Mannix, R. (2019). Mass school shootings in the United States: A novel root cause analysis using lay press reports. <i>Clinical Pediatrics, 58</i> (13), 1423–1428. https://doi.org/10.1177/0009922819873650
24	Rocque, M. (2012). Exploring school rampage shootings: Research, theory, and policy. <i>The Social Science Journal, 49</i> , 304-313. https://doi.org/10.1016/j.soscij.2011.11.001
24	Shultz, J. M., Muschert, G. W., Dingwall, A., & Cohen, A. M. (2013). The Sandy Hook Elementary School shooting as tipping point. <i>Disaster Health, 1</i> (2), 65-73. https://doi.org/10.4161/dish.27113

25	Towers, S., Gomez-Lievano, A., Khan, M., Mubayi, A., & Castillo-Chavez, C. (2015). Contagion in mass killings and school shootings. <i>PLoS ONE</i> , 10(7), 1–12. https://doi.org/10.1371/journal.pone.0117259
25	Wang, K., Chen, Y., Zhang, J., and Oudekerk, B.A. (2020). <i>Indicators of School Crime and Safety: 2019</i> (NCES 2020-063/NCJ 254485). National Center for Education Statistics, U.S. Department of Education, and Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice. Washington, DC. https://nces.ed.gov/pubs2020/2020063.pdf
26	Whaley, A. L. (2020). The massacre mentality and school rampage shootings in the United States: Separating culture from psychopathology. <i>Journal of Community & Applied Social Psychology</i> , 30(1), 3-13. https://doi.org/10.1002/casp.2414
26	Wike, T. L. & Fraser, M. W. (2009). School shooting: Making sense of the senseless. <i>Aggression and Violent Behavior</i> , 14, 162-169. https://doi.org/10.1016/j.avb.2009.01.005

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References

Agnich, L.E. (2015). A comparative analysis of attempted and completed school-based mass murder attacks. *American Journal of Criminal Justice*, 40, 1–22 <https://doi.org/10.1007/s12103-014-9239-5>

“School shootings” are rarely studied quantitatively due to the fact that they are relatively rare, albeit powerful events. Therefore, prior research on “school shootings” typically relies on case study methodologies, or involves the use of typologies based on perpetrators’ motivations, their relationships to victims, and/or the total number of victims killed. However, not all cases of multiple-victim homicide attacks that take place in schools involve the use of firearms, and not all school-based multiple-victim homicide attacks result in multiple fatalities, as many such cases are either thwarted in advance by police or fail to result in the intended number of victims due to a variety of factors. The present study compares attempted and completed mass murder and rampage style attacks that have taken place at schools, and further compares incidents involving firearms to those that involve other deadly weapons. Utilizing a database of 282 identified cases of mass murder incidents in schools across 38 nations, incidents’ date and location, the demographic characteristics of perpetrators, weapons used, number of victims, and school contexts are examined and compared.

Anderson M., Kaufman J., Simon T.R., Barrios, L., Paulozzi, L., Ryan, G., Hammond, R., Modzeleski, W., Feucht, T., Potter, L., & the School-Associated Violent Deaths Study Group. (2001). School-associated violent deaths in the United States, 1994-1999. *Journal of the American Medical Association*, 286(21), 2695–2702. doi:10.1001/jama.286.21.2695

Context Despite the public alarm following a series of high-profile school shootings that occurred in the United States during the late 1990s, little is known about the actual incidence and characteristics of school-associated violent deaths.

Objective To describe recent trends and features of school-associated violent deaths in the United States.

Design, Setting, and Subjects Population-based surveillance study of data collected from media databases, state and local agencies, and police and school officials for July 1, 1994, through June 30, 1999. A case was defined as a homicide, suicide, legal intervention, or unintentional firearm-related death of a student or nonstudent in which the fatal injury occurred (1) on the campus of a public or private elementary or secondary school, (2) while the victim was on the way to or from such a school, or (3) while the victim was attending or traveling to or from an official school-sponsored event.

Main Outcome Measures National estimates of risk of school-associated violent death; national trends in school-associated violent deaths; common features of these events; and potential risk factors for perpetration and victimization.

Results Between 1994 and 1999, 220 events resulting in 253 deaths were identified; 202 events involved 1 death and 18 involved multiple deaths (median, 2 deaths per multiple-victim event). Of the 220 events, 172 were homicides, 30 were suicides, 11 were homicide-suicides, 5 were legal intervention deaths, and 2 were unintentional firearm-related deaths. Students accounted for 172 (68.0%) of these deaths, resulting in an estimated average annual incidence of 0.068 per 100 000 students. Between 1992

and 1999, the rate of single-victim student homicides decreased significantly ($P = .03$); however, homicide rates for students killed in multiple-victim events increased ($P = .047$). Most events occurred around the start of the school day, the lunch period, or the end of the school day. For 120 (54.5%) of the incidents, respondents reported that a note, threat, or other action potentially indicating risk for violence occurred prior to the event. Homicide offenders were more likely than homicide victims to have expressed some form of suicidal behavior prior to the event (odds ratio [OR], 6.96; 95% confidence interval [CI], 1.96-24.65) and been bullied by their peers (OR, 2.57; 95% CI, 1.12-5.92).

Conclusions Although school-associated violent deaths remain rare events, they have occurred often enough to allow for the detection of patterns and the identification of potential risk factors. This information may help schools respond to this problem.

Brock, M., Kriger, N., & Miro, R. (2018). *School Safety Policies and Programs Administered by the U.S. Federal Government 1990-2016*. National Institute of Justice, U.S. Department of Justice. <https://www.ncjrs.gov/pdffiles1/nij/grants/251517.pdf>

The following chapters discuss in greater detail the federal school safety programs, policies, research, and technical assistance resources for K–12 public schools—including public charter schools—administered by ED, the DOJ, and HHS since the early 1990s. Major interagency collaborations on school safety are described separately. For each program, the legislative background and the intent of the program’s congressional and executive branch architects are discussed. A brief implementation history of the program, including official statistics on the appropriations and grant awards since its inception, is also provided.

Brown, R. P., Osterman, L. L., & Barnes, C. D. (2009). School violence and the culture of honor. *Psychological Science*, 20(11), 1400–1405. <https://doi.org/10.1111/j.1467-9280.2009.02456.x>

We investigated the hypothesis that a socio- cultural variable known as the culture of honor would be uniquely predictive of school-violence indicators. Controlling for demographic characteristics associated in previous studies with violent crime among adults, we found that high-school students in culture-of-honor states were significantly more likely than high-school students in non- culture-of-honor states to report having brought a weapon to school in the past month. Using data aggregated over a 20-year period, we also found that culture-of-honor states had more than twice as many school shootings per capita as non-culture-of-honor states. The data revealed important differences between school violence and general patterns of homicide and are consistent with the view that many acts of school violence reflect retaliatory aggression springing from intensely experienced social-identity threats.

Centers for Disease Control and Prevention. (2001). Temporal variations in school-associated student homicide and suicide events -- United States, 1992-1999. *MMWR: Morbidity & Mortality Weekly Report*, 50(31), 657–660. <https://doi.org/10.1001/jama.286.10.1168>

Recent, widely reported violent deaths associated with schools have led many adults to believe that a school shooting could occur in their community and many children to express increasing concern about

their own safety at school. CDC, in collaboration with the U.S. Education and Justice departments, has been tracking school-associated violent deaths since the 1992-1993 school year. To evaluate whether the risk for school-associated violent death varies during the school year, CDC analyzed monthly counts of school-associated homicide and suicide events that occurred among students in elementary and secondary (middle, junior high, and senior high) schools in the United States. This report summarizes the results of these analyses, which indicate that student homicide event rates are usually highest near the start of the fall and spring semesters, and suicide event rates are highest during the spring semester. These findings can assist school personnel in planning and implementing violence-prevention programs.

Centers for Disease Control and Prevention. (2008). School-associated student homicides -- United States, 1992-2006. *MMWR: Morbidity & Mortality Weekly Report*, 57(2), 33–36.
<https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5702a1.htm>

School-associated student homicide events, especially those involving multiple victims, generate considerable media attention, prompting questions regarding whether rates of school-associated violent deaths are increasing and regarding the characteristics of such events. During the 1990s, the rate of school-associated single-victim student homicides decreased significantly, whereas rates for school associated homicides in which two or more students were killed (i.e., multiple-victim homicides) increased (1). Additional studies of such events during the same decade documented the rarity of lethal school-associated violence (2,3). To 1) update temporal trends in rates for school associated student homicides during July 1992-June 2006 and 2) describe the epidemiologic characteristics of school associated student homicides that occurred during July 1999-June 2006 (the period for which the most recent data are available), CDC analyzed data from the School Associated Violent Death (SAVD) study. This report describes the results of that analysis, which indicated that rates of school-associated student homicides decreased during the overall period, July 1992-June 2006, but stabilized during July 1999-June 2006, when 116 students were killed in 109 school-associated homicide events. Although school-associated student homicides are rare and represent approximately 1% of homicides that occur among school age youths, schools should expand use of comprehensive measures to prevent behaviors that often precede fatal violence. In addition, comprehensive approaches that address risk factors and protective risk factors for violence at the individual, family, school, and community levels will help address violence both on and off school grounds.

Daniels, J. A. (2019). *A preliminary report on the Police Foundation's Averted School Violence Database*. Washington, DC: Office of Community Oriented Policing Services.

In this report, 51 averted incidents of school violence, a sample drawn from the Averted School Violence (ASV) database, were analyzed to help further our understanding of averted school attacks. The ASV project defines an incident of averted school violence as a violent attack planned with or without the use of a firearm that was prevented either before or after the potential perpetrator arrived on school grounds but before any injury or loss of life occurred. The 51 averted attacks do not constitute every incident of school violence that has occurred in the United States since April 20, 1999, nor do they constitute a representative sample. Rather, averted attacks (those that were identified from open sources) were selected based on the amount of information available in open sources and with an effort made to find reports in a wide range of states.

Donohue, E., Schiraldi, V., & Ziedenberg, J. (1998). *School house hype: School shootings and the real risks kids face in America*. Justice Policy Institution, Washington, DC.
<https://files.eric.ed.gov/fulltext/ED448226.pdf>

This report examines risks that children and youth face in America's schools to determine whether there is a trend toward increasing violent school deaths in America and noting the overall incidence of crime, particularly homicides, inside versus outside of the schools. Data come from the Department of Education, Department of Justice, FBI, Centers for Disease Control and Prevention, National School Safety Center, National Safe Kids Campaign, Office of Juvenile Justice and Delinquency Prevention, Center To Prevent Handgun Violence, Bureau of Justice Statistics, and newspaper clippings (to obtain school-related violence data). Results indicate that recent school shootings were extremely idiosyncratic events and not part of any trend. The likelihood of becoming a victim of school-associated violent death is less than one in one million. While most children killed by guns are killed by adults, children are killed in gun accidents at 23 times the rate they are killed in schools. American children are 12 times more likely to die from guns than children in 25 other industrialized countries. The paper recommends channeling public energy into removing guns from children and adults and providing constructive opportunities for children during peak crime hours (after school programs and restriction on mass gun sales).

Erlandsson, A. & Meloy, J. R. (2018). The Swedish school attack in Trollhattan. *Journal of Forensic Sciences*, 63(6), 1917-1927. <https://doi.org/10.1111/1556-4029.13800>

This is a case report of the offender and offense characteristics of a targeted attack on a Swedish school using a sword, with a particular focus upon the offender's history, the relationship between mental disorder and ideology, and whether or not it was an act of terrorism. Findings indicate that the offender had no drug or psychiatric treatment history, but post offense analysis suggests autism spectrum disorder, depression, and both suicidal ideation and intent. The offender planned and prepared for his attack, and the triggering event appeared to be the loss of a temporary job. He expressed chronic anger concerning immigrants to Sweden and blamed them for his failures. Comparison of the fact pattern to other cases of lone actor terrorism with the Terrorist Radicalization Assessment Protocol (TRAP-18) empirically demonstrates excellent criterion validity with other lone actor terrorists in Europe and North America—including right wing extremists—and contributes to further understanding of ideologically motivated mass murder.

Farr, K. (2010). Trouble with the other: The role of romantic rejection in rampage school shootings by adolescent males. *Violence and Gender*, 6(3), 147-153. <http://doi.org/10.1089/vio.2018.0046>

This research considers the role of romantic rejections in rampage school shootings by adolescent males. Examined were the arguments that these young shooters understand such rejections as one of many undeserved humiliations that have damaged their gender credibility and thus their school social status; and that the norms of a traditional masculinity insisting on the repudiation of feminine emotionality constrain them from expressing sadness or vulnerability over the rejection. Fifteen of the 29 adolescent shooters in the study sample had experienced romantic rejection in the period leading up to their rampage. Overall, their reactions to such rejection affirmed the above arguments. The rejected shooters

reacted with growing anger to what they perceived as these gendered injustices; at the same time, they typically suppressed any public display of feminine emotionality in response to the hurtful experience of rejection. While they commonly threatened and derided their rejecter(s), with the exception of one case, they reserved their physical violence, including shooting, for male peers whom they thought were a factor in their breakup or who had emasculated them through bullying. Suggestions for intervention and prevention based on the study findings are offered.

Ferguson, C. J. (2008). The school shooting/violent video game link: causal relationship or moral panic? *Journal of Investigative Psychology & Offender Profiling*, 5(1/2), 25–37.
<https://doi.org/10.1002/jip.76>

In the last 10 years, following the incidence of serious acts of school violence—particularly multiple homicides on school campuses—much attention has focused on the potential causal role of violent video game exposure. Some scholars have attempted to draw links between laboratory and correlational research on video game playing and school shooting incidents. This paper argues that such claims are faulty and fail to acknowledge the significant methodological and constructional divides between existing video game research and acts of serious aggression and violence. It is concluded that no significant relationship between violent video game exposure and school shooting incidents has been demonstrated in the existing scientific literature, and that data from real world violence call such a link into question.

Fox, J. A., & DeLateur, M. J. (2014). Mass shootings in America: Moving beyond Newtown. *Homicide Studies*, 18(1), 125–145. <https://doi.org/10.1177/1088767913510297>

Mass shootings at a Connecticut elementary school, a Colorado movie theater, and other venues have prompted a fair number of proposals for change. Advocates for tighter gun restrictions, for expanding mental health services, for upgrading security in public places, and, even, for controlling violent entertainment have made certain assumptions about the nature of mass murder that are not necessarily valid. This article examines a variety of myths and misconceptions about multiple homicide and mass shooters, pointing out some of the difficult realities in trying to avert these murderous rampages. While many of the policy proposals are worthwhile in general, their prospects for reducing the risk of mass murder are limited.

Fridel, E. F. (2019). The contextual correlates of school shootings. *Justice Quarterly*.
<https://doi.org/10.1080/07418825.2019.1666907>

Research on school shootings remains limited, focusing primarily on individual-level risk factors, contagion, and prevention. The community effects literature on homicide and exposure to violence, however, suggests that contextual correlates also play an important role. This study examines whether macro-environmental characteristics impact the odds of a school district experiencing a shooting. A penalized maximum likelihood logistic regression model was used to compare 253 school districts in the United States that experienced at least one shooting from the 1998/1999 to 2017/2018 school years to the 13,201 that did not. Results indicate that districts with high enrollments and expenditures and greater

levels of disadvantage and violent crime are at a higher risk for a school shooting. School shootings share similar macro- level contextual risk factors with other types of violent crime. Researchers should account for the context in which a school shooting occurs to avoid inflating the influence of individual- level risk factors.

Fritzon, K. & Brun, A. (2005). Beyond Columbine: A faceted model of school-associated homicide. *Psychology, Crime, & Law*, 11(1), 53-71. <https://doi.org/10.1080/1068316042000209314>

The current paper applies action systems theory to the phenomenon of school violence perpetrated by children. This framework has been recently applied to understanding other forms of criminal behaviour and was hypothesised to be appropriate for understanding the function of aggression and interaction in school homicides. The data for the study consisted of 93 school-associated violent deaths occurring in North America between 1992 and 1999. Content analysis of these cases produced a set of 29 variables relating to perpetrator actions. In order to test the action systems hypotheses, a Smallest Space Analysis (SSA) was performed. The plot was partitioned according to an angular facet reflecting four modes of interaction, in the spatial order predicted by the model. Additionally, a radial facet was found that was interpreted as reflecting the offender's attempts to attain or preserve their sense of power. These results have implications both for understanding the motives and functions of violent behaviour in schools, as well as offering suggestions for interventions targeted at modifying this behaviour.

Gerard, F. J., Whitfield, K. C., Porter, L. E., & Browne, K. D. (2016). Offender and offence characteristics of school shooting incidents. *Journal of Investigative Psychology & Offender Profiling*, 13(1), 22–38. <https://doi.org/10.1002/jip.1439>

School shootings are a concern due to their impact in the local community. This paper aimed to (a) establish frequent characteristics of the offender and offence, (b) explore the differences between offenders who are over the age of 18 years and those who are younger, and (c) consider the underlying themes of the offence characteristics. Data were collected on 28 cases through accessing resources such as West Law and case studies. The majority of the offenders were Caucasian and US citizens and suffered from depression. Their offences were primarily well planned, involved more than three deaths, and resulted in the offender committing suicide. Pearson's chi-square test and Fisher's exact test identified significant differences between the two age groups. Offenders who were 18 years of age or under were more likely to experience depression, be US citizens and be linked to the school. Additionally, offenders who were 18 years of age or under were more likely to have stolen their weapons and made threats prior to the incident. Smallest space analysis revealed four thematic regions in relation to the offence characteristics: making an impact, delivering a message, doing unrestrained activity, and targeting specific individuals. These findings have implications for risk assessment and furthering understanding.

Government Accountability Office, K-12 Education: Characteristics of school shootings, GAO-20-455 (Washington, D.C.: June 2020). <https://www.gao.gov/assets/710/707469.pdf>

In addition to the potential loss of life, school shootings can evoke feelings of profound fear and anxiety that disturb a community's sense of safety and security. Questions have been raised about whether schools' approaches to addressing student behavior are a factor in school shootings. These approaches include discipline that removes the offending students from the classroom or school, and preventative approaches meant to change student behaviors before problems arise. GAO was asked to examine school shootings, including the link between discipline and shootings. This report examines 1) the characteristics of school shootings and affected schools, and 2) what is known about the link between discipline and school shootings. To do so, GAO analyzed data on school shootings and school characteristics for school years 2009-10 through 2018-19; and conducted a literature review to identify empirical research from 2009 to 2019 that examined discipline approaches in school, and the effects of these approaches on outcomes of school gun violence, school violence, or school safety. GAO also interviewed selected researchers to gather perspectives about challenges and limitations in conducting research on school discipline and school shootings.

Hall, R.C. W., Friedman, S. H., Sorrentino, R., Lapchenko, M., Marcus, A., & Ellis, R. (2019). The myth of school shooters and psychotropic medications. *Behavioral Sciences and the Law*, 37, 540-558. <https://doi.org/10.1002/bsl.2429>

There has been an assertion in certain parts of the media, especially social media, that the majority of individuals who have engaged in a school shooting were prescribed psychotropic medications prior to the event. To determine if there is any validity to this assertion, the authors of this article reviewed publicly available information regarding individuals involved in "educational shootings" per FBI publications for active shooters from 2000 to 2017. Sources of information included news reports with official citations, official reports regarding events, available court records, and FBI Freedom of Information Act requests. Secondary data points were also collected, such as location, number of weapons used, number of victims, legal outcome, and whether the shooter committed suicide. From the information obtained, it appears that most school shooters were not previously treated with psychotropic medications – and even when they were, no direct or causal association was found.

Holland, K. M., Hall, J. E., Jing Wang, Gaylor, E. M., Johnson, L. L., Shelby, D., Simon, T. R., Wang, J., & the School-Associated Violent Deaths Study Group. (2019). Characteristics of school-associated youth homicides - United States, 1994-2018. *Morbidity & Mortality Weekly Report*, 68(3), 53–60. <https://doi.org/10.15585/mmwr.mm6803a1>

To understand trends and characteristics in school-associated homicides involving youths, data from CDC's School-Associated Violent Death Surveillance System were analyzed for 393 single-victim incidents that occurred during July 1994–June 2016 and 38 multiple-victim incidents (resulting in 121 youth homicides) during July 1994–June 2018. School-associated homicides consistently represent <2% of all youth homicides in the United States (1,2). The overall 22-year trend for single-victim homicide rates did not change significantly. However, multiple-victim incidence rates increased significantly from July 2009 to June 2018. Many school-associated homicides, particularly single-victim incidents, are

similar to youth homicides unrelated to schools, often involving male, racial/ethnic minority youth victims, and occurring in urban settings. The majority of both single-victim (62.8%) and multiple-victim (95.0%) homicides were from a firearm-related injury. A comprehensive approach to violence prevention is needed to reduce risk for violence on and off school grounds.

JeeHae H. L. (2013). School shootings in the U.S. public schools: Analysis through the eyes of an educator. *Review of Higher Education & Self-Learning*, 6(22), 88–119.

School shooting is a topic of intense interest in the United States. Since the year 2010, there have been approximately 54 school shooting incidents in the United States. Naturally parents, educators, and students are concerned about their school's safety, especially the safety against the school shooting. Interestingly, however, there has not been enough research conducted in the area of school shootings. Although there are a lot of news articles about them, there is a lack of scholarly work that attempts to analyze the school shootings in the United States, especially in the perspective of an educator. Therefore, the purpose of this research study is to find trends and patterns of school shootings in the United States from an educator's perspective. In order to do so, the researcher examines the school shootings that occurred from the 1760s to 2013 and analyzes the total of 593 school shootings in the eyes of an educator. The frequency of school shootings has gradually increased since the 1760s and drastically increased after the 1980s. The researcher poses a research question, "What are the trends and patterns of the U.S. school shootings?" By answering this question, the researcher attempts to discuss what the trends and patterns mean in the field of education. The significance of this study is that the findings and discussions of this research will, first, increase the awareness of the danger of school shootings among teachers, parents, students, school administrators and teacher educators; second, will answer some questions that the aforementioned individuals may have regarding school shootings; and third, will help them understand the roles they can play in order to keep the schools safe from school shootings. This study is a literature-based research and uses an inductive analysis. In the beginning of the study, the researcher examines the total 593 school shootings in the United States. From this examination, the researcher attempts to look for trends and patterns of the U.S. school shootings, such as characteristics of perpetrators (e.g., characterization, identification, age, gender, and interest in violence), conceptualization of the attack, cause (e.g., bullying and psychiatric drugs), history of the U.S. school shootings, weapons (e.g., access to weapon and most commonly used weapon), characteristics of target and victim, time of school shooting, duration of the attack, and resolving the attack. Identifying various trends and patterns serves as basis for the inductive analysis. After identifying trends and patterns of U.S. school shootings, the researcher makes a general statement about the U.S. school shootings summarizing the overall trends and patterns of the U.S. school shootings. Based on this inductive analysis of data collected from various literatures, the researcher, then, carefully discusses what the findings mean to educators in the U.S. public school systems under the discussions and the implications of these findings. The researcher would like to emphasize that this analysis of the U.S. school shootings is conducted in an educator's perspective. Thus the discussions and implications target Grades K-12 teachers, parents, students, school administrators, teacher educators, and other supportive faculty and staff in the educational field. The researcher explores possibilities of what parents, students and educators can do to change the pattern of the U.S. school shootings and what roles they can play in order to keep the U.S. public schools safer for teaching and learning. Furthermore, the researcher discusses about the need of teachers' self-defense training as a new addition to the professional development for teachers. She also discusses the possibility of partnership between the school and the

church in order to be more responsive and attentive to the emotional needs of students. In addition, developing threat assessment, gun control issues, parental control of movies with gun violence are discussed as well.

Kalish, R. & Kimmel, M. (2010). Suicide by mass murder: Masculinity, aggrieved entitlement, and rampage school shootings. *Health Sociology Review*, 19(4), 451-464.
<https://doi.org/10.5172/hesr.2010.19.4.451>

School shootings have become more common in the United States in recent years. Yet, as media portrayals of these ‘rampages’ shock the public, the characterisation of this violence obscures an important point: many of these crimes culminate in suicide, and they are almost universally committed by males. We examine three recent American cases, which involve suicide, to elucidate how the culture of hegemonic masculinity in the US creates a sense of aggrieved entitlement conducive to violence. This sense of entitlement simultaneously frames suicide as an appropriate, instrumental behaviour for these males to underscore their violent enactment of masculinity.

Katsiyannis, A., Whitford, D. K., & Ennis, R. P. (2018). Historical examination of United States intentional mass school shootings in the 20th and 21st centuries: Implications for students, schools, and society. *Journal of Child & Family Studies*, 27(8), 2562–2573.
<https://doi.org/10.1007/s10826-018-1096-2>

The deadliest U.S. school shooting to date, occurring on February 14, 2018 at Marjory Stoneman Douglas High School in Parkland, Florida serves as a powerful reminder that school violence is ever present. Addressing school violence, however, has been an elusive endeavor. The purpose of this review is to provide a historical examination of United States intentional mass school shootings in the 20th and 21st centuries. In addition, implications for students, schools, and society are discussed in light of policy and legislative initiatives as well as school-based prevention and intervention tiered models of support, such as positive behavior interventions and supports (PBIS).

Kiilakoski, T., & Oksanen, A. (2011). Cultural and peer influences on homicidal violence: A Finnish perspective. *New Directions for Youth Development*, 129. <https://doi.org/10.1002/yd.385>

In this article, we consider the cultural and peer influences on homicidal violence by closely examining the Jokela and Kauhajoki school shootings. We also make some references to the earlier Raumanmeri case. Pre-investigation reports by the Finnish police and the reports by the government commissions created to investigate the shootings provided background material. The police reports include descriptions of the events, previous behavior by the offender that can be linked to the shootings, and transcribed inter-views of the eyewitnesses and other people involved.

Langman, P. (2009). Rampage school shooters: A typology. *Aggression and Violent Behavior, 14*, 79-86. <https://doi.org/10.1016/j.avb.2008.10.003>

A number of researchers have sought to identify the features that school shooters have in common in terms of family life, personalities, histories, and behaviors. This article examines the cases of 10 rampage school- shooters in an effort to find out not only how they are alike, but also how they differ. Based on available information, these youths are categorized into three types: traumatized, psychotic, and psychopathic. Out of the 10 shooters discussed, three were traumatized, five were psychotic, and two were psychopathic. The three traumatized shooters all came from broken homes with parental substance abuse and parental criminal behavior. They all were physically abused and two were sexually abused outside of the home. The five psychotic shooters had schizophrenia-spectrum disorders, including schizophrenia and schizotypal personality disorder. They all came from intact families with no history of abuse. The two psychopathic shooters were neither abused nor psychotic. They demonstrated narcissism, a lack of empathy, a lack of conscience, and sadistic behavior. Most people who are traumatized, psychotic, and psychopathic do not commit murder. Beyond identifying the three types of rampage shooters, additional factors are explored that may have contributed to the attacks. These include family structure, role models, and peer influence.

Lankford, A. (2013). A comparative analysis of suicide terrorists and rampage, workplace, and school shooters in the United States from 1990 to 2010. *Homicide Studies, 17*(3), 255–274. <https://doi.org/10.1177/1088767912462033>

This study presents results from the first combined quantitative assessment and comparative analysis of suicide terrorists and rampage, workplace, and school shooters who attempt suicide. Findings suggest that in the United States from 1990 to 2010, the differences between these offenders ($N = 81$) were largely superficial. Prior to their attacks, they struggled with many of the same personal problems, including social marginalization, family problems, work or school problems, and precipitating crisis events. Ultimately, patterns among all four types of offenders can assist those developing security policy, conducting threat assessments, and attempting to intervene in the lives of at-risk individuals.

Lawrence, R., & Mueller, D. (2003). School shootings and the man-bites-dog criterion of newsworthiness. *Youth Violence and Juvenile Justice, 1*(4), 330–345. <https://doi.org/10.1177/1541204003255842>

School shootings have received considerable media attention in recent years. These widely publicized crimes have provoked fear among parents, school staff, and the public at large despite data indicating that school violence has not significantly increased. This article examines the ways in which school shootings are depicted in the media and contrasts these images with official sources of juvenile crime data. The findings indicate that media reports of school shootings lead to grossly distorted perceptions of the potential for victimization. Recommendations are offered to help provide more accurate and balanced coverage of these tragic events.

Leary, M.R., Kowalski, R.M., Smith, L. and Phillips, S. (2003). Teasing, rejection, and violence: Case studies of the school shootings. *Aggressive Behavior*, 29, 202-214.
<https://doi.org/10.1002/ab.10061>

Media commentators have suggested that recent school shootings were precipitated by social rejection, but no empirical research has examined this claim. Case studies were conducted of 15 school shootings between 1995 and 2001 to examine the possible role of social rejection in school violence. Acute or chronic rejection—in the form of ostracism, bullying, and/or romantic rejection—was present in all but two of the incidents. In addition, the shooters tended to be characterized by one or more of three other risk factors—an interest in firearms or bombs, a fascination with death or Satanism, or psychological problems involving depression, impulse control, or sadistic tendencies. Implications for understanding and preventing school violence are discussed.

Levin, J., & Madfis, E. (2009). Mass murder at school and cumulative strain: A sequential model. *American Behavioral Scientist*, 52(9), 1227–1245. <https://doi.org/10.1177/0002764209332543>

To explain the genesis of mass murder committed by students at their schools, the authors propose a five-stage sequential model in which several criminological theories (strain theory, control theory, and routine activities theory) are brought to bear collectively to demonstrate their cumulative effect. These stages are as follows: chronic strain, uncontrolled strain, acute strain, the planning stage, and the massacre. Long- term frustrations (chronic strains) experienced early in life or in adolescence lead to social isolation, and the resultant lack of prosocial support systems (uncontrolled strain) in turn allows a short-term negative event (acute strain), be it real or imagined, to be particularly devastating. As such, the acute strain initiates a planning stage, wherein a mass killing is fantasized about as a masculine solution to regain lost feelings of control, and actions are taken to ensure the fantasy can become reality. The planning process concludes in a massacre facilitated by weapons that enable mass destruction in schoolrooms and campuses, where students are closely packed together. Based on this analysis, prevention strategies are suggested.

Lindberg, N., Sailas, E., & Kaltiala-Heino, R. (2012). The copycat phenomenon after two Finnish school shootings: An adolescent psychiatric perspective. *BMC Psychiatry*, 12(1), 91–101.
<https://doi.org/10.1186/1471-244X-12-91>

Background: Two school shootings with altogether 18 victims took place in Finland in November 2007 and September 2008. Homicides and suicides are both associated with the copycat phenomenon. The aim of the present study was to characterize adolescent copycats who had threatened to carry out a school massacre.

Methods: The nation-wide study evaluated 77 13- to 18-year-old adolescents who were sent for adolescent psychiatric evaluations between 8.11.2007 and 30.6.2009, one of the reasons for evaluation being a threat of massacre at school. The medical files of the copycats were retrospectively analysed using a special data collection form. Data on demographics, family- and school-related issues, previous psychiatric treatment and previous delinquency, current symptoms, family adversities and psychiatric diagnoses were collected. The severity of the threat expressed and the risk posed by the adolescent in

question were evaluated. The Psychopathy Checklist Youth Version was used to assess psychopathic traits.

Results: All of the copycats were native Finns with a mean age of 15.0 years. Almost two thirds of them had a history of previous mental health treatment before the index threat. Almost two thirds of the copycats suffered from anxiety and depressive symptoms, and almost half of the sample expressed either suicidal ideation or suicidal plans. Behavioural problems including impulse control problems, aggressive outbursts, the destruction of property as well as non-physical and physical violence against other persons were common. The diagnosis groups highlighted were behavioural and emotional disorders, mood disorders as well as schizophrenia-related disorders. The prevalence of pervasive developmental disorders was high. Only one of the copycats was assessed as expressing high traits of psychopathy.

Conclusion: The copycats with school massacre threats were characterized with a high prevalence of mental and behavioural disorders. Like actual school shooters, they showed psychotic symptoms and traumatic experiences, but unlike the shooters, the copycats were not psychopathic.

Livingston, M. D., Rossheim, M. E., & Hall, K. S. (2019). A descriptive analysis of school and school shooter characteristics and the severity of school shootings in the United States, 1999–2018. *Journal of Adolescent Health, 64*(6), 797–799. <https://doi.org/10.1016/j.jadohealth.2018.12.006>

Purpose The aim of the study was to determine whether characteristics related to the school, shooter, and guns used are associated with school shooting severity (casualty rates, fatality rates, and likelihood of fatality).

Methods We analyzed associations between individual-, school-, gun-level factors and school shooting severity in the United States from April 1999 through May 2018.

Results Handguns were used in most school shootings (81%); however, substantially, more fatalities occurred when rifles (relative risk [RR] =14.74, 95% confidence interval [CI] [5.00, 43.41]) or shotguns (RR = 8.84, 95% CI [2.20, 35.54]) were used. Fatal shootings were more likely to happen in schools that were majority white, taught younger students, and were rural or suburban. When shooters were aged ≥ 20 years, shootings were more likely to be fatal (RR = 2.44, 95% CI [1.18, 5.07]), have more casualties (RR = 5.15, 95% CI [2.06, 12.90]), and more deaths (RR = 20.13, 95% CI [4.86, 83.28]). No significant differences were observed based on the presence of resource officers.

Conclusions More severe shootings were associated with shooters who were older and therefore unlikely to be students, whereas the presence of a school resource officer was unassociated with any reduction in school shooting severity. Importantly, the type of gun used was strongly associated with casualties and fatalities. Study findings suggest a need for prevention efforts beyond those commonly used in schools, as well as the need for improved laws.

Madfis, E. (2017). In search of meaning: Are school rampage shootings random and senseless violence?, *The Journal of Psychology, 151*(1), 21-35. <https://doi.org/10.1080/00223980.2016.1196161>

This article discusses Joel Best's (1999) notion of random violence and applies his concepts of pointlessness, patternlessness, and deterioration to the reality about multiple-victim school shootings gleaned from empirical research about the phenomenon. Best describes how violence is rarely random, as scholarship reveals myriad observable patterns, lots of discernable motives and causes, and often far

too much fear-mongering over how bad society is getting and how violent we are becoming. In contrast, it is vital that the media, scholars, and the public better understand crime patterns, criminal motivations, and the causes of fluctuating crime rates. As an effort toward such progress, this article reviews the academic literature on school rampage shootings and explores the extent to which these attacks are and are not random acts of violence.

Markey, P. M., Ivory, J. D., Slotter, E. B., Oliver, M. B., & Maglalang, O. (2019). He does not look like video games made him do it: Racial stereotypes and school shootings. *Psychology of Popular Media Culture*. <http://dx.doi.org/10.1037/ppm0000255>

Despite a lack of research linking school shootings to video games, video games are frequently associated with school shootings carried out by White perpetrators. Because there is a stereotypical association between racial minorities and violent crime, it is possible that people often look toward video games as a cause for school shootings committed by White perpetrators who do not fit this stereotype. Consistent with this notion, Study 1 ($n = 169$) found that participants who read a mock news story about a school shooting were more likely to blame video games when the shooter was White than when the shooter was Black. Study 2 examined 204,796 news stories of 204 mass shootings committed in the United States and found that, when a shooting occurred at a school, video games were 8.35 times more likely to be discussed when the shooter was White than when the shooter was Black.

Meloy, J. R., Hempel, L. A. G., Mohandie, K., Shiva, A. A., & Gray, B. T. (2001). Offender and offense characteristics of a nonrandom sample of adolescent mass murderers. *Journal of the American Academy of Child & Adolescent Psychiatry*, 40(6), 719-728. <https://doi.org/10.1097/00004583-200106000-00018>

Objective: The authors conducted a descriptive, archival study of adolescent (≤ 19 years of age) mass murderers—subjects who intentionally killed three or more victims in one event—to identify demographic, clinical, and forensic characteristics.

Method: A nonrandom sample of convenience of adolescent mass murderers was utilized.

Results: Thirty-four subjects, acting alone or in pairs, committed 27 mass murders between 1958 and 1999. The sample consisted of males with a median age of 17. A majority were described as “loners” and abused alcohol or drugs; almost half were bullied by others, preoccupied with violent fantasy, and violent by history. Although 23% had a documented psychiatric history, only 6% were judged to have been psychotic at the time of the mass murder. Depressive symptoms and historical antisocial behaviors were predominant. There was a precipitating event in most cases—usually a perceived failure in love or school—and most subjects made threatening statements regarding the mass murder to third parties. The majority of the sample clustered into three types: the family annihilator, the classroom avenger, and the criminal opportunist.

Conclusions: The adolescent mass murderer is often predatorily rather than affectively violent and typically does not show any sudden or highly emotional warning signs. Although the act of mass murder is virtually impossible to predict because of its extremely low frequency, certain clinical and forensic findings can alert the clinician to the need for further, intensified primary care, including family, school, community, law enforcement, and mental health intervention.

Meloy, J. R., Hoffmann, J., Roshdi, K., & Guldemann, A. (2014). Some warning behaviors discriminate between school shooters and other students of concern. *Journal of Threat Assessment and Management*, 1(3), 203–211. <https://doi.org/10.1037/tam0000020>

A typology of 8 warning behaviors for targeted violence—dynamic and superordinate patterns which may indicate accelerating risk of violence—were tested in a small sample of German school shooters ($n = 9$) and students of concern ($n = 31$) to see if any warning behaviors would be significantly different between the groups. Five warning behaviors were found to occur with significantly greater frequency in the school shooters and discriminate between the samples: pathway, fixation, identification, novel aggression, and last resort. All effect sizes were large ($\phi > .50$). The findings are discussed in the context of school-shooting data from Germany and the United States and their implications for threat assessment.

Mulvey, E. P., & Cauffman, E. (2001). The inherent limits of predicting school violence. *American Psychologist*, 56(10), 797–802. <https://doi.org/10.1037/0003-066X.56.10.797>

The recent media hype over school shootings has led to demands for methods of identifying school shooters before they act. Despite the fact that schools remain one of the safest places for youths to be, schools are beginning to adopt identification systems to determine which students could be future killers. The methods used to accomplish this not only are unproven but are inherently limited in usefulness and often do more harm than good for both the children and the school setting. The authors' goals in the present article are to place school shootings in perspective relative to other risks of violence that children face and to provide a reasonable and scientifically defensible approach to improving the safety of schools.

Muschert, G. W. (2007). Research in school shootings. *Sociology Compass*, 1(1), 60–80. <https://doi.org/10.1111/j.1751-9020.2007.00008.x>

Studies of school shootings have been conducted in a variety of disciplines, including sociology, psychology, and media studies. However, to date there is no unified body of knowledge about such events. In an effort to synthesize past studies, and to orient future studies in school shootings, this article (i) offers a typology for understanding the varieties of school shooting incidents, including rampages, mass murders, terrorist attacks, targeted attacks, and government shootings; (ii) examines the mass media dynamic of school shootings; and (iii) presents a synthesis of the multilevel causes suggested in the research, including those on the individual, community, and social levels. Suggestions for future studies in school shootings are explored.

Musu, L., Zhang, A., Wang, K., Zhang, J., & Oudekerk, B.A. (2019). *Indicators of School Crime and Safety: 2018* (NCES 2019-047/NCJ 252571). National Center for Education Statistics, U.S. Department of Education, and Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice. Washington, DC. <https://nces.ed.gov/pubs2019/2019047.pdf>

This report is the 21st in a series of annual publications produced jointly by the National Center for Education Statistics (NCES), Institute of Education Sciences (IES), in the U.S. Department of Education, and the Bureau of Justice Statistics (BJS) in the U.S. Department of Justice. This report presents the most recent data available on school crime and student safety. The indicators in this report are based on information drawn from a variety of data sources, including national surveys of students, teachers, principals, and postsecondary institutions. Sources include results from the School-Associated Violent Death Surveillance System, sponsored by the U.S. Department of Education, the U.S. Department of Justice, and the Centers for Disease Control and Prevention (CDC); the National Vital Statistics System, sponsored by CDC; the National Crime Victimization Survey and School Crime Supplement to that survey, sponsored by BJS and NCES, respectively; the Youth Risk Behavior Survey, sponsored by CDC; the Schools and Staffing Survey, National Teacher and Principal Survey, School Survey on Crime and Safety, Fast Response Survey System, and *EDFacts*, all sponsored by NCES; the Studies of Active Shooter Incidents, sponsored by the Federal Bureau of Investigation; the Campus Safety and Security Survey, sponsored by the U.S. Department of Education; and the Monitoring the Future Survey, sponsored by the National Institute on Drug Abuse of the U.S. Department of Health and Human Services. The most recent data collection for each indicator varied by survey, from 2015 to 2017. Each data source has an independent sample design, data collection method, and questionnaire design, or is the result of a universe data collection. Findings described in this report with comparative language (e.g., higher, lower, increase, and decrease) are statistically significant at the .05 level. This report covers topics such as victimization, teacher injury, bullying and electronic bullying, school conditions, fights, weapons, availability and student use of drugs and alcohol, student perceptions of personal safety at school, and criminal incidents at postsecondary institutions. Indicators of crime and safety are compared across different population subgroups and over time. Data on crimes that occur away from school are offered as a point of comparison where available.

National Research Council. (2003). *Deadly Lessons: Understanding lethal school violence*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/10370>

The shooting at Columbine High School riveted national attention on violence in the nation's schools. This dramatic example signaled an implicit and growing fear that these events would continue to occur—and even escalate in scale and severity. How do we make sense of the tragedy of a school shooting or even draw objective conclusions from these incidents? *Deadly Lessons* is the outcome of the National Research Council's unique effort to glean lessons from six case studies of lethal student violence. These are powerful stories of parents and teachers and troubled youths, presenting the tragic complexity of the young shooter's social and personal circumstances in rich detail. The cases point to possible causes of violence and suggest where interventions may be most effective. Readers will come away with a better understanding of the potential threat, how violence might be prevented, and how healing might be promoted in affected communities.

National School Safety Center. (2010). The National School Safety Center's Report on School Associated Violent Deaths. <http://www.schoolsafety.us>

A school-associated violent death is any homicide, suicide, or weapons-related violent death in the United States in which the fatal injury occurred: (1) on the property of a functioning public, private or parochial elementary or secondary school, Kindergarten through grade 12, (including alternative schools); (2) on the way to or from regular sessions at such a school; (3) while person was attending or was on the way to or from an official school-sponsored event; and (4) as an obvious direct result of school incident/s, function/s or activities, whether on or off school bus/vehicle or school property. Newspaper accounts, on which the National School Safety Center (NSSC) bases this report, frequently do not list names and ages of those who are charged with the deaths of others. Such omissions were in some cases because the person charged was a minor. In some instances, persons were killed in drive-by shootings, gang encounters or during melees in which the killer was not identified, and the killers were either never apprehended or were caught days or months after the crime was first reported. As a result, more is known about victims than about perpetrators and therefore information in this report relates more to victims than to perpetrators. This report covers all reported school associated violent deaths that the National School Safety Center knows of from the 1992-1993 School year to present. For purposes of this study, the new school year begins on August 1st.

Nekvasil, E. K., Cornell, D. G., & Huang, F. L. (2015). Prevalence and offense characteristics of multiple casualty homicides: Are schools at higher risk than other locations? *Psychology of Violence*, 5(3), 236–245. <https://doi.org/10.1037/a0038967>

Objective: In light of public concern about school shootings, this study examined the prevalence and offense characteristics of multiple casualty homicides across locations.

Method: We used the FBI's National Incident Based Reporting System (NIBRS) to examine 18,873 homicide incidents involving 25,180 victims who were either killed or injured from 2005 through 2010.

Results: Multiple casualty homicides were surprisingly common events, with approximately 22% of homicide incidents involving 2 or more victims. Multiple casualty homicides were much more common in residences (47%) versus schools (0.8%), but homicides in residences tended to have 1 victim (78%) rather than multiple victims (22%), whereas homicides in schools were about equally likely to have 1 victim (57%) or multiple victims (43%). Multiple homicides were more likely to involve firearms than weapons such as knives or blunt objects. Finally, there were statistical differences in offense characteristics for homicides with 1, 2, and 3 victims.

Conclusion: These findings suggest that the public perception that schools are a high-risk location for homicides is inaccurate. Although concern about school shootings is understandable, the larger problem of multiple casualty shootings is more common in other locations which do not receive comparable media attention.

Newman, K. S. (2004). *Rampage: The social roots of school shootings*. Basic Books.
<https://doi.org/10.1086/502987>

In the late 1990s, Americans watched in horror as a wave of mass shootings on middle and high school campuses swept across the country. Banner headlines and terrifying photos screamed from the front pages of the nation's dailies. Round-the-clock television coverage broadcast images of distraught teenagers huddled in the hallways, anguished parents weeping behind police lines, ambulance gurneys wheeling the dead and injured from playgrounds to emergency rooms, and grave stones rising. This book is based on interviews with 163 people in Heath and Westside (two communities who three years before had gone through the ordeal of a rampage shooting) along with neighboring communities, including families of the victims, students who were in the schools at the time of the shootings as well as current students who were not, teachers, administrators, lawyers, officials of the court, psychologists, newspaper and television reporters, and friends, family members, and fellow congregation members of the shooters. We reviewed the national and local news coverage of these two cases as well as the other rampage school shootings that have taken place in the past thirty years. The five of us used up many yellow legal pads sketching out and then refining the analyses we present here. This volume is the product of a complete team effort, from the early days of planning the research, to collecting and analyzing the data, all the way through the writing and rewriting of numerous drafts.

Paradice, D. (2017). An analysis of US school shooting data (1840-2015). *Education*, 138(2), 135–144.
<https://eric.ed.gov/?id=EJ1162452>

This paper describes the construction and descriptive analysis of a data set of United States school shooting events. Three hundred forty-three shooting events are included, spanning 175 years of United States educational history. All levels of US educational institution are included. Events are included when a firearm is discharged, regardless of whether an injury occurs. The analysis defines a mass shooting as an event in which four or more persons, excluding the shooter, are injured or killed. It defines a mass murder as an event in which four or more persons, excluding the shooter, are killed. The data reveals that US high schools are where most shooting events occur. Relatively speaking, there have been few mass murder events in US campuses, but they have occurred with much greater frequency in the last 50 years. In most cases, shootings are premeditated. No prescription related to firearms at educational institutions is made.

Perkins, J., Perkins, H.W., & Craig, D. (2020). Norms and attitudes about being an active bystander: Support for telling adults about seeing knives or guns at school among Greater London youth. *Journal of Youth and Adolescence*, 49, 849-868. <https://doi.org/10.1007/s10964-019-01127-7>

A detailed understanding of the factors associated with support among youth for reporting a knife or gun at school to an adult is essential to inform violence prevention initiatives. However, no studies have empirically assessed attitudes about support for reporting among secondary school students in Greater London nor perceived norms about such support among peers. Thus, this study explores whether students misperceive peer norms about support for telling adults about seeing weapons at school. Anonymous surveys were completed by 7401 youth (52% female; 43% White; mean age 11.8 years) in school years 4–11 in 45 school cohorts in a greater London borough between 2007 and 2012. Students

reported both personal support about reporting weapons to several categories of adults and whether they perceived most other students at their school to support reporting weapons to adults in each category. Most students (64–78% on average) in most cohorts personally thought that students should report seeing a weapon at school to head teachers, police/security guard, teachers/counselors, and parent/other adult relatives. However, 34–44% of students erroneously thought that the majority of their peers did not support reporting to these adults. Perceived norms predicted personal support for reporting, adjusting for the prevalence of actual support at one's school and other factors. Pervasive norm misperceptions about reporting may contribute to a less safe environment.

Pontes, N. M. H., & Pontes, M. (2019). Additive interactions between school bullying victimization and gender on weapon carrying among U.S. high school students: Youth risk behavior survey 2009 to 2015. *Journal of Interpersonal Violence*. <https://doi.org/10.1177/0886260519877945>

The recent increase in the number of school shootings in the United States is a great concern. Consistent with General Strain Theory, previous research suggests that high school students who perpetrate gun violence have often experienced bullying victimization. This research investigated the interaction between gender and school bullying victimization on gun carrying, weapon carrying, and weapon carrying at school. Estimates of additive interaction were reported as recommended by the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines and compared with the estimates of multiplicative interaction. Data were used from a nationally representative survey of 61,042 U.S. high school students. Secondary analysis of pooled cross-sectional data from the 2009, 2011, 2013, and 2015 Youth Risk Behavior Survey was done, using R to estimate interactive effects on an additive scale between male gender and school bullying victimization on weapon carrying. A significant association was found between school bullying victimization, and gun and weapon carrying. Estimates of additive interaction show that the relationship between school bullying victimization and gun or weapon carrying is significantly greater among males than females as predicted by General Strain Theory. School bullying victimization increases the rate of gun and weapon carrying among all students, and especially among male students. Most mass school shooters are male and most of them experience some form of bullying victimization. Consequently, bullying prevention is likely to be important in a national effort to reduce gun and weapon violence in U.S. schools. This research also illustrates why estimates of adjusted risk differences and additive interactions should be reported for interpersonal violence research.

Raitanen, J., & Oksanen, A. (2019). Deep interest in school shootings and online radicalization. *Journal of Threat Assessment and Management*, 6(3-4), 159–172. <https://doi.org/10.1037/tam0000127>

School shootings and terrorism attacks share many similarities, but these acts are often studied in separate research fields. Therefore, authors of studies on school shootings have not discussed radicalization of the perpetrators in depth, even though in terrorism studies radicalization is a highly researched theme. Online radicalization is even less studied in the school shooting context. Using opinion radicalization theory developed in terrorism studies, we analyzed online interviews (n = 22) with people deeply interested in school shootings. The analysis showed that people deeply interested in school shootings can be divided into three different groups based on the radicalness of their opinions toward school shootings: those with neutral opinions, sympathizers, and those interested in conducting a

massacre. Data also indicate that becoming deeply interested in school shootings seems to strengthen an individual's opinions more than it changes them. Research and risk assessment of school shootings should focus more on the radicalization process of school shooters, because it is also done in the area of terrorism studies. The results imply that online school shooting communities have unused potential in the prevention of school shootings.

Rees, C. A., Lee, L. K., Flegler, E. W., & Mannix, R. (2019). Mass school shootings in the United States: A novel root cause analysis using lay press reports. *Clinical Pediatrics*, 58(13), 1423–1428. <https://doi.org/10.1177/0009922819873650>

School shootings comprise a small proportion of childhood deaths from firearms; however, these shootings receive a disproportionately large share of media attention. We conducted a root cause analysis of 2 recent school shootings in the United States using lay press reports. We reviewed 1760 and analyzed 282 articles from the 10 most trusted news sources. We identified 356 factors associated with the school shootings. Policy-level factors, including a paucity of adequate legislation controlling firearm purchase and ownership, were the most common contributing factors to school shootings. Mental illness was a commonly cited person-level factor, and access to firearms in the home and availability of large-capacity firearms were commonly cited environmental factors. Novel approaches, including root cause analyses using lay media, can identify factors contributing to mass shootings. The policy, person, and environmental factors associated with these school shootings should be addressed as part of a multipronged effort to prevent future mass shootings.

Rocque, M. (2012). Exploring school rampage shootings: Research, theory, and policy. *The Social Science Journal*, 49, 304-313. <https://doi.org/10.1016/j.soscij.2011.11.001>

This paper examines US school rampage shootings, focusing on the period from the late 20th century to the present. School rampage shootings are thought to be distinct from other forms of violence because of the relatively safe rural setting in which most of these events occur, the lack of specified individual targets, and the number of deaths involved. While this type of violence seems to have spiked in the mid-1990s, school violence in general and school shootings in particular have occurred throughout the history of formal education. Research shows that certain elements of school rampage shootings are unique, while others do not distinguish them from more common forms of violence. For the most part, theory development is still nascent, with the most advanced explanations relying on psychological factors. Finally, interventions have generally been guided by situational crime prevention rather than theories about why violence occurs in school. This paper argues that more research is needed before firm policy conclusions can be made.

Shultz, J. M., Muschert, G. W., Dingwall, A., & Cohen, A. M. (2013). The Sandy Hook Elementary School shooting as tipping point. *Disaster Health*, 1(2), 65-73. <https://doi.org/10.4161/dish.27113>

Among rampage shooting massacres, the Sandy Hook elementary School shooting on December 14, 2012 galvanized public attention. In this Commentary we examine the features of this episode of gun

violence that has sparked strong reactions and energized discourse that may ultimately lead toward constructive solutions to diminish high rates of fire- arm deaths and injuries in the United States.

Towers, S., Gomez-Lievano, A., Khan, M., Mubayi, A., & Castillo-Chavez, C. (2015). Contagion in mass killings and school shootings. *PLoS ONE*, 10(7), 1–12.
<https://doi.org/10.1371/journal.pone.0117259>

Background: Several past studies have found that media reports of suicides and homicides appear to subsequently increase the incidence of similar events in the community, apparently due to the coverage planting the seeds of ideation in at-risk individuals to commit similar acts.

Methods: Here we explore whether or not contagion is evident in more high-profile incidents, such as school shootings and mass killings (incidents with four or more people killed). We fit a contagion model to recent data sets related to such incidents in the US, with terms that take into account the fact that a school shooting or mass murder may temporarily increase the probability of a similar event in the immediate future, by assuming an exponential decay in contagiousness after an event.

Conclusions: We find significant evidence that mass killings involving firearms are incited by similar events in the immediate past. On average, this temporary increase in probability lasts 13 days, and each incident incites at least 0.30 new incidents ($p = 0.0015$). We also find significant evidence of contagion in school shootings, for which an incident is contagious for an average of 13 days, and incites an average of at least 0.22 new incidents ($p = 0.0001$). All p -values are assessed based on a likelihood ratio test comparing the likelihood of a contagion model to that of a null model with no contagion. On average, mass killings involving firearms occur approximately every two weeks in the US, while school shootings occur on average monthly. We find that state prevalence of firearm ownership is significantly associated with the state incidence of mass killings with firearms, school shootings, and mass shootings.

Wang, K., Chen, Y., Zhang, J., and Oudekerk, B.A. (2020). *Indicators of School Crime and Safety: 2019* (NCES 2020-063/NCJ 254485). National Center for Education Statistics, U.S. Department of Education, and Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice. Washington, DC. <https://nces.ed.gov/pubs2020/2020063.pdf>

This report is the 22nd in a series of annual publications produced jointly by the National Center for Education Statistics (NCES), Institute of Education Sciences (IES), in the U.S. Department of Education, and the Bureau of Justice Statistics (BJS) in the U.S. Department of Justice. This report is released primarily as a web-based report, and contents of the report can be viewed at <https://nces.ed.gov/programs/crimeindicators/index.asp>. This report presents the most recent data available on school crime and student safety. The indicators in this report are based on information drawn from a variety of data sources, including national and international surveys of students, teachers, principals, and postsecondary institutions. Sources include results from the SchoolAssociated Violent Death Surveillance System, sponsored by the U.S. Department of Education, the U.S. Department of Justice, and the Centers for Disease Control and Prevention (CDC); the National Vital Statistics System, sponsored by CDC; the K-12 School Shooting Database, sponsored by the U.S. Department of Defense; the National Crime Victimization Survey and School Crime Supplement to that survey, sponsored by BJS and NCES, respectively; the Youth Risk Behavior Survey, sponsored by CDC; the School Survey on Crime and Safety, Fast Response Survey System, EDFacts, and Early Childhood Longitudinal Study, Kindergarten

Class of 2010–11, all sponsored by NCES; the Teaching and Learning International Survey, sponsored by the Organization for Economic Cooperation and Development; and the Campus Safety and Security Survey, sponsored by the U.S. Department of Education. The most recent data collection for each indicator varied by survey, from 2016 to 2019. Each data source has an independent sample design, data collection method, and questionnaire design, or is the result of a universe data collection. Findings described in this report with comparative language (e.g., higher, lower, increase, and decrease) are statistically significant at the .05 level. This report covers topics such as victimization, bullying and electronic bullying, school conditions, fights, weapons, availability and student use of drugs and alcohol, student perceptions of personal safety at school, and criminal incidents at postsecondary institutions. Indicators of crime and safety are compared across different population subgroups and over time. Data on crimes that occur away from school are offered as a point of comparison where available

Whaley, A. L. (2020). The massacre mentality and school rampage shootings in the United States: Separating culture from psychopathology. *Journal of Community & Applied Social Psychology*, 30(1), 3-13. <https://doi.org/10.1002/casp.2414>

School rampage shootings in the United States are becoming a common occurrence. The purpose of this article is place school rampage shooting in a broader cultural context. Specifically, in this article, I introduce the concept of the "massacre mentality" as a cultural manifestation of western and southern U.S. values. The massacre mentality is a state of mind in which the individual feels justified in committing indiscriminate killings in defense of honour, protection of property, assurance of absolute personal safety, or the elimination of challenges to the "natural order" from the perspective of the offender. A review of the social psychological literature will contrast the massacre mentality with related concepts of "culture of honour" and "sanctioned massacre." The relationship between street violence, another major form of violence, and the massacre mentality is also addressed. A cultural analysis suggests that interactions between individual psychology in the form of U.S. regional values and sociocultural context of schools contribute to school rampage shootings more often than mental illness. The prevention of school rampage shootings will require the identification of students predisposed to adopt the values contributing to the massacre mentality and challenging social hierarchies by restructuring the context of schools, as well as changing cultural norms in the broader society. The ultimate goal is to create a U.S. culture where the massacre mentality is obsolete.

Wike, T. L. & Fraser, M. W. (2009). School shooting: Making sense of the senseless. *Aggression and Violent Behavior*, 14, 162-169. <https://doi.org/10.1016/j.avb.2009.01.005>

School shootings have altered the patina of seclusion and safety that once characterized public and higher education. Callous and brutal, school shootings seem to make no sense. However, case comparisons and anecdotal reports are beginning to show patterns that provide clues for understanding both the individual factors motivating shooting events and the characteristics of schools where shootings have occurred. We describe these factors and characteristics as the bases for six prevention strategies: (a) strengthening school attachment, (b) reducing social aggression, (c) breaking down codes of silence, (d) establishing screening and intervention protocols for troubled and rejected students, (e) bolstering human and physical security, and (f) increasing communication within educational facilities and between educational facilities and local resources.