

Research Articles¹

We identified 39 publications reporting empirical research on school threat assessment and 40 separate publications reporting empirical research on school shootings. These include original research, such as descriptive, field, or controlled studies, or secondary research, such as literature reviews, and exclude conceptual or theoretical works. The publications include peer-reviewed, published articles, government/organization reports, books, and book chapters.

Original research in threat assessment included descriptive studies (49%), field studies (20%), controlled studies (18%), and literature reviews (13%). These studies variously examined implementation of a threat assessment model, the nature and prevalence of threats or the impact of threat assessment across student populations (e.g., by gender, age, race, or special education status).

Of the forty publications reporting research on school shootings, 75% were descriptive studies and 25% were secondary reports. Studies of school shootings typically examined variables such as school level, age, gender, race and special education status, and proposed explanations for this form of violence.

Page	Alphabetical List of Citations
9	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
9	Ahlig, N., Göbel, K., Allwinn, M., Fiedler, N., Leuschner, V., & Scheithauer, H. (2020). Testing for Reliability of the TARGET Threat Analysis Instrument (TTAI): An Interdisciplinary Instrument for the Analysis of School Shooting Threats. In B. Akhgar, D. Wells, & J. M. Blanco (Eds.), <i>Investigating Radicalization Trends</i> (pp. 81–100). Springer International Publishing. https://doi.org/10.1007/978-3-030-25436-0_6
9	Allen, K., Cornell, D., Lorek, E., & Sheras, P. (2008). Response of school personnel to student threat assessment training. <i>School Effectiveness and School Improvement</i> , 19(3), 319–332. https://doi.org/10.1080/09243450802332184
10	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
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13	Cornell, D. G., Allen, K., & Fan, X. (2012). A randomized controlled study of the Virginia Student Threat Assessment Guidelines in kindergarten through grade 12. <i>School Psychology Review</i> , 41(1), 100–115. https://doi.org/10.1080/02796015.2012.12087378
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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.

Ahlig, N., Göbel, K., Allwinn, M., Fiedler, N., Leuschner, V., & Scheithauer, H. (2020). Testing for Reliability of the TARGET Threat Analysis Instrument (TTAI): An Interdisciplinary Instrument for the Analysis of School Shooting Threats. In B. Akhgar, D. Wells, & J. M. Blanco (Eds.), *Investigating Radicalization Trends* (pp. 81–100). Springer International Publishing. https://doi.org/10.1007/978-3-030-25436-0_6

This chapter describes the development and interrater reliability analysis for a standardised research tool to analyse the characteristics of school shooting threats systematically, based on state-of-the-art knowledge. The instrument was developed on the basis of the current but not empirically tested approaches evaluating the seriousness of school shooting threats. An interrater reliability study was conducted following two rating phases and instrument revisions with 13 independent raters evaluating school shooting threat case records ($N = 15$). Most items showed high reliability after final modifications (90%; $N = 88$). The TARGET Threat Analysis Instrument (TTAI) is a reliable tool for testing current approaches and developing elaborated criteria to distinguish between school shooting threats which are meant to be serious and threats which are situational in that specific moment of threatening.

Allen, K., Cornell, D., Lorek, E., & Sheras, P. (2008). Response of school personnel to student threat assessment training. *School Effectiveness and School Improvement*, 19(3), 319–332. <https://doi.org/10.1080/09243450802332184>

Abstract: School safety has become an important area of concern for school improvement. This study examined the effects of staff training as means of improving school responses to student threats of violence. A multidisciplinary sample of 351 staff from 2 school divisions completed pre-post training

surveys as part of a 1-day training program using the Guidelines for Responding to Student Threats of Violence (Cornell & Sheras, 2006). Analysis of pre-post surveys found large changes in staff attitudes toward school safety and violence prevention efforts. There was a substantial decrease in concerns about school homicide and increased awareness of effective violence prevention efforts. There was a drop in support for zero tolerance and profiling approaches, along with increased knowledge of threat assessment principles and concepts. These changes were sustained across school divisions serving a challenging urban population and a more affluent, suburban population. Similar effects were found across all school personnel. These findings demonstrate the viability of training staff in a student threat assessment approach.

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.

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.

Burnette, A. G., Datta, P., & Cornell, D. (2018). The distinction between transient and substantive student threats. *Journal of Threat Assessment and Management*, 5(1), 4–20. <https://doi.org/10.1037/tam0000092>

Many schools across North America have adopted student threat assessment as a violence prevention strategy. The Virginia Student Threat Assessment Guidelines (VSTAG) is a threat assessment model that emphasizes distinguishing between substantive threats that are serious and transient threats that are not serious. This retrospective study investigated the interrater reliability and criterion-related validity of this distinction in a sample of 844 student threat cases from 339 Virginia public schools. To assess interreliability for the transient versus substantive distinction, research coders independently classified a subsample of 148 narratives, achieving classification agreement with schools of 70% ($\kappa = .53$). Logistic regression analyses examined transient and substantive threat differences in threat characteristics and outcomes. Threats were more likely to be classified as substantive when they included warning behaviors (e.g., history of violence, weapon use, leakage, etc.), were made by older students, mentioned the use of a bomb or a knife, and involved threats to harm self as well as others. Although only 2.5% of threats were attempted, substantive threats were 36 times more likely to be attempted than transient threats. Substantive threats were more likely to result in out-of-school suspension, change in school placement, and/or legal action. Overall, these findings supported the transient/substantive distinction, but indicated some training needs for school teams.

Burnette, A. G., Huang, F., Maeng, J. L., & Cornell, D. (2019). School threat assessment versus suicide assessment: Statewide prevalence and case characteristics. *Psychology in the Schools*, 56(3), 378–392. <https://doi.org/10.1002/pits.22194>

Threat assessment is a violence prevention strategy used to investigate and respond to threats to harm others. In 2013, Virginia mandated the use of threat assessment teams for threats to self and to others, effectively subsuming suicide assessment with threat assessment and raising questions about the distinction between the two practices. In a statewide sample of 2,861 cases from 926 schools, there were more threats to self (60%) than others (35%), with only 5% involving threats to both self and others. Threats to self were more likely to be made by females (odds ratio [OR] = 3.38) and students with fewer

prior disciplinary actions (OR = 0.48). Threats to self were much less likely to involve a weapon (OR = 0.07), but more likely to be attempted (OR = 1.50) and result in mental health services (OR = 2.96). They were much less likely to result in out-of-school suspensions (OR = 0.07), legal action (OR = 0.17), and/or changes in placement (OR = 0.53). Overall, these findings support a clear distinction between suicide and threat assessment.

Burnette, A.G., Konold, T., Cornell, D. (2020). Grade-Level Distinctions in Student Threats of Violence. *Journal of School Violence*, 19(3), 323-335.
<https://doi.org/10.1080/15388220.2019.1694031>

Virginia law mandates the use of threat assessment in all public schools, yet there is little research on grade-level differences. This study investigated a statewide sample of 3,282 threats from 1,021 schools. Threats significantly differed across grade level in demographics, characteristics, and outcome. As grade increased, students were more likely to threaten physical assaults (OR = 1.11, $p < .001$), but less likely to threaten with weapons (OR = 0.95, $p < .01$). Notably, 1st graders (OR = 2.01, $p < .05$) were two times more likely to threaten to kill, but 9th graders were more likely to attempt their threats (OR = 1.02, $p < .05$). These findings highlight the need to consider grade level in evaluating and responding to student threats of violence.

Burns, M. K., Dean, V. J., & Jacob-Timm, S. (2001). Assessment of violence potential among school children: Beyond profiling. *Psychology in the Schools*, 38(3), 239–247.
<https://doi.org/10.1002/pits.1014>

The increasing level of public attention to violence in American schools makes the issue a top priority among educators. School psychologists could play an important role in identifying at-risk youth, and planning appropriate individual, school, and community interventions related to school violence. However, there is limited literature examining different assessment approaches that could be used to evaluate student risk for violence. This article reviews (a) characteristics of students “at risk” for violence, (b) informal checklists and matching student characteristics to profiles of typical violent students and (c) threat assessment based on Borum et al.'s (1999) model. Ethical and legal considerations are covered as well.

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.

Cornell, D. G., Allen, K., & Fan, X. (2012). A randomized controlled study of the Virginia Student Threat Assessment Guidelines in kindergarten through grade 12. *School Psychology Review*, 41(1), 100–115. <https://doi.org/10.1080/02796015.2012.12087378>

This randomized controlled study examined disciplinary outcomes for 201 students who made threats of violence at school. The students attended 40 schools randomly assigned to use the Virginia Student Threat Assessment Guidelines or follow a business-as-usual disciplinary approach in a control group. Logistic regression analyses found, after controlling for student gender, race, school level, and threat severity, that the 100 students in the threat assessment group schools were more likely to receive counseling services (odds ratio [OR] = 3.98) and a parent conference (OR = 2.57), and less likely to receive a long-term suspension (OR = 0.35) or alternative school placement (OR = 0.13) than the 101 students in the control group schools. Implementation fidelity was associated with decreased long-term suspension (OR = 0.73). These results provide strong empirical support for the use of student threat assessment in primary and secondary schools. (PsycINFO Database Record (c) 2019 APA, all rights reserved)

Cornell, D. G., Gregory, A., & Fan, X. (2011). Reductions in long-term suspensions following adoption of the Virginia Student Threat Assessment Guidelines. *NASSP Bulletin*, 95(3), 175–194. <https://doi.org/10.1177/0192636511415255>

This quasi-experimental study examined the adoption of the Virginia Student Threat Assessment Guidelines in 23 high schools. After training, school administrators and other staff members demonstrated substantial increases in knowledge of threat assessment principles and decreased commitment to zero tolerance approaches. Schools using the guidelines showed a 52% reduction in long-term suspensions and a 79% reduction in bullying infractions from the pretraining year to the posttraining year, in contrast to a control group of 26 schools not using the guidelines.

Cornell, D.G., & Lovegrove, P. (2015). Student threat assessment as a method for reducing student suspensions. In D. Losen (Ed.), *Closing the School Discipline Gap: Research for Policymakers* (pp. 180-191). New York, NY: Teachers College Press. <https://escholarship.org/uc/item/18h2929c>

This paper presents two studies of the Virginia Student Threat Assessment Guidelines, which is a systematic method for schools to respond to student threats of violence without resorting to zero tolerance suspension. The first study reports secondary analyses from a randomized controlled trial which previously reported that students attending schools using the Virginia Guidelines were less likely to receive a long-term suspension (Odds Ratio = .35) than students attending control group schools using a zero tolerance approach (Cornell, Allen, & Fan, 2012). The secondary analyses found no difference in the impact on White versus Black students, which means that both racial groups benefitted from the intervention. The second study examined the scaled-up implementation of the Virginia Guidelines in Virginia public schools using a retrospective, quasi-experimental design. Schoolwide annual suspension rates were compared in 971 schools that chose to adopt the Virginia Guidelines versus 824 schools not using the Virginia Guidelines. Use of the Virginia Guidelines was associated with a 19% reduction in the number of long-term suspensions and an 8% reduction in the number of fewer short-term suspensions schoolwide during the 2010-2011 school year. Length of implementation was associated with greater reductions in suspensions. Schools with formal training in the Virginia Guidelines had greater reductions than schools that adopted them without formal training. There was not a significant interaction between use of the Virginia Guidelines and minority composition of the school, which means that schools of different racial composition demonstrated similar reductions. In conclusion, the two studies support use of the Virginia Guidelines as a promising approach for reducing suspension rates.

Cornell, D.G., & Maeng, J. (2018). Statewide implementation of threat assessment in Virginia K-12 schools. *Contemporary School Psychology*, 22(2), 116–124. <https://doi.org/10.1007/s40688-017-0146-x>

In 2013, VA became the first state to mandate the use of threat assessment teams in its K-12 public schools. We provide an account of the development and adaptation of threat assessment as a school safety practice and research on the Virginia Student Threat Assessment Guidelines in VA schools. We describe the state law and the question of whether suicide assessment should be considered a form of

threat assessment. We then describe research on the statewide implementation of threat assessment and summarize results indicating overall positive outcomes for schools who are actively engaged in threat assessment, but qualitative findings from a needs assessment identified team training gaps as well as a need to orient the larger school community to the threat assessment process. We describe a series of online programs to educate students, parents, teachers, and other school staff about the threat assessment process. In conclusion, this paper presents some lessons learned in the statewide implementation of threat assessment as a safe and effective violence prevention strategy.

Cornell, D.G., Maeng, J., Burnette, A.G., Datta, P., Huang, F., & Jia, Y. (2016). Threat Assessment in Virginia Schools: Technical Report of the Threat Assessment Survey for 2014-2015. Charlottesville, VA: Curry School of Education, University of Virginia.

In 2013, Virginia passed legislation (§ 22.1-79.4) directing local school boards to establish threat assessment teams for each public school. The legislation also requires each threat assessment team to report quantitative data on its activities according to guidance developed by the Department of Criminal Justice Services. To facilitate this data reporting, questions about threat assessment activities were included in the state's Annual School Safety Audit Survey completed by school administrators. This report is a technical supplement to the 2015 School Safety Audit Report. Threats are broadly defined as a student's communication or behavior that indicates intent to harm someone. Schools were asked to describe their threat assessment activities and report on up to five threat assessment cases. An important caveat is that this report only concerns student threats that were reported to school authorities and then investigated by the school's threat assessment team. An unknown number of threats may go unreported or are not investigated. Thus, this report refers to student threat cases in which a threat assessment was conducted. This report describes the student threat assessment process in Virginia public schools, with information on the prevalence of threats across school levels, the kinds of threats made by students, how schools responded to threats, and the outcomes for students and their intended victims. Schools reported cases involving threats to harm self as well as threats to harm others, but the primary focus of this report is on threats to harm others. This report is a descriptive summary of survey findings that does not attempt to reach final conclusions or recommendations about threat assessment practice in Virginia schools. Additional reports will present more comprehensive analyses that lead to specific conclusions and recommendations.

Cornell, D.G., Maeng, J. L., Burnette, A. G., Jia, Y., Huang, F., Konold, T., Datta, P., Malone, M., & Meyer, P. (2018). Student threat assessment as a standard school safety practice: Results from a statewide implementation study. *School Psychology Quarterly*, 33(2), 213–222.
<https://doi.org/10.1037/spq0000220>

Threat assessment has been widely endorsed as a school safety practice, but there is little research on its implementation. In 2013, Virginia became the first state to mandate student threat assessment in its public schools. The purpose of this study was to examine the statewide implementation of threat assessment and to identify how threat assessment teams distinguish serious from nonserious threats. The sample consisted of 1,865 threat assessment cases reported by 785 elementary, middle, and high schools. Students ranged from pre-K to Grade 12, including 74.4% male, 34.6% receiving special education services, 51.2% White, 30.2% Black, 6.8% Hispanic, and 2.7% Asian. Survey data were collected from

school-based teams to measure student demographics, threat characteristics, and assessment results. Logistic regression indicated that threat assessment teams were more likely to identify a threat as serious if it was made by a student above the elementary grades (odds ratio 0.57; 95% lower and upper bound 0.42–0.78), a student receiving special education services (1.27; 1.00–1.60), involved battery (1.61; 1.20–2.15), homicide (1.40; 1.07–1.82), or weapon possession (4.41; 2.80–6.96), or targeted an administrator (3.55; 1.73–7.30). Student race and gender were not significantly associated with a serious threat determination. The odds ratio that a student would attempt to carry out a threat classified as serious was 12.48 (5.15–30.22). These results provide new information on the nature and prevalence of threats in schools using threat assessment that can guide further work to develop this emerging school safety practice.

Cornell, D.G., Maeng, J., Huang, F., Shukla, K., & Konold, T. (2018). Racial/ethnic parity in disciplinary consequences using student threat assessment. *School Psychology Review*, 47(2), 183–195. <https://doi.org/10.17105/SPR-2017-0030.V47-2>

School psychologists are frequently called upon to assess students who have made verbal or behavioral threats of violence against others, a practice commonly known as threat assessment. One critical issue is whether the outcomes of a threat assessment generate the kind of racial disparities widely observed in school disciplinary practices. In 2013, Virginia became the first state to mandate threat assessment teams in all public schools. This study examined the disciplinary consequences for 1,836 students who received a threat assessment in 779 Virginia elementary, middle, and high schools during the 2014–2015 school year. Multilevel logistic regression models found no disparities among Black, Hispanic, and White students in out-of-school suspensions, school transfers, or legal actions. The most consistent predictors of disciplinary consequences were the student's possession of a weapon and the team classification of the threat as serious. We discuss possible explanations for the absence of racial/ethnic disparities in threat assessment outcomes and cautiously suggest that the threat assessment process may reflect a generalizable pathway for achieving parity in school discipline.

Cornell, D.G., Sheras, P., Gregory, A., & Fan, X. (2009). A retrospective study of school safety conditions in high schools using the Virginia threat assessment guidelines versus alternative approaches. *School Psychology Quarterly*, 24(2), 119–129. <https://doi.org/10.1037/a0016182>

Threat assessment has been widely recommended as a violence prevention approach for schools, but there are few empirical studies of its use. This nonexperimental study of 280 Virginia public high schools compared 95 high schools using the Virginia threat assessment guidelines (Cornell & Sheras, 2006), 131 following other (i.e., locally developed) threat assessment procedures, and 54 not using a threat assessment approach. A survey of 9th grade students in each school obtained measures of student victimization, willingness to seek help for bullying and threats of violence, and perceptions of the school climate as caring and supportive. Students in schools using the Virginia threat assessment guidelines reported less bullying, greater willingness to seek help, and more positive perceptions of the school climate than students in either of the other 2 groups of schools. In addition, schools using the Virginia guidelines had fewer long-term suspensions than schools using other threat assessment approaches. These group differences could not be attributed to school size, minority composition or socioeconomic

status of the student body, neighborhood violent crime, or the extent of security measures in the schools. Implications for threat assessment practice and research are discussed.

Cornell, D. G., Sheras, P. L., Kaplan, S., McConville, D., Douglass, J., Elkon, A., McKnight, L., Branson, C., & Cole, J. (2004). Guidelines for student threat assessment: Field-test findings. *School Psychology Review*, 33(4), 527–546

A demonstration project was conducted to field-test guidelines for schools to use in responding to student threats of violence. Results from 188 student threats occurring in 35 schools over the course of one school year are described. School-based teams used a decision-tree model to evaluate the seriousness of a threat and take appropriate action to reduce the threat of violence. Using threat assessment guidelines, the majority of cases (70%) were resolved quickly as transient threats. More serious cases, termed substantive threats (30%), required a more extensive evaluation and intervention plan. Follow-up interviews with school principals revealed that almost all students were able to continue in school or return to school after a brief suspension. Only 3 students were expelled, and none of the threatened acts of violence were carried out. These findings indicate that student threat assessment is a feasible, practical approach for schools that merits more extensive study.

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).

Ellington, B. L. (2019). *Preventing targeted school violence using a threat assessment model: An exploration of school counselors' prevention and intervention practices* [Unpublished doctoral dissertation]. North Carolina State University.

After an incident of targeted school violence at Marjory Stoneman Douglas High School in 2018, the U.S. Secret Service National Threat Assessment Center (NTAC) released an operational guide, *Enhancing School Safety Using a Threat Assessment Model: An Operational Guide for Preventing Targeted School Violence* (2018), with the intention of providing another tool to enhance school safety. Moving from a reactive response to a more preventive approach is critical to implement the threat assessment process detailed within the U.S. Secret Service model. School counselors take on significant leadership roles in and after school shootings due to their expertise (Fein, Carlisle, & Isaacson, 2008). However, proactive targeted violence prevention efforts also align with the roles and responsibilities of school counselors. The purpose of the present study was to explore professional school counselors' prevention and intervention practices related to student threats of violence, including challenges and recommendations for a thorough threat assessment process in schools. Consensual qualitative research (CQR) was the methodological approach for examining the use of threat assessment in schools. Individual interviews were conducted with eleven professional school counselors from a large southeastern school district. The present study was designed to answer four research questions pertaining to the (1) roles and responsibilities of school counselors in a comprehensive targeted school violence prevention plan, and how schools may (2) identify students who might be at risk for violence, (3) assess a student's risk for violence, and (4) manage a student's risk for violence. Consensual Qualitative Research (CQR) was the methodological approach employed for collecting and analyzing individual interview data. Data was analyzed using qualitative data analysis software, NVivo 12. Findings suggest schools are attempting to design systems and structures in which to conduct threat assessments on student threats of violence in the attempt to prevent incidents of targeted school violence. Yet, inconsistencies as well as challenges to roles and responsibilities, threat assessment practices, and risk management strategies indicate a need for further exploration and analysis. Thus, future studies that further investigate the school threat assessment process are warranted to inform targeted violence prevention efforts in schools.

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.

Flannery, D.J., Modzeleski, W. & Kretschmar, J.M. (2013). Violence and School Shootings. *Current Psychiatry Reports*, 15, 331. <https://doi.org/10.1007/s11920-012-0331-6>

Multiple-homicide school shootings are rare events, but when they happen they significantly impact individuals, the school and the community. We focus on multiple-homicide incidents and identified mental health issues of shooters. To date, studies of school shootings have concluded that no reliable profile of a shooter exists, so risk should be assessed using comprehensive threat assessment protocols. Existing studies primarily utilize retrospective case histories or media accounts. The field requires more empirical and systematic re- search on all types of school shootings including single victim incidents, those that result in injury but not death and those that are successfully averted. We discuss current policies and practices related to school shootings and the role of mental health professionals in assessing risk and supporting surviving victims.

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.

Goodrum, S., Evans, M. K., Thompson, A. J., & Woodward, W. (2019). Learning from a failure in threat assessment: 11 questions and not enough answers. *Behavioral Sciences & the Law*, 37(4), 353–371. <https://doi.org/10.1002/bsl.2399>

Threat assessment theory and practice have evolved significantly since Columbine. The US Secret Service's guidelines for threat assessment include 11 questions that school officials should ask to identify, investigate, and manage students of concern. Yet, no research examines how school officials implement these questions. This qualitative case study examines the way that school officials used the 11 questions with a student of concern, who underwent a threat assessment and 3 months later shot and killed a classmate and himself on school grounds. The data include deposition testimony from 12 school and district officials and more than 8,000 pages of records in the case. For each of the 11 questions, the findings reveal what the threat assessment team knew and might have learned; the findings also demonstrate the importance of multiple sources of information, a multidisciplinary team, and an investigative mindset. The questions may prove difficult to answer in “loosely coupled” systems, like schools, where information is unintentionally lost due to the organization's structural hierarchy, specialization of tasks, and heavy workloads. The findings provide critical lessons learned for threat assessment, information gathering, and violence prevention in schools.

Goodrum, S., Thompson, A. J., Ward, K. C., & Woodward, W. (2018). A case study on threat assessment: Learning critical lessons to prevent school violence. *Journal of Threat Assessment and Management*, 5(3), 121–136. <https://doi.org/10.1037/tam0000104>

This qualitative case study examines the way school officials implemented the U.S. Secret Service and Department of Education's principles for threat assessment with a specific student of concern, who underwent a threat assessment and later shot and killed a classmate and himself on school grounds. The

data came from deposition testimony from 12 school and district staff familiar with the student and the case and more than 8,000 pages of school, district, and law enforcement records. The findings suggest that district and school officials need to monitor the implementation of the threat assessment process with students of concern. Specifically, the threat assessment team should include 4 to 5 members from multidisciplinary perspectives; team members should complete a comprehensive threat assessment training program; threat assessed students should receive regular check-ins and support; and districts and schools should use an empirically validated threat assessment tool. Finally, educators should consider relying on a continuous improvement model to monitor implementation of threat assessment principles and procedures.

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, C. M., Bertuccio, R. F., Mazer, T. M., & Tawiah, C. O. (2020). Google it: A component analysis of free online violent threat assessment tools for schools. *The Rural Educator*, 41(1), 40-60. <https://doi.org/10.35608/ruraled.v41i1.680>

Although school-based youth homicides and student fear of attack or harm at school have slowly decreased over the past two decades (Musu-Gillette et al., 2018), students are not free from worry; violence is still present in schools. School violence refers to acts of physical force, harm, or power that occur on school grounds or at school events (Centers for Disease Control and Prevention [CDC], 2017; World Health Organization, 2002). School violence is manifested over a vast continuum, encompassing incidents ranging from bullying and physical fighting to weapon use, bombings, and mass attacks among students (CDC, 2017). While bullying and fighting are much more likely to occur in schools, the nation at large appears to demonstrate greater concern and worry for more unlikely events, such as school shootings (Juvonen, 2001). Because of the mounting evidence related to wide-reaching effects of school violence (Crawford & Burns, 2016; Peguero, Connell, & Hong, 2016), threat assessment efforts to identify serious threats and prevent unnecessary harm are more needed than ever. Educational agencies that are underfunded, lack needed training, and may be geographically isolated, like rural schools, may turn to the internet for free or low-cost resources to retrieve the information and materials that they need

to keep students and communities safe. The present study compares extant open-access violence threat assessment measures to Cornell's (2018a) Comprehensive School Threat Assessment Guidelines (CSTAG) to examine the relative quality of existing resources that are available online for rural and underserved school districts.

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.

Kaplan, S. G., & Cornell, D. G. (2005). Threats of violence by students in special education. *Behavioral Disorders, 31*(1), 107–119. <https://doi.org/10.1177/019874290503100102>

We compared threats of violence made by K–12 students in special education (120 cases) or general education (136 cases) in schools that were implementing threat assessment guidelines for managing student threats of violence (Cornell, Sheras, Kaplan, McConville, Posey, Levy- Elkon, et al., 2004; Cornell & Sheras, in press). Students in special education made disproportionately more threats, as well as more severe threats, than peers in general education. Students classified as emotionally disturbed (ED) exhibited the highest threat rates. Nevertheless, use of school suspension as a disciplinary consequence for threats was consistent for students in special and general education, and few students were expelled. Our findings support the use of threat assessment to manage threats of violence by students in special education.

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.

Leuschner, V., Fiedler, N., Schultze, M., Ahlig, N., Göbel, K., Sommer, F., Scholl, J., Cornell, D., & Scheithauer, H. (2017). Prevention of targeted school violence by responding to students' psychosocial crises: The NETWASS program. *Child Development*, 88(1), 68–82.
<https://doi.org/10.1111/cdev.12690>

The standardized, indicated school-based prevention program “Networks Against School Shootings” combines a threat assessment approach with a general model of prevention of emergency situations in schools through early intervention in student psychosocial crises and training teachers to recognize warning signs of targeted school violence. An evaluation study in 98 German schools with 3,473 school staff participants ($M_{\text{age}} = 46.2$ years) used a quasi-experimental comparison group design with three measurement points (pre, post, and 7 months followup) with schools randomly allocated to implementation conditions. The study found increases in teachers' expertise and evaluation skills, enhanced abilities to identify students experiencing a psychosocial crisis, and positive secondary effects (e.g., teacher–student interaction, feelings of safety).

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.

Maeng, J. L., Cornell, D., & Huang, F. (2019). Student threat assessment as an alternative to exclusionary discipline. *Journal of School Violence*, <https://doi.org/10.1080/15388220.2019.1707682>

Threat assessment has been proposed as a method for schools to respond to student threats of violence that does not rely on exclusionary discipline practices (e.g., suspension, transfer, expulsion, arrest). The present study compared disciplinary consequences for 657 students in 260 schools using the Comprehensive Student Threat Assessment Guidelines (CSTAG) with a comparison group of 661 students in 267 schools using a more general threat assessment approach. The odds that students receiving a threat assessment in CSTAG schools would receive a suspension ($OR = 0.59$) or law enforcement action ($OR = 0.47$) were less than those in schools using a general approach. Students in CSTAG schools were expelled at lower rates (0% versus 1.7%) than students in comparison schools. These results indicate that schools using the CSTAG model are less likely to respond to student threats with exclusionary discipline.

Maeng, J. L., Malone, M., & Cornell, D. (2020). Student threats of violence against teachers: Prevalence and outcomes using a threat assessment approach. *Teaching and Teacher Education*, 87, 102934. <https://doi.org/10.1016/j.tate.2019.102934>

Internationally, student aggression against teachers is a prevalent problem in schools. Student threat assessment is an emerging violence prevention practice, but its use for threats against teachers has not been investigated. This study examined use of threat assessment for a statewide sample of student threats against teachers ($n = 226$) compared to threats against other students ($n = 1,228$). Results indicated that threats against teachers were less prevalent (15.5%) than threats against peers (84.5%). Of threats against teachers, 30% were classified as serious by the school's threat assessment team and 5.8% were attempted. Implications for school policy and practice and teacher safety are discussed.

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., & Guldinmann, 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.

Millspough, S. B., Cornell, D. G., Huang, F. L., & Datta, P. (2015). Prevalence of aggressive attitudes and willingness to report threats in middle school. *Journal of Threat Assessment and Management*, 2(1), 11–22. <https://doi.org/10.1037/tam0000031>

Violence prevention strategies such as threat assessment rely on information from students; however, students are often unwilling to report threats of violence to school authorities. The current study investigated the hypothesis that middle school students are less likely to report threats of violence when they perceive aggressive behavior as a source of status and popularity among their peers. Our statewide sample consisted of 39,364 7th and 8th graders who completed school climate surveys in 423 schools. Students completed a measure of aggressive attitudes and were asked how much they agreed or disagreed with 2 statements concerning threats of violence: (a) “If another student brought a gun to school, I would tell one of the teachers or staff at school,” and (b) “If another student talked about killing someone, I would tell one of the teachers or staff at school.” Multilevel logistic regression analyses, which controlled for student and school demographics, found that higher levels of aggressive attitudes at both the school and student level were associated with a lower likelihood of reporting threat behavior.

Mitchell, M., & Palk, G. (2016). Traversing the space between threats and violence: A review of threat assessment guidelines. *Psychiatry, Psychology & Law*, 23(6), 863–871. <https://doi.org/10.1080/13218719.2016.1164638>

While the majority of violent threats – defined as an expression of intent to do harm or act out violently against someone or something – do not progress to actual violence, a small proportion of threateners do go on to enact violence. Most researchers argue that violence risk assessments are inadequate for assessing threats of violence, which raises the question: how should a threat assessment (TA) be conducted? To begin to understand available frameworks for assessing threats, a systematic review of TA research literature was conducted. Most TA literature pertains to a specific domain (schools, public figure threats, workplaces) and target audience (clinicians, school personnel, law enforcement). TA guidelines are typically based on literature reviews with some based on empirical measures and others having no strong evidential basis. The most common concepts in TA are exploration of the threatener's mental health, the motivation for the threat and the presence of any plans. Rather than advocating for the development of a protocol for conducting TA, this article outlines the common areas of inquiry in assessing threats and highlights the limitations of current TA guidelines.

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 Threat Assessment Center. (2019). *Protecting America's Schools: A U.S. Secret Service Analysis of Targeted School Violence*. U.S. Secret Service, Department of Homeland Security. <https://www.secretservice.gov/data/protection/ntac/usss-analysis-of-targeted-school-violence.pdf>

Ensuring the safety of children at school is a responsibility that belongs to everyone, including law enforcement, school staff, mental health practitioners, government officials, and members of the general public. To aid in these efforts, the U.S. Secret Service National Threat Assessment Center (NTAC) studied 41 incidents of targeted school violence that occurred at K-12 schools in the United States from 2008 to 2017. This report builds on 20 years of NTAC research and guidance in the field of threat assessment by offering an in-depth analysis of the motives, behaviors, and situational factors of the attackers, as well as the tactics, resolutions, and other operationally-relevant details of the attacks. The analysis suggests that many of these tragedies could have been prevented, and supports the importance of schools establishing comprehensive targeted violence prevention programs as recommended by the Secret Service in *Enhancing School Safety Using a Threat Assessment Model: An Operational Guide for Preventing Targeted School Violence*.¹ This approach is intended to identify students of concern, assess their risk for engaging in violence or other harmful activities, and implement intervention strategies to manage that risk. The threshold for intervention should be low, so that schools can identify students in distress before their behavior escalates to the level of eliciting concerns about safety.

Nekvasil, E. K., & Cornell, D. G. (2012). Student reports of peer threats of violence: Prevalence and outcomes. *Journal of School Violence*, 11(4), 357–375. <https://doi.org/10.1080/15388220.2012.706764>

Authorities in education and law enforcement have recommended that schools use a threat-assessment approach to prevent violence, but there is relatively little research on characteristics and outcomes of threats among students. The current study examined student reports of threat experiences in a sample of 3,756 high school students. Approximately 12% of students reported being threatened at school in the past 30 days, but only 23% of threatened students regarded the threat as serious and just 26% reported the threat to school authorities. Only 9% of students who received a threat reported that it was carried out. Five reasons why students did not report threats were identified. Logistic regression analyses identified student and threat characteristics associated with threat reporting and outcome. These findings provide new information about the prevalence and nature of student threats that can inform a threat assessment approach to school violence prevention.

Nekvasil, E. K., & Cornell, D. G. (2015). Student threat assessment associated with safety in middle schools. *Journal of Threat Assessment and Management*, 2(2), 98–113. <https://doi.org/10.1037/tam0000038>

Authorities in law enforcement and education have recommended the use of threat assessment to prevent violence, but few studies have examined its usefulness in middle schools. This retrospective, quasi-

experimental study compared middle schools that use the Virginia Student Threat Assessment Guidelines (Cornell & Sheras, 2006; N = 166) with schools that either do not use threat assessment (N = 119) or use an alternative model of threat assessment (school- or district-developed; N = 47). Based on school records, schools using the Virginia Guidelines reported lower short-term suspension rates than both groups of schools. According to a statewide school climate survey, schools using the Virginia Guidelines also had fairer discipline and lower levels of student aggressive behaviors, as reported by students. Finally, teachers reported feeling safer in schools using the Virginia Guidelines, as opposed to both groups of schools. Additional analyses of school records found that the number of years a school used the Virginia Guidelines was associated with lower long-term suspension rates, student reports of fairer discipline, and lower levels of student aggressive behaviors. All analyses controlled for school size, minority composition, and socioeconomic status of the student body. These findings suggest that use of a threat assessment approach to violence prevention is associated with lower levels of student aggression and a more positive school climate.

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.

Oksanen, A., Kaltiala-Heino, R., Holkeri, E., & Lindberg, N. (2015). School shooting threats as a national phenomenon: Comparison of police reports and psychiatric reports in Finland. *Journal of Scandinavian Studies in Criminology & Crime Prevention*, 16(2), 145–159. <https://doi.org/10.1080/14043858.2015.1101823>

In aftermath of the school shootings in Finland (2007 and 2008), hundreds of schools were threatened with similar acts. These threats of homicidal violence occupied both police and psychiatrists, but little is known about the potential threat these cases posed. Our study compared the threats of homicidal violence communicated by pupils aged 12–18 using both police reports ($n = 20$, 2010) and psychiatric reports ($n = 77$, 2007–2009). We provide both descriptive information about the cases and statistical comparison based on threat assessment. The pupils were on average 14.9 years old, 13% girls. The threats were communicated most commonly in face-to-face situations in school to other pupils or teachers. Mental health problems were prevalent according to both data-sets. Pupils who were sent for adolescent psychiatric evaluation were a riskier group than the group who were only interrogated by the police. Police reports lacked specific information reflecting the fact that in 2010 Finnish police had not adopted tools for structural risk assessment that were already used by Finnish psychiatry. Our results underline the benefits of structural threat assessment approach, which saves resources and helps experts working with adolescents to gather relevant information and systematically assess it. In addition, it would be important to establish proper collaboration between schools, police and psychiatry.

O'Malley, M. D., Wolf-Prusan, L., Lima Rodriguez, C., Xiong, R., & Swarts, M. R. (2019). Cultural-competence considerations for contemporary school-based threat assessment. *Psychology in the Schools*, 56(2), 255–275. <https://doi.org/10.1002/pits.22197>

Threat-assessment procedures are advanced for their utility in reducing racial disparities in punitive and exclusionary school discipline outcomes. Generally unexamined, however, is bias in who gets referred for school-based threat assessment and under what circumstances. Cultural-competence considerations hold promise for addressing sources of bias in the evaluation of threats made in the school setting. Using a quantitative approach, this systematic literature review examines the degree to which contemporary cultural-competence considerations are embedded in 24 school-based threat-assessment articles published between 2007 and 2017. Results indicate generally poor coverage of considerations for cultural competence both within and across threat-assessment articles. An analysis of change in cultural-competence considerations by year of publication suggests that more recently published threat-assessment literature has generally not integrated concurrent advancements in concepts of cultural

competence. Preliminary guidance for incorporating contemporary cultural-competence considerations into school-based threat-assessment procedures are provided.

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.

Pollack, W. S., Modzeleski, W., & Rooney, G. (2008). *Prior knowledge of potential school-based violence: Information students learn may prevent a targeted attack*. Washington, DC: U.S. Secret Service and U.S. Department of Education. <https://eric.ed.gov/?id=ED511645>

In the wake of several high-profile shootings at schools in the United States, most notably the shootings that occurred at Columbine High School on April 20, 1999, the United States Secret Service (Secret

Service) and the United States Department of Education (ED) embarked on a collaborative endeavor to study incidents of planned (or "targeted") violence in the nation's schools. Initiated in 1999, the study, termed the Safe School Initiative (SSI), examined several issues, most notably whether past school-based attacks were planned, and what could be done to prevent future attacks. The SSI findings highlight that in most targeted school-based attacks, individuals, referred to as "bystanders" in this report, had some type of advanced knowledge about planned school violence. Despite this advanced knowledge, the attacks still occurred. This study aimed to further the prevention of targeted school-based attacks by exploring how students with prior knowledge of attacks made decisions regarding what steps, if any, to take after learning the information. The study sought to identify what might be done to encourage more students to share information they learn about potential targeted school-based violence with one or more adults. Six key findings were identified. Given the small sample size and the exploratory nature of the study, generalization from these findings may be limited. The findings are: (1) The relationships between the bystanders and the attackers, as well as when and how the bystanders came upon information about the planned attacks, varied; (2) Bystanders shared information related to a threat along a continuum that ranged from bystanders who took no action to those who actively conveyed the information; (3) School climate affected whether bystanders came forward with information related to the threats; (4) Some bystanders disbelieved that the attacks would occur and thus did not report them; (5) Bystanders often misjudged the likelihood and immediacy of the planned attack; and (6) In some situations, parents and parental figures influenced whether the bystander reported the information related to the potential attack to school staff or other adults in positions of authority. Case studies are appended.

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.

Rappaport, N., Gansner, M., & Flaherty, L. T. (2019). How can schools assess threats without alienating students and families? *Educational Leadership*, 77(2), 14-20

Despite the development of these guidelines and a national focus on school shootings and school safety, however, little data exist on the outcomes of safety assessments—particularly for students who undergo the process. Throughout 19 years of conducting and supervising school safety assessments, authors Lois and Nancy have observed that many of the students who undergo these assessments have complex social and psychological problems, including impulsivity with untreated ADHD and family trauma (Rappaport et al., 2015). Moreover, these students' guardians often felt “attacked” by the school in terms of how the assessment unfolded. Despite being referred to various mental health services, families often didn't end up accessing the intensive services necessary to ameliorate the complex problems that seemed to be at the root of their child's behavior.

Rees, C. A., Lee, L. K., Fleegler, 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.

Stohlman, S. L., & Cornell, D. G. (2019). An online educational program to increase student understanding of threat assessment. *Journal of School Health*, 89(11), 899–906. <https://doi.org/10.1111/josh.12827>

Threat assessment is a widely recommended practice used by schools to investigate and respond to student threats of violence; however, students are often reluctant to disclose threats. We developed an online educational program for students to increase their understanding of threat assessment and the need to report serious threats. We investigated 2 research questions: (1) How are student characteristics of sex, grade level, and ethnicity/race associated with student knowledge of threat assessment and willingness to report threats? (2) Does the program increase knowledge of threat assessment and willingness to report threats? The sample consisted of 2338 students from 6 middle schools and 3 high schools. Prior to program completion, boys were less willing than girls, and older students were less willing than younger students, to report threats. Post-program questions revealed that the program significantly increased knowledge and willingness to report threats across student groups, with effect sizes (Cohen's d) ranging from small (.30) to large (1.43). This program promotes school safety by teaching students about threat assessment and increasing willingness to report threats. The program is available online for other schools to use.

Stohlman, S.L., Konold, T., & Cornell, D. (2020). Evaluation of threat assessment training for school personnel. *Journal of Threat Assessment and Management*, Advance Online Publication. <http://dx.doi.org/10.1037/tam0000142>

Despite the widespread use of threat assessment in K–12 schools, there is a dearth of research investigating the staff training process. We evaluated the effectiveness of day-long training on the Comprehensive Student Threat Assessment Guidelines (CSTAG) in a sample of 4,666 multidisciplinary

school personnel from administration, law enforcement, mental health, teaching, and other groups. Across 100 workshops conducted by 9 trainers, all discipline groups showed large and statistically significant increases in their knowledge of threat assessment from pretest to posttest. On average, participants achieved threat classification accuracy scores of 75% after completing the workshop. Over 95% of participants provided positive evaluations of the workshop and highly endorsed motivation to implement threat assessment in their schools. Overall, these findings support the use of workshop training to prepare multidisciplinary school-based threat assessment teams.

Strong, K., & Cornell, D. (2008). Student threat assessment in Memphis city schools: A descriptive report. *Behavioral Disorders*, 34(1), 42–54. <https://doi.org/10.1177/019874290803400104>

Threat assessment has been widely recommended as a violence prevention approach for schools but there are few reports of its implementation. Memphis City Schools adapted the Virginia threat assessment guidelines (Cornell & Sheras, 2006) for use by a centralized team serving 194 schools and a student population of 18,000. This article describes 209 student threats referred for assessment during a single school year and the resulting educational placements and disciplinary consequences. There were no reports of students carrying out any of the violent threats. These results support further examination of student threat assessment as a promising approach to dealing with student threats.

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.

Verlinden, S., Hersen, M., & Thomas, J. (2000). Risk factors in school shootings. *Clinical Psychology Review*, 20(1), 3-56. [https://doi.org/10.1016/S0272-7358\(99\)00055-0](https://doi.org/10.1016/S0272-7358(99)00055-0)

Nine incidents of multiple-victim homicide in American secondary schools are examined and common risk factors are identified. The literature dealing with individual, family, social, societal, and situational risk factors for youth violence and aggression is reviewed along with existing risk assessment methods. Checklists of risk factors for serious youth violence and school violence are used in reviewing each school shooting case. Commonalties among the cases and implications for psychologists practicing in clinical and school settings are discussed.

Vossekuil, B., Fein, R., Reddy, M., Borum, R., & Modzeleski, W. (2004). *The final report and findings of the Safe School Initiative: Implications for the prevention of school attacks in the United States*. Washington, DC: U.S. Secret Service and U.S. Department of Education. <https://www2.ed.gov/admins/lead/safety/preventingattacksreport.pdf>

Littleton, CO; Springfield, OR; West Paducah, KY; Jonesboro, AR. These communities have become familiar to many Americans as among the locations of those schools where shootings have occurred nationwide in recent years. In the aftermath of these tragic events, educators, law enforcement officials, mental health professionals and parents have pressed for answers to two central questions: "Could we have known that these attacks were being planned?" and, if so, "What could we have done to prevent these attacks from occurring?"

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

Woitaszewski, S., Crepeau-Hobson, F., Conolly, C., & Cruz, M. (2018). Rules, requirements, and resources for school-based threat assessment: A fifty state analysis. *Contemporary School Psychology*, 22(2), 125–134. <https://doi.org/10.1007/s40688-017-0161-y>

State governments and other agencies are resources that have the potential to provide leadership and guidance about school-based threat assessment practices. However, accessing information regarding threat assessment-related state mandates and recommendations can be a challenging and a time consuming task for school personnel as there is no single database or resource where that information is housed. Via internet searches covering all 50 United States, as well as the District of Columbia and Puerto Rico, the authors of this study identified state statutes, requirements, standards, and other recommendations for school-based threat assessment. Currently, only one state unambiguously and explicitly mandates threat assessment procedures and threat assessment teams. However, at least five other states have other statutes, standards, or procedures that imply the need for school-based threat assessment. Additionally, at least 39 states provided a quality web-based threat assessment resource for schools. Twenty-three of those resources were posted on state departments of education or public instruction web pages. At least 21 states have developed specific state guidance documents on school-based threat assessment. These resources can guide school-based mental health professionals as they prepare for conducting threat assessments in the school setting.