

School Shootings: Current Status and Recommendations for Research and Practice

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Abstract

The recent increase in school shootings has brought about an urgency to renew efforts to understand and reduce them. In this article, the Division for Emotional and Behavioral Health reviews what is known about school shootings, including data related to incidence and shooter profiles. In addition, we describe responses to shootings, accompanied by data on effectiveness, when available. We conclude with recommendations for practice and a call for increased and rigorous research designed to understand and prevent school shootings.

Keywords

challenging behaviors, crisis intervention, policy issues, school climate, gun violence

The Division for Emotional and Behavioral Health (DEBH) began to draft this article about the time of the mass shooting that took place at Robb Elementary School in Uvalde, Texas, then the second deadliest school mass shooting in U.S. history. As we completed final edits, a subsequent shooting occurred at The Covenant School in Nashville, Tennessee. These events served only as the latest reminder of increasing gun violence on school campuses in the United States. Unfortunately, we know that others will follow. These tragedies illustrate the persistent and disturbing reality of increasing gun violence in the United States, from which schools are not immune (Everytown Research & Policy, 2023; Gun Violence Archive, 2023; Katsiyannis et al., 2018). In 2022, gun violence in the United States resulted in 44,351 deaths (including 24,090 suicides); 312 children ages birth to 11 years were killed and 681 injured, and 1,368 youth ages 12 to 17 years were killed and 3,806 injured (Gun Violence Archive, 2023). With regard to schools specifically, from 2013 to 2019 there were a total of 549 school shootings with 129 deaths and 270 injuries (Everytown Research & Policy, 2023). According to data from EdWeek (2022), fatalities from school shootings (including both children and adults killed) averaged 20.2 per year from 2018 to 2022.

In contrast to the upward trend in school-related gun violence, school-based violent acts and juvenile crime have reached historic lows. Specifically, the most recent data indicate that in 2019–2020, 77% of schools reported 1.4 million incidents (939,000 violent incidents and 487,000 nonviolent incidents) of crime at the rate of 29 incidents per 1,000 students enrolled compared with 85% of schools in

2009–2010 (Irwin et al., 2022). Similarly, across this time period, the rate of nonfatal criminal victimization (including theft and violent victimization) decreased for students ages 12 to 18 years, from 51 to 11 victimizations per 1,000 students (Irwin et al., 2022; Wang et al., 2022 see also, Everytown Research & Policy, 2023). Furthermore, in 2019, the 696,620 juvenile overall arrests were 58% fewer than the number of overall arrests in 2010, the juvenile disorderly conduct arrest rate was 77% below the 1996 peak, violent crimes were 69% below the 1994 peak, and the murder rate was 80% below its 1993 peak (Puzzanchera, 2022).

These data present a number of paradoxes. While the overall decreasing rate of violence among youth can be regarded as generally good news, the uptick in school shootings is a stark reminder that the public health crisis of gun violence in the United States reaches children even in presumably the safest of environments. That said, despite the increase in school shootings, schools are still among the safest places children spend time. As the data above confirm, children and youth are far more likely to be victims of gun violence outside of school than in schools (Nekvasil et al., 2015).

Several factors make understanding and responding to school shootings complex. In part, this stems from the extraordinary context in which they occur coupled with the young ages of victims. This may result in extreme emotional

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responses, heightened undoubtedly by the intense media coverage that follows, particularly when the shootings involve mass casualties (e.g., Uvalde, Parkland, Sandy Hook). Some have speculated these emotional responses, which are completely understandable, may lead to policies and practices that are misguided or, at best, unsupported by data (e.g., Landrum et al., 2019).

Still, the recent increase in school shootings, and indeed the fact they occur at all, demands that policymakers and public health officials, as well as researchers and educational professionals at all levels, redouble efforts to understand and address them. The aim of this article is to consider what is known about school shootings, what responses have been proposed or implemented to predict or prevent school shootings, and what is known to date about the relative effects of those strategies. Because a common theme in the aftermath of a school shooting is intensive scrutiny around the shooter (e.g., Was the shooter known as a threat? Were there signs of potential violence? Could the shooting have been predicted, and possibly prevented?), it is important to begin with an analysis of what is known about school shooters. Based on what is known at present, DEBH concludes with recommendations for practices that may show promise, and importantly, a call for more and better research designed to understand and prevent school shootings.

Data Pertaining to Shooters

To better understand potential predictors of individuals who may commit a school shooting, researchers and criminal justice organizations (among others) have exerted extensive efforts to identify characteristics of school shooters. The idea is that if traits can be identified, in conjunction with other signs of risk, then intervention and ultimately prevention may be possible. In 2019, the U.S. Secret Service National Threat Assessment Center (NTAC) issued a report titled “Protecting America’s Schools,” which was a study of 41 incidents of targeted school violence from 2008 to 2017. In a separate report on *plots* of targeted school violence, NTAC (2021) also analyzed 67 incidents of targeted school violence from 2006 to 2018 that were averted. We note that in their reports and analyses, NTAC uses the terms “attackers” to refer to those who carry out targeted school violence, and “plotters” to refer to individuals who plan but are not able to carry out an attack. National Threat Assessment Center found there was no perfect profile of a student who perpetrated attacks, with attackers varying in age, race, gender, grade level, academic performance, and student characteristics. The majority, however, were White (63%), male (83%), and averaged 15 years of age. This was consistent with an earlier report of incidents occurring from 1974 to 2000 (Fein et al., 2004). We also note that in the NTAC analyses, targeted violence included attacks that involved weapons other than guns, or often in addition to guns (e.g.,

explosives), but the majority of both attackers (61%) and plotters (96%) planned and/or carried out their attacks using firearms.

Despite being unable to create a singular profile of a school shooter, some common themes arose. Attackers were primarily motivated by a grievance with a classmate, school staff, or someone else they knew personally. These grievances were most frequently associated with bullying. Grievance, however, was not the only motive. Some attackers had a desire to kill (37%), die by suicide (41%), or sought fame and a desire to emulate previous mass shooters (10%). These findings, initially drawn from the NTAC (2019) analysis of school violence, were corroborated in the NTAC (2021) study of disrupted plots of student violence against schools.

Attackers also were likely to have a strong interest in violent topics and weapons, as evidenced by their research of previous violent attacks, drawings of dead students, writing about violent topics, abuse of animals, and consumption of violent media (NTAC, 2019). While the 2019 report focused on targeted school violence broadly, which included attacks with other weapons such as knives, NTAC found that in cases where firearms were used, nearly half of the attackers had ready access to a firearm (e.g., firearms stored in home but not secured). Similarly, the examination of disrupted plots found that in 76% cases, student plotters had access to at least one weapon, with two-thirds having access to firearms (NTAC, 2021).

Analysis of attackers’ behavioral histories showed half had been in contact with law enforcement prior to the attack, one-third had been arrested previously or were facing criminal charges, and half had a history of substance use/abuse. Most attackers had experienced severe punitive disciplinary consequences at school due to a range of behaviors (e.g., profanity, physical assault, classroom conduct, threatening or violent behaviors). This is in contrast to plotters, for which only 37% had engaged in behaviors that elicited disciplinary school actions (NTAC, 2021).

Psychological themes also emerged from both NTAC studies. For instance, over 60% of attackers exhibited signs of depression and/or experienced suicidal thoughts, with 40% of attackers having a mental health diagnosis by the age 14 (NTAC, 2019). This far exceeds the national prevalence rates of approximately 20% (Whitney & Peterson, 2019). About 70% of plotters also exhibited signs of mental health issues (NTAC, 2021). It is important to note, however, that the vast majority of individuals experiencing symptoms or even diagnosed with mental health disorders do not engage in violence. Evidence of narcissism emerged as notable in many attackers. Narcissism is characterized by an inflated sense of self and a lack of empathy (Garwood & Gage, 2021) and is recognized by the U.S. Federal Bureau of Investigation (FBI) as a risk factor for school shooters (Bondu & Scheithauer, 2015). This trait is associated with

attackers' lack of respect for authority and views that rules do not apply to them. Only a small portion of both attackers and plotters had neurological or developmental concerns (NTAC, 2019, 2021).

Finally, factors associated with home life, stressors, and bullying appear to increase one's risk for committing school violence, although these variables cannot predict a specific student who will become violent or a school shooter. An alarming 94% of attackers experienced home life stressors or *adverse childhood experiences* (ACEs), including (but not limited to) parental divorce, family financial difficulty, or a parent or sibling who was incarcerated or abusing substances. All attackers experienced social stressors, with over half reporting a bullying incident as a significant stressor just prior to the attack. Among these, 80% reported they were victims of bullying, while only about a third were perpetrators of bullying (NTAC, 2019). Similarly, about half of plotters reported being bullied by classmates (NTAC, 2021).

More recently, Dowdell et al. (2022) examined the local and national media news reports of 25 school shooting cases perpetrated by males and occurring in America from 2013 to 2019. They found 88% of school shooters had at least one social media account (e.g., Facebook) and 76% of shooters had posted content related to guns and threats of harm. Given the proliferation of social media and its daily use by both school-age youth and adults, coupled with shooters' tendency to post disturbing messages and photos, social media may play an important role in uncovering potentially suspicious or dangerous information (Dowdell et al., 2022).

Responses to School Shootings

In the absence of a well-developed science on preventing and responding to school shootings, a number of policies or practices have been proposed, or have evolved as default responses or reactions. Some are certainly grounded in evidence, although the evidence base is limited and still emerging. We consider some of the more common ways that schools react to school shootings or threats of extreme violence, including a brief overview of the available evidence that speaks to the potential effects of each.

Disciplinary Actions

Perhaps the most common response to threatening, planning, or carrying out a school shooting or other acts of student violence is to apply a consequence. Such consequences typically come in the form of exclusionary and punitive measures. Many decades of research, however, have highlighted the limitations of this type of response to school violence, as well as behavior problems generally. Exclusionary procedures often result in academic underperformance,

dropout, and delinquency (Noltemeyer et al., 2015). In addition, research indicates they are applied disproportionately, adversely affecting minoritized students and those with disabilities (Gage et al., 2019; Whitford et al., 2016). Furthermore, exclusionary discipline carries a heavy societal financial cost (Rumberger & Losen, 2017). For example, in 2017–2018, students missed 11,205,797 school days due to out-of-school suspensions. Again, these were disproportionately applied to Black students and students with disabilities. Specifically, Black students accounted for 38.2% of suspensions despite representing 15.1% of the school-age population, while students with disabilities accounted for 24.5% of suspensions but represented only 13.2% of enrollment. Black students also accounted for 28.7% of law enforcement referrals and 31.6% of arrests at school. Furthermore, Black students with disabilities fared even worse, accounting for 8.4% of law enforcement referrals and 9.1% of arrests, in spite of representing only 2.3% of special education enrollment. These referrals and arrests also represented a 12% increase in referrals and 5% increase in arrests, for this group, compared with rates in the 2015–2016 school year (U.S. Department of Education, 2021). School-based arrests are controversial, often occurring for noncriminal behavior and governed by vague and constitutionally questionable state disorderly laws (see below). Nonetheless, 31 states have either statewide code provisions or municipal ordinances criminalizing conduct on school campuses (Blad, 2016; Rivera-Calderón, 2019; see also, *Kenny v. Wilson*, 2018).

Zero-Tolerance Policies

A disciplinary theme that underlies exclusionary discipline in particular is known as *zero tolerance*. The idea of zero tolerance gained traction in the 1980s when policymakers sought first to make schools drug-free zones (later applied similarly to the idea of gun-free school zones) and thus implemented swift and harsh penalties for such offenses. Proponents believed that zero-tolerance approaches would reduce or eliminate the problem by punishing or removing violators, serve as a deterrent to would-be rule violators, and allow administrators to apply disciplinary actions fairly and equitably by simply following the letter of the law. Unfortunately, research has consistently suggested that these ideals were not realized. The American Psychological Association (APA) Task Force on Zero Tolerance (2008) published a synthesis of nearly two decades of research on zero tolerance and concluded that “despite a 20-year history of implementation, there are surprisingly few data that could directly test the assumptions of a zero tolerance approach to school discipline, and the data that are available tend to contradict those assumptions” (p. 852).

Research indicates students who are suspended from school lose instructional time and, compared to their peers,

are less likely to graduate on time and more likely to drop out of school and to become involved in the juvenile justice system (U.S. Government Accountability Office [GAO], 2018). LiCalsi et al. (2021) reported out-of-school suspension had particularly severe and consistent negative effects on students' educational outcomes compared to in-school suspension days. Furthermore, the long-term injurious effects of exclusionary discipline may be especially acute for multiply-marginalized students with disabilities who also are students of color, as they may face even more challenges when they are not able to receive a quality education.

Despite these findings, schools regularly suspend students for minor misbehavior, such as disruption, incorrigibility, or noncompliance (U.S. Department of Education, 2021). In short, the harmful effects of zero-tolerance policies are increasingly clear. As the APA Task Force on Zero Tolerance (2008) concluded based on empirical data, "Zero tolerance has not been shown to improve school climate or school safety" (p. 860).

School Security and School Resource Officers

In recent years schools have implemented a variety of security measures, particularly related to accessing school buildings. In 2019–2020, 97% of schools reported controlled access to school buildings, 91% indicated the use of security cameras, and 77% required faculty and staff to wear badges or picture IDs. Also, the percentage of schools reporting the presence of security staff at least once a week increased from 43% in 2009–2010 to 65% in 2019–2020; 96% of schools with 1,000 or more students enrolled reported having one or more security staff members present (Irwin et al., 2022). In 2015–2016, there were 42,600 security guards (31,500 full time), 52,100 school resource officers (SROs; 28,600 full time), and 15,500 sworn law enforcement officers (6,500 full time) on school campuses in the United States (U.S. Department of Education, 2016). Although it is not possible at present to assess the specific effects of controlled access, cameras, and ID procedures, research on the presence of SROs has yielded mixed results. Shaver and Decker (2017) found a negative relation between the presence of SROs in public schools and reports of offense and juvenile arrests. Zirkel (2019) conducted an empirical analysis of the case law specific to SROs and found the use of SROs resulted in measurable addition to litigation in the school context, a shift from proactive to punitive practices, and notable instances of harm to students. In a follow-up article, Zirkel (2019) analyzed 22 court decisions specific to the actions of SROs in response to behavior of students with disabilities and reported SROs used excessive force, even when the behavior was disability-connected and not substantially dangerous to self or others. More recently, researchers examined data from U.S.

schools between 2014 and 2018 to evaluate the impact of SROs and found SRO presence reduced some instances of violence and other serious offenses in schools, but it did not prevent school shootings or gun-related incidents (Sorensen et al., 2022).

Despite research indicating mixed results regarding the effects of the presence of SROs, the number of schools having SROs continues to grow. Some researchers have reported positive perceptions about the presence of SROs in improving school safety (Jennings et al., 2011; McDevitt & Panniello, 2005). At the same time, research on school criminalization has highlighted that SRO presence is associated with significant increases in various types of school crime (Fisher & Devlin, 2020) as well as student arrests (Homer & Fisher, 2020). Gottfredson et al. (2020) compared two types of schools, those that had enhanced staffing of SROs versus those that did not increase SRO staffing. Their findings indicated increasing SROs' presence in schools did not actually improve school safety, but it did increase exclusionary responses to school discipline incidents. There is clearly a need for more research on precisely how the presence of SROs impacts levels of school crime and the severity of responses to school crime.

Lockdown and Active Shooter Drills

One way schools prepare for crises is to conduct drills; a common practice in U.S. schools for decades has been fire drills. More recently it has become common for schools to conduct preparedness drills for the potential intruder or shooter entering a school campus (i.e., active shooter drill). As with most aspects of school shootings, research on the impacts of these types of drills is emerging but still limited. Historically, the most common approach to drills designed to prepare for the potential of a school shooting has been for schools to engage in a lockdown procedure where students and staff lock doors and hide (U.S. Department of Education, 2013). However, past school shooting events suggest this may be a fatal error. For example, during the 1999 shooting at Columbine High School, nearly half of the student body ran from the school and survived, while 10 students were killed in just 7 min while hiding under desks in the school library. At the shooting on the Virginia Tech campus in 2007, 27 of the 32 victims were killed while hiding in a classroom using a traditional lockdown approach. Only 19% of active shooter events are ended by the presence of the police (Klinger & Klinger, 2018), suggesting those faced with an active shooter event may need to take additional steps beyond a traditional lockdown for the best chance of survival.

The U.S. Department of Education, U.S. Department of Homeland Security, and the International Association of Police Chiefs agree that a lockdown-only approach is no longer best practice. Instead, a leveled lockdown approach

has been recommended when dealing with an active shooter event (Klinger & Klinger, 2018). During Level 1 (Outside Threat), exterior doors are locked, access to the school is restricted, nobody leaves the building, and movement inside the school is limited. During Level 2 (Inside Threat), classrooms are locked with students and staff inside, all students and staff are accounted for, and preparations are made to move to Level 3, if necessary. During Level 3 (Imminent, Life-Threatening Danger), a run–hide–fight approach is recommended where students and staff evacuate (i.e., run) via doors or windows if it is possible to safely escape the school building. The proximity of the threat to the evacuation route should be considered. If running is not an option, lockdown enhancements should be put in place (i.e., hide). Even though most school doors open outward because of fire codes, barricades can still save lives because nearly 70% of all active shooter events end in less than 5 min. Finally, during a confrontation with the shooter, aggressive force (i.e., fight), intended to incapacitate the assailant, is recommended (U.S. Department of Education, 2021). At all levels, students and staff need to know why it is important to account for everyone, to react to commands quickly, and to immediately obey commands from emergency responders (Klinger & Klinger, 2018).

Preliminary data to date suggest leveled lockdown drills are effective, and this is evident in two ways. First, research suggests participants can in fact master the key steps involved in a leveled lockdown (e.g., locking doors, hiding appropriately, turning off lights; Schildkraut et al., 2020). More importantly, successful engagement in leveled lockdown procedures appears to be associated with fewer fatalities in real-world incidents of school violence. Schildkraut et al. (2023) studied both the effects of leveled lockdown drills on the skills and behavior of school staff and students and the impacts of this training on outcomes. They found not only that leveled lockdown drills lead to increased mastery of the skills associated with lockdown procedures but also these procedures significantly improved outcomes in terms of fatalities and injuries.

While the most important focus of such drills is on keeping people safe in the event of a threat of violence, a secondary concern pertains to the impact of the drills themselves on things like student perceptions of safety, anxiety, and their general well-being. To date, this research is mixed. Some research has indicated active shooter drills in high school may be related to increased feelings of fear and reduced feelings of school safety (Huskey & Connell, 2021), or that active shooter drills may actually cause harm in the form of secondary trauma (Waselewski et al., 2020). In contrast, other studies suggest such drills either had no impact on students' anxiety (Zhe & Nickerson, 2007) or may in fact lower anxiety in some students (Nickerson & Schildkraut, 2021). When drills were conducted properly, students reported feeling more prepared

to handle future assailant attacks, should they occur in their school (Dickson & Vargo, 2017). It is clear more research on these topics is warranted. Finally, there is additional concern about the inclusion of overt sensory elements in lockdown or active shooter drills. This includes drills in which students or staff may not know whether an event is a drill or an actual emergency, as well as those that mimic a true emergency (e.g., with actors playing the role of a shooter or intruder, or of wounded individuals; sounds of gunfire). At present there appears to be no evidence of any benefit or rationale for including a sensorial experience in these drills, which is consistent with the National Association of School Psychologists' recommendations that live simulations of assailants attacking a school are unnecessary (NASP, 2022).

Specific recommendations for lockdown and active shooter drills will surely evolve as research informs such planning. In the meantime, DEBH recommends schools plan any such drills in collaboration with local law enforcement and school crisis teams, and with intentional collaborative planning with trained school psychologists or mental health professionals. Such professionals can ensure the planned events are trauma-informed and aligned with the developmental needs of involved students (Erbacher & Poland, 2019), and can help support and train staff in recognizing and responding to symptoms of trauma at any point (NASP, 2022).

School Disorderly Laws

Another controversial issue related to school discipline, particularly to school-based arrests, involves school disorderly laws. These laws, which criminalize and allow arrests for student behavior, have been criticized for being overly vague, having lifelong negative consequences, and disproportionately affecting underrepresented groups (ACLU Washington, 2017; Rivera-Calderón, 2019; Smith, 2020). Nonetheless, 31 states have laws or local ordinances criminalizing student conduct (Rivera-Calderón, 2019), with 10,000 arrests resulting from applying these laws (Ripley, 2016). Illegal behaviors include willfully or unnecessarily interfering with, disturbing, or acting in an obnoxious manner (South Carolina), boisterous behavior (North Dakota), and annoying behavior (Arkansas; Justice Policy Institute, 2011).

In South Carolina in 2015, disturbing school was the second most common juvenile charge after misdemeanor assault, with an average of seven students being arrested daily. However, the law in South Carolina was amended in 2018 (as a result of *Kenny v. Wilson*, 2018) following a highly publicized incident in which the SRO threw a student off her desk and dragged her along the floor. This incident resulted in the arrest not only of the “misbehaving” student but also of the bystander who verbally protested the

incident. In deciding the case, court findings revealed thousands of students received referrals for disorderly conduct statewide, with a disproportionate number of Black students being affected. Amending or repealing these laws can have a profound effect. For example, after a Texas disorderly conduct law was amended to prohibit school-based student citations for behaviors such as chewing gum and talking back to teachers, charges filed for minor offenses such as disrupting class dropped 61% (about 40,000 charges; Ripley, 2016).

The importance of this issue is underscored by the deleterious short- and long-term consequences of arrests for involved students. For example, an arrest results in academic underperformance (ACLU Washington, 2017) and doubles the odds of dropping out of school (e.g., Advancement Project, 2013). Studies have shown lower graduation rates for arrested students (26%) versus students with no involvement with the justice system (64%), and among those who did graduate, students who had been arrested were 50% less likely to pursue college (Kirk & Sampson, 2013). Finally, students who have been arrested have an increased likelihood of arrest in adulthood (Lieberman et al., 2014), higher unemployment rates, and lower earnings than peers who are not arrested (Bureau of Labor Statistics, 2022).

Gun-Free Zones

The Gun-Free School Zones Act (GFSZA) of 1990 prohibited the carrying of a gun on school grounds or within 1,000 feet of a Grades K through 12 school, both private and public, but this law has not been without controversy. Theoretically, as proponents contend, removing the ability to carry a gun on a school campus should eliminate the risk of a firearm injury (RAND Corporation, 2023). However, school shootings have increased in the 30-plus years since the act was passed, and opponents of the GFSZA have argued that it makes schools an easy target for potential attackers, as they know they will be met with little to no opposition (Murphy, 2014). While establishing that a specific law or regulation caused or prevented an individual school shooting is implausible from a research perspective, research on the connection between gun laws and mass shootings has suggested gun-free school zones are not specifically targeted by assailants (Fox & Fridel, 2018).

Despite the logic involved in not allowing guns on school grounds, there are still arguments that armed security, including potentially arming teachers, would enhance school safety (see LaPierre, 2018). In contrast, opponents of arming teachers have suggested this would actually increase the risk and occurrence of gun violence on school property (Givens, 2015; Rogers et al., 2018) and, further, that armed school personnel would transform the educational environment

from one focused on motivation and engagement to one of a defensive stronghold needing constant protection from would-be assailants. Citing lack of training for teachers and the potential for confusion in the midst of an active shooter event, law enforcement officials have expressed concern about allowing teachers to carry firearms (Downey, 2018). Finally, many (e.g., Drane, 2020) have asserted the potential for accidents (e.g., leaving a firearm behind in a bathroom, unintended firing of a weapon) far outweighs any hypothetical benefit to promoting a policy of arming teachers and doing away with gun-free school zones.

Threat Assessments

Because research indicates it is not possible to establish profiles of potential school shooters, most schools have employed threat assessments. The purpose of these assessments is to evaluate whether an individual who has made a threat actually poses a threat. That is, the assessment is designed to ascertain the capacity of an individual to carry out a threat *after* an individual (or individuals) has engaged in a spoken, written, or gestured expression to harm another or others. The premise is that approximately 75% to 80% of school shooters communicated their intentions prior to the attack (NTAC, 2021). Threat assessments are used to distinguish *transient* threats, which often occur in anger and are readily resolved, from *substantive* threats that involve serious intent to harm with a plan and means. This considers the developmental level of students within the school context, particularly those who have poor emotional regulation skills and lack effective problem-solving approaches (Ross et al., 2022). Division for Emotional and Behavioral Health is concerned that students with or at risk of emotional or behavioral disorder may make more threats than their peers with other disabilities or without disabilities (e.g., Kaplan & Cornell, 2005), although there are no data to suggest they are more likely to carry out acts of extreme violence. This of course heightens the importance and need for careful analysis of these threats.

At least four models of threat assessment have been described in the literature: the U.S. Secret Service Threat Assessment Guidelines, ACTION, Virginia Student Threat Assessment Guidelines (revised to become the Comprehensive School Threat Assessment Guidelines), and the Network Against School Shootings (Ross et al., 2022). Although these models provide extensive detail about the process, we provide only a brief overview of general commonalities. First, a threat assessment team is established. This team responds to threats of violence by identifying the person or situation of concern. The team then gathers additional information to determine whether the threat is transient (i.e., an expression of emotions that can readily be resolved) or substantive (i.e., serious intent to harm with a plan and means). Intervention and follow-up are then implemented. If the team determines a student threat

is substantive, a management strategy is developed to prevent the possibility of an attack, protect potential targets, and provide the student with supports to address their challenges.

Community Actions

Schools are embedded within larger society, and the impact of any school-based interventions on gun violence at large is unknown. What is increasingly evident is that exposure to community gun violence has a significant impact on children. In a comprehensive review, Rajan et al. (2019) provided data on the impacts of gun violence on children, and they argued that such exposure should be considered an ACE, thus classifying it as a stressful or traumatic event that has an impact on the healthy development of children and adolescents (Substance Abuse and Mental Health Services Administration [SAMHSA], 2018). There is substantial evidence that ACEs have a long-term impact on youth and lead to harmful and risky behaviors, in addition to emotional, behavioral, and health challenges (e.g., Boullier & Blaire, 2019). Furthermore, childhood exposure to gun violence (witnessing or experiencing a shooting) significantly increases the likelihood of perpetrating a violent crime during adolescence (e.g., Bingenheimer et al., 2005). Data also have indicated high school students who report recent firearm possession are more vulnerable to a number of other risk variables, such as substance use, poor mental health, and previous victimization (Ruggles & Rajan, 2014).

As with school-based interventions, community-based interventions should be evidence-based and multifaceted. A number of local intervention programs have shown promise in reducing violence (e.g., street outreach, Cerdá et al., 2018; *Safe Streets*, Webster et al., 2013). For example, Chicago-CeaseFire, a program designed to train individuals in the community to interrupt violence and proactively reduce community conflicts, resulted in significant reduction in shootings and attempted shootings across a 16-year time span in five of seven intervention sites, in spite of implementation challenges (Butts et al., 2015). In addition, replications (e.g., Operation Ceasefire) have reduced community homicides by as much as 60% (Braga et al., 2014).

Interventions also must address youth access to firearms. Approximately, 75% of school shooters obtained their firearm from the home of a parent or close relative (NTAC, 2019). Thus, it would seem that efforts to restrict the ease with which youth acquire or gain access to weapons should also be a priority.

Summary and Recommendations

Despite the rise in mass school shootings, schools are still among the safest places in which children and youth spend time. Efforts to prevent school shootings demand further

research and intervention on multiple fronts, including increased research on gun violence, both in and outside of schools. As a professional organization, DEBH joins with the Council for Exceptional Children and other divisions to support legislative initiatives that have the potential for reducing gun violence in and outside of schools, including the need for gun laws that require comprehensive background checks, bans on large-capacity magazines, locks preventing youth accessibility, and extreme risk protection that provides for gun removal in situations of threat of lethal violence.

As a professional organization, DEBH provides professional development and support for educators who work with youth with emotional and behavioral needs. While students with disabilities and those with mental health needs are no more likely to perpetrate school shootings than students without disabilities, there is a history of mental health needs among school shooters (NTAC, 2019). Furthermore, students with disabilities are more likely to be bullied in school, which is common in the profiles of school shooters (NTAC, 2019, 2021). These facts should not be used to further stigmatize students with mental health needs; instead, steps should be taken to provide universal supports to improve the mental health and social and emotional development of all students. Schools need to take preventative measures to equip students with necessary skills to improve their personal emotional regulation and coping mechanisms as well as interpersonal interactions with others. For example, schools across the country have begun to emphasize social-emotional learning to promote the development of these skills, which include strategies for resolving conflicts. Furthermore, school shootings and school violence cannot be viewed just as problems of school or law enforcement. They are shaped by various environments (family, community, neighborhood, societal) and entire life experiences and influences, both positive and negative. As such, we offer several key recommendations for schools.

Recommendations for Schools

To begin, schools must foster a culture of safety and trust so all members can learn and work. This involves taking proactive steps to facilitate the success of all learners. Research has clearly shown multi-tiered systems of support (MTSS), such as school-wide positive behavior intervention and supports (McIntosh et al., 2010), have resulted in increased feelings of safety and more friendly and supportive work environments (Bradshaw et al., 2008; Horner et al., 2009). Multi-tiered systems of support frameworks involve clearly defining behavioral expectations for all learners and procedures for explicitly teaching, reinforcing, and monitoring those expectations. Expectations are monitored so students receive the appropriate level of support needed to facilitate their success. Multi-tiered systems of support frameworks

also are characterized by procedures to create school climates that are positive, inviting, and collaborative. This is the first step for fostering safe and trusting school environments.

Within MTSS frameworks, systematic screening procedures for academic and behavioral risk are essential. We suggest schools also adopt mental health screeners that consider students with varying needs. For example, many cost-effective screening tools glean information on students with both internalizing (e.g., anxiety, somatization, depression) and externalizing (e.g., aggression, disruption, negative attitude) behavior patterns (e.g., Student Risk Screening Scale—Internalizing and Externalizing; Lane et al., 2015). While most students with these behavior patterns never escalate to the point of school violence, it is important to support students at risk for mental health needs as early detection and subsequent intervention are essential for student success. Data suggest students with mental health needs are under-identified and under-served (Forness et al., 2012). Furthermore, research indicates relying on referral methods (e.g., office disciplinary referrals) is likely to miss students with internalizing problems (McIntosh et al., 2009). Using screening data to consider the needs of all students within a school is an essential practice that all schools should adopt.

Schools also must work to increase the availability and quality of mental health services offered within schools. The Biden administration prioritized addressing shortages of school psychologists, counselors, and social workers within both the fiscal year (FY) 2022 and FY 2023 federal budgets. Additional budget allocations were IDEA Part D personnel preparation grants to address special education teacher shortages; Project Advancing Wellness and Resiliency in Education, a federal initiative supporting mental health grants to increase access to school-based mental health services and support the use of trauma-informed approaches; and Full-Service Community Schools grant programs designed to leverage school and community partnerships to better meet the needs of students and their families (NASP, 2022). Increased funding of these types is essential to helping schools identify and appropriately support those students in greatest need.

Given that threats occur in schools, DEBH supports the recommendations of professional organizations (e.g., NASP, 2022) and the U.S. Secret Service (NTAC, 2019) that schools should establish multidisciplinary teams and implement some form of formal threat assessment. We recognize that no mechanism can prevent all incidents of violence, but emerging data suggest threat assessment provides a research-based framework through which to analyze threats and mobilize responses. Studies have shown, for example, that schools using threat assessment implement a variety of responses to threats, including mental health supports and behavior support plans (e.g., Crepeau-Hobson &

Leech, 2022); that exclusionary disciplinary responses are reduced when threat assessment is used (Maeng, Cornell, et al., 2020); and that students perceive discipline is more fair and that student aggressive behavior is reduced, while teachers also report feeling safer at school (Nekvasil, Cornell, & Huang, 2015).

We are also aware of concerns around threat assessment regarding the potential for disproportionate outcomes for students of color and for students with disabilities, although in both cases data are mixed. For example, while Ross et al. (2022) identified disparities in students who receive threat assessment across Black, Latinx, and Native American students, as well as those with disabilities, Cornell et al. (2018) found no discrepancies among Black, Hispanic, and White students in the outcomes of threat assessments, noting the strongest predictors of consequences were the student possessing a weapon and the team determining the threat was serious. Similarly, while et al. (2020) and Cornell et al. (2018) found higher odds of suspension for students with disabilities following threat assessments, et al. (2020) found rates were similar.

Thus, while we concur with professional recommendations that schools should implement some form of threat assessment, we strongly endorse continued research into the development and refinement of threat assessment models. This ongoing research should address ways to ensure teams are adequately trained in threat assessment protocols and threat assessments are implemented with fidelity, and in particular that threat assessment protocols maintain a focus on the potential for disproportionality in who receives a threat assessment, as well as the outcomes of threat assessment.

Recommendations for Research

As schools work to implement positive and preventive approaches and increase supports for student's social, emotional, and behavioral needs, more research is needed on the effectiveness of these and other practices, especially their specific impacts on decreasing violence and improving student outcomes. This will require ongoing research and evaluation efforts, which demand both funding and the development and support of collaborative partnerships between researchers and school personnel. Although not intended as a comprehensive list, the following seem to be key research priorities:

- The use of MTSS as a means of violence prevention: There is significant evidence of the benefits of tiered models of support on student and whole-school outcomes, but more research is needed on the specific impacts of these models on school violence. This might include further examination of the utility of dedicated mental health screeners in identifying and

supporting students who show specific risk, and assessing the outcomes of such supports on school violence.

- The use of threat assessment models for identifying students in need of targeted supports, as well as in averting potential acts of violence: While we endorse the use of threat assessment, DEBH believes there is reason to continue investigating the efficacy of threat assessment in preventing violent behavior, as well as how best to train school teams to implement protocols with fidelity, and to ensure disparities among racial groups and students with disabilities are avoided.
- The impact of SROs (armed and not armed) on school violence, as well as on broader issues of school climate and students' sense of safety and well-being: This should include assessment of the ways SROs are trained and the functions they serve. (e.g., Can SROs be an effective component of positive, tiered models of support?)
- The use of leveled lockdown as a part of active shooter drills: Foremost, this should include the assessment of its effectiveness as a safety measure but also assessment of various strategies and components of such drills and their impacts on other outcomes (e.g., students and staffs' sense of safety, anxiety, mental health, and well-being).
- The reasons for incongruence between current practice and research-supported recommendations: In some cases, available evidence does not support current practice (e.g., the increase in SROs in schools). Understanding why this occurs might inform movement toward more consistent evidence-based approaches to school safety.
- More and better research on school shootings and gun violence generally: We note federal funding on gun violence was limited for many years. As those specific restrictions have been essentially lifted, greater federal support for research on gun violence, both in and outside of schools, is sorely needed. This should cut across all of ideas noted in this article, including research on proactively addressing mental health issues, predicting and preventing specific school shootings, preparing students and schools for potential crises through appropriate drills and procedures, and supporting students, staff, families, and communities in the aftermath of a school shooting or indeed any act of extreme violence.

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