

SPECIAL ISSUE ARTICLE

COUNTERING MASS VIOLENCE IN THE UNITED STATES

Threat assessment as a school violence prevention strategy

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Research Summary: This paper describes the immense difficulty of predicting that someone is going to carry out a school shooting and then turns to threat assessment as a more promising violence prevention strategy. In schools, a multidisciplinary threat assessment team investigates reported threats and develops responses that are calibrated to the seriousness of the threat and the student's educational needs. Researchers have found that school teams have been able to resolve thousands of student threats with no serious acts of violence, yet permitting the majority of students to return to school. Controlled studies have found that schools using this approach can have reductions in the use of school suspension and improvements in student and teacher perceptions of school climate.

Policy Implications: Threat assessment represents a fundamental shift in the risk assessment field away from the pursuit of predictive accuracy toward a broader approach to the prevention of violence by helping troubled individuals. Threat assessment offers schools a proactive alternative to reactive practices such as zero tolerance discipline and costly investment in building security measures.

KEYWORDS

school shootings, threat assessment, violence prevention

Efforts to prevent mass violence have pursued the development of prediction strategies to identify would-be violent offenders before they attack. For decades, the search for predictive indicators has been the holy grail of violence prevention. Despite the heroic efforts of numerous researchers, there are

severe limitations to this approach, especially when applied to the problem of mass violence in schools. The purpose of this article is to explain why prediction strategies are not feasible for preventing mass violence in schools and to advocate an alternative approach to distinguish the goals of prediction from prevention through the strategy of threat assessment.

1 | WHY PREDICTIONS STRATEGIES ARE NOT FEASIBLE

A wave of shootings in schools in the 1990s generated intense interest in identifying a “school shooter profile” that would allow for authorities to identify likely offenders. For example, researchers proposed a “classroom avenger” profile of an emotionally troubled adolescent male responding to stress and humiliation (McGee & DeBenardo, 1999), and multiple organizations promulgated warning signs checklists to identify students at risk for attacking their school (American Psychological Association, 1999; Dwyer, Osher, & Warger, 1998; National School Safety Center, 1998). The checklists featured warning signs such as a history of school discipline problems, drug and alcohol use, and problems with anger. The most critical problem with the profiling approach, however, is that the hypothesized characteristics of school shooters also fit a much larger population of troubled youth who did not pose a threat of attacking their school. The authors of the federal warning signs report cautioned that, “Unfortunately *there is a real danger that early warning signs will be misinterpreted*” and used to stigmatize or punish students who fit the profile but committed no violent act (Dwyer et al., 1998, p. 7).

Sewell and Mendelsohn (2000) described the statistical problems of profiling potentially violent youth. The low base rate of school shootings makes them exceptionally difficult to predict. As more than 99% of schools will not have such an event, any predictive formula would need nearly perfect accuracy merely to achieve chance levels of prediction. Furthermore, because the warning signs and other presumed indicators of potential violence (e.g., many attackers were aggrieved loners) occur at a much higher base rate in the general student population, the use of a prediction formula will generate a high false-positive rate. The FBI reported noted the following:

One response to the pressure for action may be an effort to identify the next shooter by developing a “profile” of the typical school shooter. This may sound like a reasonable preventive measure, but in practice, trying to draw up a catalogue or “checklist” of warning signs to detect a potential school shooter can be shortsighted, even dangerous. Such lists, publicized by the media, can end up unfairly labeling many nonviolent students as potentially dangerous or even lethal. In fact, a great many adolescents who will never commit violent acts will show some of the behaviors or personality traits included on the list (O’Toole, 2000, pp. 2–3).

2 | PREVALENCE OF SHOOTINGS IN SCHOOLS

The extraordinary news attention given to school shootings has generated the perception that they are a ubiquitous phenomenon that renders American schools unsafe (Graf, 2018). The belief that schools are dangerous locations has justified enormous expenditures of tax dollars on building security measures such as fortified school entrances, bullet-resistant glass, metal detectors, alarm systems, video cameras, and even safe rooms where students can hide from a gunman (Linskey, 2013; Schuppe, 2018; Tennent, 2018). Federal and state legislation has funded the deployment of police officers into thousands of schools despite concerns that officers may criminalize student misbehavior that could otherwise be handled with school discipline (Morgan, Salomen, Plotkin, & Cohen, 2014; Whitaker et al., 2019).

Many states have mandated the implementation of intruder drills, despite concerns that they can be frightening and disruptive (Schonfeld, Rossen, & Woodard, 2017).

The emotional impact of school shootings on American society is evident. The number of school shootings in the United States, however, is subject to debate (Harper, Ryberg, & Temkin, 2018). The term “school shooting” elicits images of students being shot or killed, but lists of school shootings include many different kinds of incidents, such as shots fired with no injuries, shots fired at night in a school parking lot with no one at school, and shots fired near a school (Reidman & O’Neill, 2018). To be as inclusive as possible, the compilation of school shootings by the Department of Homeland Security includes incidents in which a firearm was brandished but not fired (Riedman & O’Neill, 2018).

In a study by Child Trends, Harper et al. (2018) identified wide discrepancies in reports of school shootings during the 2015–2016 school year. For this year, the FBI reported just two “active shooter incidents” in schools. The FBI used the term “active shooter” narrowly to refer to incidents in which law enforcement was notified while the shooting was taking place, which is an important distinction for law enforcement purposes but not useful in estimating the prevalence of school shootings as a whole. In contrast, the *Washington Post* documented 10 gunfire incidents, the organization Everytown for Gun Safety logged 29 incidents, and the U.S. Department of Education reported 235 schools with a shooting incident (Harper et al., 2018). The *Washington Post* limited its count to shootings in primary or secondary schools during school hours, whereas Everytown for Gun Safety used a broader definition. The surprisingly large number reported by the U.S. Department of Education was based on a survey completed by schools for the Civil Rights Data Collection program. Child Trends contacted schools reporting shootings on this survey and found that nearly all of them did not occur. Child Trends concluded that in many cases a school administrator likely misunderstood the question or made a data entry error.

Across organizations, the primary sources for counts of school shootings are news media reports. Wikipedia provides a public record of school shootings with a link to media sources (List of school shootings in the United States, 2019). According to Wikipedia, there were 103 documented K–12 school shooting incidents resulting in 321 casualties from 2011 to 2018 (List of school shootings in the United States, 2019). A total of 103 incidents over 8 years generates an average of 13 school shootings each year. With approximately 130,000 schools in the United States (National Center for Education Statistics, 2012), shootings occur in 1 out of every 10,000 schools. Based on this rough estimate, the average school can expect a shooting incident every 10,000 years. The statistical rarity of shootings in schools contrasts markedly with their emotional salience and the public perception of their prevalence.

If mass shootings are defined as those with four or more fatalities, there have been just five incidents in schools between 2011 and 2018 (List of school shootings in the United States, 2019). In contrast, there were at least 50 mass shootings outside of schools during this time period (List of mass shootings in the United States, 2019). In other words, mass shootings are ten times more frequent outside of schools than in schools.

Although there is good reason to study the prevalence of mass shootings, it should be noted that the cutoff for four or more fatalities is arbitrary. There is no compelling reason to expect that shootings with four fatalities differ meaningfully from shootings with two or three fatalities or from shootings with multiple people injured and no fatalities (Nekvasil, Cornell, & Huang, 2015). Research on mass violence has been stymied by small sample sizes, and a more inclusive definition would be helpful in accruing a sufficiently large sample to identify statistically reliable trends. For this reason, the definition of a mass shooting might be expanded to include incidents where the attacker attempted to kill multiple persons, regardless of the number of deaths. The only studies in which it seems useful to distinguish fatalities from injuries are analyses of the type of weapon used in the attack or the effectiveness of emergency medical treatment.

2.1 | School homicides from 1994 to 2018

In an important Centers for Disease Control and Prevention (CDC) study, researchers examined 431 incidents of school-associated homicides involving youths from 1994 to 2018 (Holland et al., 2019). The rate of these incidents over 22 years was approximately 20 per year, and the number of victims was 23 per year. Although there were fluctuations from year to year, and a seeming increase in multiple-victim homicides in 2017–2018, there was no overall increase or decrease over time.

An assessment of the full range of school-associated homicides generates a different picture of the phenomenon than the high-profile cases of mass shootings. There were a total of 609 perpetrators of the 431 homicide incidents. The age breakdown for perpetrators was 344 (56%) 18 or younger, 138 (23%) 19 or older, and 127 (21%) age unknown. Only half (53%) of the perpetrators were students. Approximately 37% (226) had no affiliation with the school, 2% (12) had some other affiliation (such as a parent or relative of the victim and, in one case, a faculty member), and for 8% (48), the relationship was unknown.

Most (498, 94%) perpetrators were male (sex was unknown for 81 perpetrators). There is much more racial/ethnic diversity than has been conveyed by the highest profile cases, which have focused on White males. The race/ethnicity of the perpetrators was classified as Black (229, 38%), White (90, 15%), Hispanic (97, 16%), Asian/Pacific Islander (22, 4%), American Indian/Alaska Native (4, < 1%), other (10, 2%), or unknown (157, 26%).

The motives for school homicides also differ substantially from the themes of bullying and mental illness that characterize some of the high-profile cases. For the 609 perpetrators, the most common motive for homicide was gang-related activity (252, 41%), followed by interpersonal disputes (192, 32%), brawl or street fights (102, 17%), retaliation (100, 16%), a dating partner problem or lover's triangle (47, 8%), robbery (41, 7%), and sexual violence (28, 5%). Only 34 of 609 (6%) of perpetrators could be reliably identified as having a diagnosis of a mental health condition or suspected of having a mental health condition. In contrast, a substantial group of perpetrators was identified as belonging to a gang (253, 42%) and having a history of arrest (182, 30%).

In the CDC study, the researchers compared 393 single-victim incidents with 38 multiple-victim incidents (Holland et al., 2019). As might be expected, multiple-victim incidents (95%) were more likely to involve a firearm than were the single-victim incidents (63%). Although the image of a suicidal attacker is prominent in the public perception of mass violence, the perpetrator in school homicides committed suicide in just ten (3%) of the single-victim incidents and ten (21%) of the multiple-victim incidents.

The 393 single-victim incidents and 38 multiple-victims incidents resulted in the deaths of 121 youth. Even though victims older than age 18 were not tallied and the number of incidents with four or more victims was not reported, there is useful information for understanding school homicides. The 514 youth victims of the 431 incidents represented < 2% of all youth homicides in the United States. The leading cause of death was firearms (70%), followed by stabbings (18%), blunt force (7%), asphyxiation (2%), or other/unknown means (2%). Approximately 58% of the deaths occurred on the school campus and 42% occurred off-campus, primarily on the way to or from school. For the 297 deaths on campus, there was an equal division between locations inside (51%) and outside (49%) the school building.

3 | HETEROGENEITY OF SHOOTINGS IN SCHOOLS

As the CDC study demonstrates, a fundamental problem with the profiling approach is that the perpetrators of school shootings are a heterogeneous group with different motives and background

characteristics (Holland et al., 2019). The variation among school shootings is reflected in other studies in which cases were selected in different ways. In a study of 179 shootings at schools between 1999 and 2018, in which the sample was restricted to those occurring during or immediately before or after the school day when students were at risk, researchers found that only 54 of the shootings resulted in a fatality, with a range from 0 to 26 and mean of .7 (Livingston, Rossheim, & Hall, 2019). The shooters fell into three age groups: younger than 15 (31 cases, 17%), 15 to 19 (85, 47%), and 20 or older (29, 16%; age missing for 34 shootings). The variation in offenders is further illustrated in a Department of Homeland Security database of school shootings (Riedman & O'Neill, 2018) in which an attempt was made to include every incident in which a gun is brandished or fired, for any reason and at any time since 1970. Based on 1,359 incidents, only half (52%) were carried out by students at the school, with others carried out by persons with no relation to the school, former students, persons in an intimate relationship with the victim, parents, teachers, and others.

Based on a series of intensive case studies, Langman and Straub (2009) constructed an insightful typology of "rampage school shooters." Langman identified a *psychopathic* group who were lacking in empathy or conscience, a *traumatized* group who were physically or sexually abused, and a *psychotic* group with schizophrenic-spectrum disorders. These groups differed in their motivation as well as in their developmental histories and risk factors for violence. This typology persuasively refutes the idea of a shooter profile and demonstrates the need to examine multiple pathways to mass violence.

Langman's typology of school shooters might be applicable to broader groups of violent offenders. For example, Cornell, Benedek, and Benedek (1987) proposed a similar three-group typology of juvenile homicide based on 72 defendants referred for pretrial forensic evaluation. The first and largest group was a crime group, which is similar to Langman's psychopathic group, consisting of youth with a background consistent with juvenile conduct disorder and a trajectory toward adult antisocial personality disorder. These youth typically displayed predatory or proactive violence in committing instrumental crimes such as robbery or drug dealing. In contrast, the conflict group tended to have little history of behavior problems but carried out an act of reactive violence in killing someone who had abused, bullied, or in some other way mistreated them. Finally, a small psychotic group acted under the influence of delusions and/or hallucinations that motivated their attack. This typology was supported in subsequent studies with independent samples (Cornell, 1990; Toupin, 1993). Typologies for school shooters and juvenile homicide cases might be applicable to adult cases as well because their motivational framework is not specific to youth.

4 | CHALLENGES OF PREDICTION RESEARCH

The barriers to conducting rigorous research on the prediction of mass violence seem insurmountable. First, the low base rate of ordinary acts of violence is widely recognized as a challenge for prediction research (Otto & Douglas, 2010), but the extraordinarily lower base rate of mass violence makes the target even smaller. If the bullseye for homicide is miniscule, the bullseye for mass violence is microscopic. Second, the observation that perpetrators of mass violence are heterogeneous makes the identification of reliable risk factors unlikely unless one subdivides the small group into even smaller groups. The microscopic bullseye must be fragmented into pieces that are placed on different targets. From this perspective, it does not seem feasible to demonstrate the ability to prevent mass shootings in schools without a massive sample of schools studied over many years.

Another important barrier to research is that efforts to validate the accuracy of violence predictions are ethically constrained. It is not permissible to conduct a prospective study to test the accuracy

of predictions by allowing potentially violent individuals an unimpeded opportunity to carry out an attack. Although retrospective studies in which researchers examine the characteristics of individuals who did or did not carry out an attack are ethically permissible, they are flawed in design because those individuals with a substantial risk of violence are likely to receive interventions that decrease their risk. When a prediction of violence is made, efforts to prevent violence will be employed that, if successful, make the prediction wrong. In some studies of potentially violent individuals released to the community, those with the greatest risk are excluded from study because they are incarcerated or hospitalized. Researchers are left with a biased sample in which those most at risk for violence are either excluded from study or are subject to real-world interventions (e.g., mental health counseling and increased surveillance) intended to prevent a violent act. In light of these limitations, it is not surprising that the prevailing view is that violence prediction is too inaccurate to be useful in identifying violent offenders (Fazel, Singh, Doll, & Grann, 2012; Yang, Wong, & Coid, 2010).

4.1 | Public health approach to prevention

After decades of efforts to improve prediction formulas, the field of violence risk assessment has moved toward a public health approach to place greater emphasis on prevention than on prediction (Otto & Douglas, 2010). The public health perspective is focused on the reduction of risk factors and on the promotion of protective factors (Coie et al., 1993). The public health approach to violence prevention was initiated by the CDC in 1985 with the Surgeon General's Workshop on Violence and Public Health (Mercy, Rosenberg, Powell, Broome, & Roper, 1993). In a 1993 landmark study funded by the CDC's National Center for Injury Prevention (Kellermann et al., 1993), the authors identified gun ownership as a risk factor for homicide in the home; however, the NRA lobbied for restrictions on gun research that led to the Dickey Amendment, which imposed a federal funding freeze on gun violence research (Jamieson, 2013). As a result, violence prevention researchers were forced to focus on individual risk factors other than firearms.

A common misconception is that prevention is not possible without accurate prediction of who will perpetrate a violent act. Through the public health model of prevention, however, we can see that prevention of unpredicted events can be highly effective (Mozaffarian, Hemenway, & Ludwig, 2013). For example, without any effort to predict individual motor vehicle accidents, preventive actions aimed at the general population, such as use of seat belts, driver training, and speed limits, have demonstrated benefits. Similarly, it is not possible to predict accurately who will die from lung cancer, but programs designed to reduce risk factors such as active and passive smoking have reduced the death rate. A threat assessment can prevent violence by helping individuals resolve problems and conflicts that stimulated their threatening behavior. Even if an individual is not actively planning or preparing to carry out an attack, an effort to address the underlying conflict or problem can prevent the situation from escalating. The provision of threat assessment services can have a preventive effect even if it is not possible to predict which individuals might have carried out a threat.

Another shift in the risk assessment field is a move away from static measures of risk toward recognition of the role of dynamic and situational factors. The risk of violence is more situational and transitory than risk scores imply (Borum, Bartel, & Forth, 2003). Risk scores, whether conveyed as numerical values or as ordinal classifications of risk (e.g., high, medium, or low), are designations in which the variability in youth behavior and their responsiveness to their environment are ignored. Even an aggressive youth is low risk when under supervision in a classroom, but risk progressively increases when he or she enters the hallway, leaves school, and goes out at night with friends. Risk is not a personal trait but a dynamic function of individual and environmental characteristics.

5 | SCHOOL THREAT ASSESSMENT

In its study of school shootings, the U.S. Secret Service observed that 81% of the student perpetrators had communicated to someone, usually a friend or a classmate, that they were thinking about or planned to carry out an attack at school (Vossekuil, Fein, Reddy, Borum, & Modzeleski, 2002). In most cases, the perpetrators had an identified grievance toward one or more of their targeted victims, and in more than two thirds of cases, they felt bullied or mistreated by others. Similarly, in the FBI study, the author noted the frequent leakage of violent intentions in the communications of students before they carried out school shootings (O'Toole, 2000). These observations showed support for the conclusion that school authorities should focus on the identification and investigation of student threats as a violence prevention strategy (Vossekuil et al., 2002).

The findings from other studies have indicated the importance of identifying potential aggressors through the communications they made to others prior to their attack. As a follow-up to the Secret Service study of school shootings, Pollack, Modzeleski, and Rooney (2008) focused on the importance of bystanders who had knowledge of an attacker's intentions and the factors that influenced their willingness to come forward. In studies of averted school shootings, scholars have found that violence was prevented because peers or others were aware of the aggressor's plans or intentions and reported the threat to authorities who could investigate it (Daniels, 2019; Daniels et al., 2007; Straub, Rosiak, & Solano, 2018). Based on a study of 51 averted shootings, Daniels (2019, p. 17) concluded, "most school attacks are averted because students report their concerns about another student's threat, plot, or other concerning behavior." Daniels also concluded that prompt response to a student report and investigation of the potential threat by school personnel and police were critical to successful prevention.

Although threat assessment was an unfamiliar concept to educators when it was recommended by the authors of the Secret Service and FBI reports, it was already recognized by law enforcement as a valuable strategy for preventing acts of targeted violence. Threat assessment developed as a standard practice by the U.S. Secret Service, the U.S. State Department, and the U.S. Marshal Service to protect federal officials. Threat assessment has also become widely used to prevent workplace violence (Meloy, White, & Hart, 2013), to protect public figures and celebrities from stalkers (Hoffman, Meloy, & Sheridan, 2014), and to prevent domestic violence (Kropp & Cook, 2014).

Threat assessment is a form of risk assessment that is conducted when someone threatens to commit a violent act or engages in threatening behavior. The term "behavioral threat assessment" is sometimes used to distinguish this process from a physical assessment of a facility's vulnerability to attack. The practice of threat assessment has evolved to include the identification, assessment, and management of threats (Borum, Cornell, Modzeleski, & Jimerson, 2010). In school settings, the term "threat assessment" does not capture its emphasis on resolving interpersonal conflicts and problems before they escalate into violence. Especially in schools, a threat assessment might be more appropriately termed "safety assessment and intervention" or "behavioral assessment and intervention."

Threats can take different forms. A threat may be directly communicated to an intended victim, or it may be indirectly communicated to a third party. Threats can be explicit statements of intent to do bodily injury or more ambiguous, such as references to getting revenge. Usually, there is a specific target or intended victim, but some threats are more diffuse, such as a threat to blow up a school or carry out an attack with no specific victims. Digital threats communicated by text or social media are increasingly common. Threats are usually verbal, but they might be represented in behavior that suggests someone intends to commit a violent act, for example, a photo of someone brandishing a firearm posted on a website. Whenever there is reasonable concern that someone intends to harm others, a threat assessment team can investigate and determine whether a threat exists and then identify appropriate interventions based on the seriousness of the threat.

6 | ADAPTATION FOR SCHOOLS

Threat assessment must be adapted for use in schools because there are important differences in the orientation of the threat assessment team, the kinds of threats and threatening individuals they assess, and their institutional goals and purpose. There is also concern that use of a strict law enforcement approach could result in the criminalization of student misbehavior (Morgan et al., 2014). A threat assessment conducted by law enforcement to protect public figures is concerned with identifying a potential assassin or terrorist. An adult who makes a threatening statement against a public figure, an employer, or someone else usually stands out as someone who has behaved abnormally. In contrast, threat assessment in schools is concerned with school-age children and youth who are more impulsive and emotional.

Compared with adults, young people engage in a great deal of verbal aggression and more often make threats simply as an expression of anger or frustration. For example, a survey of 4,400 high school students found that approximately 12% reported being threatened with harm by another student in the past 30 days (Nekvasil & Cornell, 2012). Only a small portion of student threats comes to the attention of school authorities, and most are not serious. As a result, school threat assessment teams are dealing with a higher base rate of aggressive behavior and must distinguish ordinary student bantering and arguing from more serious threats of violence.

Furthermore, acts of physical aggression and bullying are common among youth. According to nationwide results from the Youth Risk Behavior Survey (Kann et al., 2018), 24% of students reported being in a physical fight in the previous 12 months, with 9% reporting a fight on school property. Approximately 19% of high school students reported being bullied at school in the past 12 months. Six percent reported being threatened or injured with a weapon on school property in the past 12 months. Approximately 7% of students reported that they had not gone to school at least one day in the past 30 days because of concerns for their safety.

Law enforcement officers conducting a threat assessment in an adult setting such as a workplace or a government office place a strong emphasis on assessing the danger posed by a threatening individual, determining whether a law has been broken, and taking appropriate legal actions. In contrast, educators conducting a threat assessment in a school have a more complex situation. They work in coordination with law enforcement in the most serious cases, but more often they are dealing with student misbehavior rather than with criminal acts. Schools also have an overarching duty to educate all students regardless of their motivation and capabilities to succeed. Although employer-based threat assessment teams are concerned with workplace climate and resolving disputes, an employer ultimately can discharge a difficult employee or settle with an unhappy customer; in contrast, educators must seek ways to motivate, accommodate, and support all students.

7 | COMPREHENSIVE SCHOOL THREAT ASSESSMENT GUIDELINES

The Virginia Student Threat Assessment Guidelines manual (Cornell & Sheras, 2006) was developed in response to recommendations for school-based teams made by the FBI (O'Toole, 2000) and U.S. Secret Service and Department of Education (Vossekuil et al., 2002). The Virginia model was designed to provide school-based teams with a systematic approach in which the developmental characteristics of youth and the educational mission of the school were both recognized. In 2002, the threat assessment guidelines were formulated after extensive consultation with a workgroup of local educators and a review of common threat cases. The guidelines were reviewed by a board of national experts in law

enforcement, psychology, and risk assessment and then field-tested in 35 Virginia schools for a year. The guidelines manual was published in 2006 (*Guidelines for Responding to Student Threats of Violence*; Cornell & Sheras, 2006) and updated in 2018 (*Comprehensive School Threat Assessment Guidelines*; Cornell, 2018). The Virginia Student Threat Assessment Guidelines manual was then renamed the “Comprehensive School Threat Assessment Guidelines” (CSTAG) manual to recognize its use outside of Virginia and to distinguish it from general guidelines on threat assessment released by the Virginia state government.

7.1 | Threat assessment team

A school threat assessment team typically consists of a school administrator, several mental health professionals, and a law enforcement representative. In most schools, teachers are not expected to serve on a team, but they do provide valuable information in cases involving their students. The whole team is not engaged in every case because the model is designed to resolve simple cases quickly and efficiently, reserving the full team for the most serious cases.

The law enforcement member is usually a school resource officer (SRO) or another police officer who is assigned to the school. The SRO can advise the team on the law, conduct criminal investigations, and provide protective services in the most serious cases. The SRO role extends beyond enforcing laws to serving as a member of the school community who builds positive relationships with students (Canady, James, & Nease, 2012).

The team should include one or more mental health professionals, such as a school counselor, psychologist, and/or social worker. A mental health professional may be involved at multiple stages in a threat assessment, from the initial interview to gauge the seriousness of a threat to more extensive assessment of the student’s mental health status and need for services. Mental health professionals also conduct interventions such as counseling a distressed student or resolving conflicts between students.

A school-based team is preferable to an external team because it can respond more quickly and will have greater knowledge of contextual and situational factors within the school. Furthermore, if the threat is serious enough to warrant ongoing intervention, a school-based team is in the best position to monitor the student’s status. In a complicated case involving a serious threat of violence, however, a school-based team might consult with central administration and district-level consultants.

7.2 | Decision-tree process

The CSTAG model follows a five-step process¹ for conducting threat assessments (see Figure 1). At step 1, a team member interviews the student who made the threat and any relevant witnesses to find out what happened and determine whether the threat is serious. Threats that are not serious, termed “transient” threats, are easily resolved. Examples of transient threats are jokes, figures of speech, or expressions of feeling (e.g., “I am going to kill you for that!”) with no intention of carrying out the threat. If a threat is transient, at step 2 the team can resolve it through counseling and some action by the student to apologize or clarify what happened. A disciplinary action is appropriate, but the model stresses that in most cases there is no need for exclusionary discipline. In multiple studies (Cornell, 2018), researchers have found that approximately three quarters of threats can be resolved as transient cases in two steps.

If a team cannot resolve a threat as transient, or it is clearly a serious threat with intent to harm, it is classified as a “substantive” threat. At step 3, the team takes a series of practical steps to prevent the threat from being carried out. For example, the team might take precautions to protect potential victims by increasing supervision of the student and look for ways to resolve any conflict or problem that

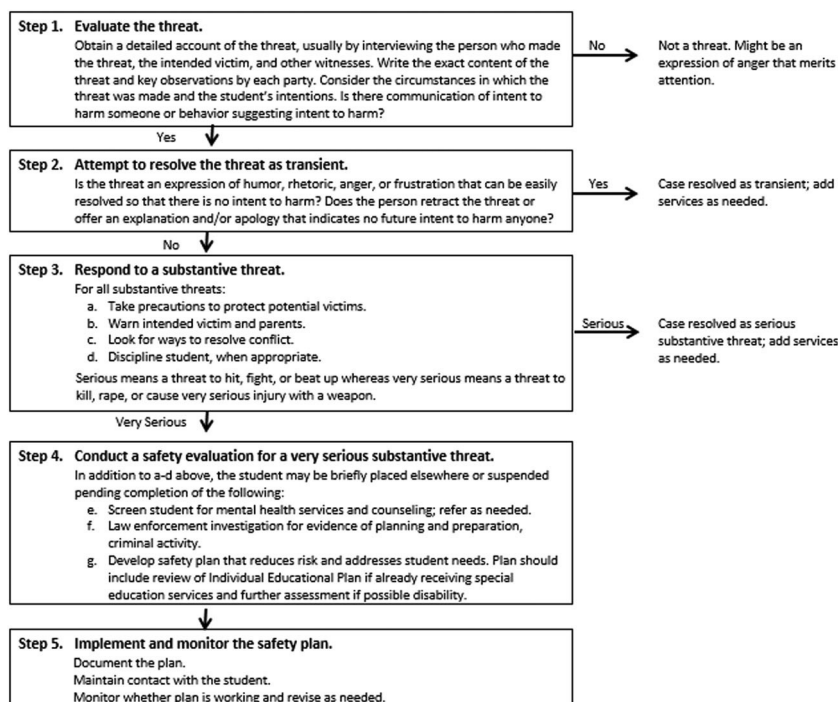


FIGURE 1 School threat assessment decision tree

underlies the threat. There will be disciplinary consequences based on the seriousness of the student's behavior. If a case involves a threat to hit, fight, or assault someone, the threat will be resolved at this step as a "serious substantive threat." If the threat involves more than a fight, such as a threat to shoot, stab, or severely injure someone, the threat is classified as a "very serious substantive threat" and the team moves to step 4. Across grades K–12, fewer than 10% of cases reach this step (Cornell, 2018).

At step 4, the team conducts a safety evaluation, which typically involves actions by both a school-based mental health professional and a law enforcement officer. The school-based mental health professional, often a school psychologist, counselor, or social worker, will interview the student and the student's parents. There may be additional interviews (conducted by the same person or other team members) with teachers or others who know the student. The student interview will focus on the reasons for the threat and screen the student for possible mental health services and counseling. The mental health professional is not asked to make a prediction of violence but to identify risk factors and strategies to reduce risk, using a standard interview protocol. The screening may lead to a short report in which the student's motivations in making the threat were described, identifying risk factors and recommending strategies for reducing risk, often by helping the student to resolve the problem underlying the threat. For example, a student might benefit from mediation to resolve a dispute, social skills training to improve peer relationships, an intervention to stop bullying, or mental health services. In this evaluation, new training for many school-based mental health professionals is not required, who routinely screen students for mental health needs and help them resolve problems in getting along with others.

The law enforcement investigation is typically conducted by the school resource officer on the team. The SRO might look for evidence of planning or preparation, acquisition of firearms, or other possible criminal activity. The SRO will advise the team on any legal actions or security steps that are needed.

In the model, the involvement of an SRO does not necessarily mean that a student will be charged with an offense or subject to arrest. On the contrary, in studies of hundreds of schools using this model, approximately 1% of student threat cases resulted in an arrest (Cornell, 2018).

The results of the mental health interviews and law enforcement investigation are combined into a safety plan. A safety plan identifies practical steps to reduce risk and meet student mental health needs. When the immediate safety concerns are addressed, the student might be referred for a special education evaluation. If the student is already receiving special education services, his or her Individual Educational Plan will need review.

At step 5, the team implements the safety plan and monitors its impact. The main purpose of the safety plan is to prevent violence by resolving the threat, addressing any factors (such as peer conflicts or bullying) that contributed to the threat situation, and returning the student to school or an alternative placement (Cornell, 2018). In very serious substantive cases, threat assessment teams maintain contact with the student and modify their plan as needed.

Although the idea of school threat assessment was conceived to prevent severe acts of violence by students, in practice, it is an approach that is used to respond to many less serious threats. Fewer than 10% of cases rise to the level of very serious substantive threats. Approximately 20% are serious substantive threats (fights), and the majority (70%) are transient threats. There is some variation across grades; for example, elementary school threats are disproportionately transient and the highest rates of substantive threats are observed in middle school grades (Burnette, Konold, & Cornell, 2019).

Threat assessment teams deal routinely with emotional outbursts by distressed students, peer conflicts, and bullying. The threat assessment process involves conducting interventions to help troubled students specifically, while also having the potential to improve the school climate more generally. Threat assessment also applies an approach to student misbehavior in which the student's motivation and intent are emphasized, which leads to less punitive discipline. As found in the research summarized next, schools using threat assessment make less frequent use of school exclusion and see reductions in racial disparities in suspension out of school.

7.3 | CSTAG threat assessment research

The CSTAG manual has been examined in a series of studies. The first two studies were field tests that resulted in demonstrating that school-based teams could carry out threat assessments in a safe and efficient manner (Cornell et al., 2004; Strong & Cornell, 2008). Across nearly 400 threat assessment cases, almost all students were permitted to return to school and few received long-term suspensions or changes in school placement.

School teams are trained to take an individualized approach to evaluating student threats rather than a zero tolerance approach in which the context and meaning of the student's behavior are not considered. Studies using pre-post measures of learning have indicated that staff training in CSTAG resulted in decreased support for zero tolerance and exclusionary discipline (Allen, Cornell, Lorek, & Sheras, 2008; Cornell, Allen, & Fan, 2012). School personnel demonstrated increased knowledge of threat assessment principles and the ability to classify cases reliably. These effects were observed across groups of school principals, psychologists, counselors, social workers, and school-based police officers.

In five controlled studies scholars have compared schools using CSTAG with schools not using threat assessment or using an alternative form of threat assessment. The first controlled study was a retrospective comparison of 95 high schools using CSTAG, 131 schools using locally developed procedures for threat assessment, and 54 schools reporting no use of a threat assessment approach (Cornell, Sheras, Gregory, & Fan, 2009). Students at schools using CSTAG reported less

bullying at their school, greater willingness to seek help for bullying and threats of violence, and more positive perceptions of school staff members than students in either of the other two groups. School records indicated that there were one third fewer long-term suspensions, after controlling for school size, minority composition and socioeconomic status of the student body, neighborhood violent crime, and the extent of security measures in the schools (Cornell et al., 2009). The results of the second controlled study showed that 23 high schools using CSTAG had a 50% reduction in long-term suspensions and a 79% reduction in bullying infractions compared with 26 control group schools that had no statistically significant change over a 2-year period (Cornell, Gregory, & Fan, 2011).

In a third study of 40 schools, half of the schools were randomly assigned to receive threat assessment training and 20 delayed training for 1 year (Cornell et al., 2012). In one school year, 201 students were identified as making threats of violence (approximately half in each group). Compared with control students, students in CSTAG schools were approximately four times more likely to receive counseling services and two-and-a-half times more likely to receive a parent conference. Notably, students in the intervention group were approximately one third as likely to receive a long-term suspension and one eighth as likely to be transferred to a different school.

In the fourth study, researchers examined suspension rates in secondary schools that had adopted CSTAG across the state of Virginia (JustChildren & Cornell, 2013). Among Virginia's 663 secondary schools (middle, high, or combined schools), the 398 schools that used CSTAG recorded 15% fewer short-term suspensions and 25% fewer long-term suspensions per year compared with the other 265 schools. A noteworthy finding was that short-term and long-term suspension rates were lower for both White and Black students in schools using CSTAG, and the lower rate for Black students substantially reduced the racial disparity in long-term suspensions.

In a fifth study, researchers compared 166 middle schools using CSTAG with 47 middle schools using an alternative model or 119 middle schools using no threat assessment approach (Nekvasil & Cornell, 2015). The number of years a school used the CSTAG model was associated with some notable school-wide outcomes, including lower long-term suspension rates and lower levels of peer victimization reported by students. School climate surveys completed as part of a statewide survey at all schools indicated higher student reports of fair discipline and higher teacher perceptions of school safety in schools using CSTAG.

7.4 | Need for more research

The findings from two field tests, four quasi-experimental studies, and one randomized controlled trial have supported the CSTAG model; however, there is a great need for more research. Although quasi-experimental and correlational studies are useful, more experimental studies are needed to demonstrate the causal effects of threat assessment and to examine its impact on students, staff, and the school as a whole. There is a need for longitudinal studies to follow the outcomes of individual threat assessment cases for both the students making threats and their intended targets. It would be important to investigate, for example, the effect of threat assessment on students' subsequent social-emotional and behavioral adjustment, as well as their academic progress and achievement. As noted, studies to assess the impact of threat assessment on rare acts of extreme violence such as mass shootings would require a huge sample of schools studied over a period of years to generate statistically reliable differences in violence rates.

There is also a need for research on the quality of threat assessment practices and the fidelity of implementation of threat assessment models. Furthermore, studies are needed to elucidate the critical factors in the threat assessment process that produce its effects. In this direction, in one study, the

inter-rater reliability and criterion-related validity of the distinction between transient and substantive threats among CSTAG threat assessment teams from 339 schools were investigated (Burnette, Datta, & Cornell, 2018). Researchers found that the transient/substantive distinction was made with adequate reliability but that there were identifiable areas for improvement, and that the two types of threats were associated with expected differences in threat characteristics and school responses. Notably, substantive threats were 36 times more likely to be attempted relative to transient threats.

In 2013, Virginia mandated the use of threat assessment in its K–12 public schools. The Virginia state government issued some general guidelines on threat assessment but allowed schools to use any model that is consistent with them. Our research team at the University of Virginia conducted a statewide assessment through the state's annual safety audit survey completed by school principals (Cornell, Maeng, et al., 2018). The survey responses revealed that, 2 years after the law took effect, all schools reported having threat assessment teams but only half of the schools reported conducting a threat assessment during the previous school year. A sample of 1,865 cases revealed some general trends. Threat assessments were conducted for students in all grade levels, but they were most common in grades 4–8. After assessment, only ~30% of the cases were judged to be serious threats to harm someone. Threats were more likely to be considered serious if the student had possession of a weapon, targeted an administrator, and threatened either battery or homicide. Also, a threat was more likely to be considered serious if the student was in middle school and receiving special education services. Schools reported that students attempted to carry out their threats in only 3% of cases (fewer than 1% were carried out, none resulting in serious injuries). Attempted threats were more likely to have been categorized as serious and to involve a threat of battery, and they were less likely to involve a threat of homicide.

A notable finding of the statewide study is that there were no statistically significant differences between Black, Hispanic, and White students in out-of-school suspensions, school transfers, and legal actions (such as arrest, criminal charges, and incarceration; Cornell, Maeng, Huang, Shukla, & Konold, 2018). These are welcome findings in light of the racial disparities observed in the use of exclusionary school discipline in Virginia schools. One explanation for this finding might be the emphasis of threat assessment on investigating and understanding the reasons for student misbehavior, as well as on the use of investment interventions to resolve the conflict or problem underlying the threat. Such an approach might be used to provide a generalizable strategy for school discipline reform, which is consistent with the emerging interest in restorative school disciplinary practices (Gregory, Clawson, Davis, & Gerewitz, 2016).

One challenge identified in the state assessment was to assure that all schools were taking steps to encourage threat reporting and were actively using their threat assessment teams. There was an apparent need to improve the quality and consistency of threat assessment practices. A related concern is that many staff on threat assessment teams had received little or no formal training, although the state provided a series of regional workshops available at no charge to schools.

To our knowledge, no specific models of threat assessment other than CSTAG have been tested in controlled studies, so additional research on other approaches to school threat assessment is needed. Comparative studies are also needed to determine the essential features of effective threat assessment and whether different models produce differential effects. For example, one of the distinguishing features of CSTAG is the strong emphasis on discouraging the use of zero tolerance and on identifying supportive interventions for students. The findings from a recent study indicate that students who receive a threat assessment are less likely to be suspended and less likely to be transferred to another school in schools using CSTAG compared with schools using the more general guidelines disseminated by the Virginia state government (Maeng, Cornell, & Huang, 2019).

8 | POLICY IMPLICATIONS

School threat assessment represents a fundamental shift in policy from the widespread use of zero tolerance discipline that employs school exclusion. Zero tolerance aims to deter youth violence by administering uniformly harsh punitive consequences for rule violations regardless of the circumstances of the misbehavior or the student's intentions. For example, even a minor infraction such as accidentally bringing a toy gun to school can receive automatic suspension or expulsion from school (Mongan & Walker, 2012). In contrast, use of a threat assessment approach considers the seriousness of the situation and the student's intentions to plan a calibrated response. In the studies reviewed in this article, researchers found that only ~1% of students receiving a threat assessment were expelled from school.

Threat also entails a shift in mindset from the prediction of violence to the prevention of violence. The field of risk assessment is moving away from the pursuit of predictive accuracy toward a broader approach of preventing violence by identifying risk and protective factors and taking actions to reduce risk through assistance for troubled individuals (Borum et al., 2003; Yang et al., 2010). Threat assessment is grounded in the goal of reducing risk by identifying the problem or conflict that underlies a student's threatening behavior and helping the student to resolve it.

Although mass shootings at school are horrific events that must be prevented, misconceptions about their nature and prevalence have driven schools to adopt less effective and costly policies, such as heavy investment in school security measures. The findings from the available research show no support for security measures to prevent shootings or reduce crime generally in schools (King & Bracy, 2019). The massive funding allocated to building security measures contrasts with the nationwide underfunding of human resources such as school counselors, psychologists, and social workers who can help troubled students before their problems escalate into violence (Whitaker et al., 2019). School-based threat assessment has the potential to help troubled students who might commit a school shooting but also students on a pathway that might lead to a shooting outside of school. The results of studies of persons who commit mass shootings outside of schools show similar characteristics as those who commit school shootings and that they might benefit from a more favorable and supportive school climate (Langman, 2020, this issue). Although school-based teams might not be in a position to know about threats from persons not connected to the school, the use of threat assessment by community mental health and law enforcement agencies has the potential to generate a school-community safety network that shares information and enables more comprehensive prevention efforts.

A cost-benefit analysis of threat assessment is needed to show its advantages over building security measures. Threat assessments make use of existing school personnel, although the current understaffing of school mental health professionals (Whitaker et al., 2019) indicates that some increased staffing would be appropriate. The training costs of threat assessment are modest relative to the hundreds of millions spent on physical security measures such as bullet-resistant glass, electronic doors, and panic rooms (Phenicie, 2018). Schools typically invest in a 1-day professional development workshop and the purchase of manuals for their threat assessment team members. There is also time spent revising school policies and educating students, parents, and teachers about the new approach. Threat assessment teams meet when there are threat cases or when they are reviewing the status of students receiving assistance.

Threat assessment seems well suited to the prevention of mass shootings, but rigorous, direct evidence is difficult to obtain. None of the nearly 2,000 K-12 public schools in Virginia has experienced a fatal shooting of any kind since 1998, but this cannot be attributed to the widespread use of threat assessment, a practice that was initiated in 2001 and was legally mandated statewide in 2013

(Cornell & Maeng, 2017). School shootings, and especially mass shootings, are so rare that a randomized controlled trial does not seem feasible.

A review of threat assessment cases in Virginia reveals that there have been hundreds of threats to shoot others that have come to the attention of threat assessment teams and that have been resolved without violence (Cornell et al., 2018). These cases include many students with characteristics similar to students who have committed shootings (Burnette et al., 2018), but this similarity is not adequate to claim an intervention effect. What can be said is that students who received a threat assessment almost never carried out their threat and, in thousands of cases involving threats ranging from simple assault to a mass shooting, have not injured anyone (Cornell & Maeng, 2018).

As the research findings indicate, there are potential benefits to threat assessment beyond violence prevention, such as reductions in the use of school exclusion through suspension, expulsion, or transfer. The finding that schools can administer disciplinary consequences to students without generating racial/ethnic disparities in school discipline that are widely seen in Virginia and nationwide is particularly noteworthy (Cornell, Maeng, Huang, et al., 2018). In addition, the responses to school climate surveys in two studies reveal some benefits in greater feelings of safety by teachers and reduced bullying reported by students in secondary schools (Cornell et al., 2009; Nekvasil & Cornell, 2015). In conclusion, threat assessment is a promising approach that merits broader adoption in our nation's schools.

ENDNOTE

¹ The original VSTAG model (Cornell & Sheras, 2006) used a seven-step decision tree with some redundancy. The revised model (Cornell, 2018) uses five steps to cover the same process.

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