School Mental Health
https://doi.org/10.1007/s12310-021-09489-9

ORIGINAL PAPER

Mass School Shootings: Review of Mental Health Recommendations

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Accepted: 5 November 2021

Abstract
Mental health services are frequently scrutinized following mass school shootings. Subsequently, national, federal, state, and local commissions convene to identify preventative measures including implications for mental health. In order to address the question of what recommendations were offered to mental health professionals, a systematic review of commission reports covering multiple school shootings was conducted. After a comprehensive database search, 16 qualifying reports covering incidents from 1974 through 2018 were identified and reviewed. Several themes emerged, which are pertinent to mental health providers. Suggestions included expanding access to counseling, increasing training of school personnel on threat assessment and mental illness, using interdisciplinary threat assessment teams, monitoring and following up on treatment plans, expanding involuntary treatment, implementing bullying prevention, and increasing interdisciplinary communication.

Keywords Mass school shootings · Commission report · Mental health recommendations

Introduction

Over the past decade, the number of multiple-victim homicides in school settings has increased in the United States of America (USA; Center for Disease Control [CDC], 2019). After such occurrences of mass school shootings, the media frequently discusses mental health issues as a contributing factor (Silva & Capellan, 2019). Second to the perpetrator's level of aggressiveness, mental health concerns were the most frequently mentioned issues in news articles (Barbieri & Connell, 2015). Initially, the goal of the current study was to conduct a systematic review of peer-reviewed studies to determine which mental health recommendations reduce incidents of school shootings. However, there was a paucity of peer-reviewed research addressing these concerns. Rather, the research focused primarily on the efficacy of threat assessments, the content of media coverage after an incident, and the overall accessibility of mental healthcare in schools. Thus, a brief literature review of these studies in the introduction will establish the necessity to analyze non-peer-reviewed sources for mental health recommendations and to reveal areas deserving further attention. The current study conducted a systematic review of local, state, federal, and national commissions that convened after school shooting incidents to answer the question of what mental health recommendations were provided to reduce incidents of school shootings.

Assessment

Although the ability to assess the threat of school shootings would be useful, it has proven difficult to predict school violence (Cornell, 2020). In reaction to increased shootings, many schools adopted zero-tolerance policies. These policies focused on removing the offending student from the premises through suspension or expulsion, even for minor violations. After analyzing past shooting events, some schools moved from zero-tolerance policies to multi-disciplinary threat assessment teams (TATs; Cornell, 2020). These teams evaluate the level of risk a student presents and then react accordingly. TATs focus on helping mildly to moderately aggressive students resolve conflict (Cornell, 2020).

Threat assessments that predict violent acts have not been researched or standardized as effectively as suicide assessments (Cornell, 2020). Although there are several threat assessments available, more research is needed to identify those that are most effective. The Comprehensive School

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Published online: 17 January 2022

Threat Assessment Guidelines (CSTAG) was created as a response to the 1991 Federal Bureau of Investigation (FBI) conference on school shootings. It has since been updated based on current research. It is presently the only model accepted by the National Registry of Evidence-Based Programs and Practices (Cornell, 2020). Ghosh et al. (2019) evaluated 16 risk assessments used by TATs in hospital settings and found that two were accurate in predicting threats for psychiatric inpatients. Burnette et al. (2019) discovered an important distinction between the outcomes of suicide assessments and threat assessments. Most students (95%) were assessed as either a threat to self or others but not both (Burnette et al., 2019). Once identified, the suicidal students were three times more likely to get access to counseling services, as compared to the homicidal students. The homicidal students were more likely to be suspended or expelled (Burnette et al., 2019). These findings may encourage schools to make changes in the way that they assess and respond to homicidal students. These changes could include assuring that homicidal students receive needed counseling services and finding alternatives to school removal in some cases. Hall et al. (2020) reviewed free threat assessments that are available online and compared them to CSTAG. Although some of the online resources were useful, they were not as comprehensive as CSTAG. On average, the online assessments only covered one-third of the elements covered in CSTAG (Hall et al., 2020).

The CSTAG threat assessment includes five steps. The first step assesses intent to commit harm (Cornell, 2020). In many cases, step one reveals that the student is using threatening language in jest. Cornell (2020) found that 75% of aggressive speech could be resolved by providing counseling in step two using CSTAG. A student moves to step three when there is an intent to commit physical harm. In that case, the school would identify practical steps to reduce the risk of physical altercations. If the threat includes the use of weapons or an intent to kill others, then the student would move to step four of the threat assessment process. Step four triggers the creation of a safety plan, involvement with law enforcement, increased parental involvement, and school-based mental health sessions. Step five initiates the safety plan. Cornell (2020) found that the outcome of moving toward a TAT and away from zero-tolerance was that more students were able to remain in the school and receive the needed support. The focus changed from predicting violence, to assessing and providing treatment to curb the behaviors that cause violence (Cornell et al., 2012).

Media Coverage

Media coverage in the USA frequently mentioned mental health concerns after mass school shootings (Barbierie & Connell, 2015; Rees, 2019; Silva, 2019). Barbieri and Connell (2015) noted that mental illness was the second most common issue mentioned in articles covering school shootings, second only to the individual's aggressive traits. These two themes were followed by discussions on gaming systems, history of violent acts, and inclusion in a subculture (Barbieri & Connell, 2015). Rees (2019) reviewed 10 news outlets and found that legislative policies related to firearms were the most cited causative factors, followed by discussions on mental illness and the lack of accessibility to mental healthcare.

Media coverage can instigate change, but it can also create undesired consequences. Rees (2019) asserted that the media coverage after a school shooting was a "call to action" for mental health professionals (p. 1427). However, Silva and Capellan (2019) suggested that excessive coverage of mental illness in relation to school shootings could increase stereotypes and make students more reluctant to seek out counseling. Lin et al. (2018) proposed that online media commentary on mass shootings may have correlated to an increase in copycat acts of violence. Unfortunately, media coverage of school shootings and implications for mental health professionals are not always accurate. For example, media accounts claimed that most of the school shooters had been prescribed psychotropic medications; however, most of the perpetrators had not previously been prescribed psychotropic medication, and there was no causal relationship found with those that had been (Hall et al., 2019). Media coverage may identify valid concerns that need to be researched, but a more reliable and comprehensive review of mental health recommendations is needed.

Accessibility

The National Survey of Children's Health found that 17% of USA children between the ages of two and eight years of age had a diagnosed mental or developmental diagnosis, and 8% of children six to seventeen had been diagnosed with anxiety or depression (Cree et al., 2018). The number of youths with mental illness continues to rise in the USA; however, many of these adolescents do not receive the psychiatric services that they need (Cree et al., 2018; Rees et al., 2019). Rees (2019) concluded that there is a need for more accessible mental healthcare for teenagers.

The American School Counseling Association (ASCA; 2018) recommends a ratio of students to school counselors of 250:1. The ASCA (2018) stated that between the years of 2015 and 2016 the national ratio was 470:1, with 20% of students not having any access to a school counselor. Although there was no research on the effects of school-based clinical counseling on reducing school shootings, it was shown to reduce depressive episodes (Paschall & Bersamin, 2018). In addition, Baird et al. (2017) noted that students that relocated from a smaller more supportive school to a larger

school triggered underlying mental illness. "Schools should be enabled to hire more school-based mental health professionals (i.e., school counselors, school psychologists, and school social workers), and funds should be allocated specifically for hiring these professionals" (NASP, 2013, p. 2). Katsiyannis et al. (2018) argue that schools are uniquely able to offer multi-leveled mental health services in order to address aggressive behaviors.

The peer-reviewed literature addressing mental health recommendations related to school shootings is sparse. However, three recommendations emerged. First, it was recommended that schools move from zero-tolerance policies to multi-disciplinary TATs which include a mental health professional. Second, the TAT should use an evidenced-based assessment to determine the level of risk and respond according to the threat level. Third, more school-based counseling should be available to all students, but in particular those who are aggressive or homicidal. In this current study, a systematic literature review of local, state, and federal-commissioned reports on mass school shootings was conducted using a PRISM design with the intent to answer the question of what recommendations were offered to mental health professionals following mass school shooting events.

Method

Eligibility Criteria

This systematic review was examined in accordance with the PRISMA statement (Moher et al., 2009). Post-mass shooting reports written in English were included if they were related to local, state, federal, or national committee recommendations after one or more mass school shootings in the USA. A comprehensive search of three search engines (Google, Bing, and Yahoo) was conducted using keywords (i.e., "mass school shootings report," "shooting commission report," "shooting report," "mass shooting"). The last search was conducted on February 20th, 2021. In addition, report references were reviewed to identify additional commission reports. Mass school shootings will be defined in accordance with the Safe School Initiative, a national commission report which states,

> …an incident of targeted school violence was defined as any incident where (i) a current student or recent former student attacked someone at his or her school with lethal means (e.g., a gun or knife); and, (ii) where the student attacker purposefully chose his or her school as the location of the attack. Consistent with this definition, incidents where the school was chosen simply as a site of opportunity, such as incidents that were solely related to gang or drug trade activity or to a violent interaction between individuals that just happened to occur at the school, were not included (Vossekuil et al., 2002, p. 7).

Report recommendations and/or findings on school shootings were analyzed to identify one or more common themes concerning mental health recommendations related to school violence. If a report did not include mental health recommendations (i.e., report focused on securing facilities, investigating timeline of the shooting event) or did not focus on mass school shootings (i.e., focused on mass shootings in locations other than a school), the report was not included. Reports were included if, in addition to covering mass school shootings, they included other types of shootings as well. Shooting events that took place at colleges, high schools, middle schools, and elementary schools within the United States by a student or recent student were included. Focus was given to recommendations related to mental health. If the recommendations were not clearly labeled, then keywords were used to search for mental health recommendations included in the report (i.e., mental, counsel, therapy, therapist, treatment, hospital, diagnosis). Data will include characteristics of the commission reports (i.e., number of shooting events, year(s), location(s), age of shooter(s), number of deaths and injuries) presented in Table 1, and final recommendations related to mental health presented in Table 2. If the report did not include all demographics, they were filled in using the K-12 Shooting Database—Center for Homeland Defense and Security (Riedman & O'Neill, 2020). At times, injuries varied from one report to another based on how the specific commission defined injuries. The final search was conducted on August, 18, 2020.

Results

Study Selection

The results of the search are illustrated in a PRISMA flow diagram (Fig. 1). A total of 36 records were screened. Those excluded were news articles, not commission reports. Using an internet search engine, eighteen commission reports were identified that included school shootings, however two reports did not include mental health recommendations and were set aside. Of the remaining reports, 16 were identified using the eligibility criteria: one was national, seven were federal, four were state, and four were local. Eight reports covered one shooting incident, and eight reports covered more than one incident (Table 1). Of those eight reports that covered multiple incidents, three identified the locations of each incident and five withheld the locations of the incidents (Table 1). These incidents covered a span from 1974 to 2018. The most

Table 1 Mass School Shooting Event and Mental Health Prevention Recommendations

Title	Events	Year of Event	Location	Shooter(s) age	Deaths	Injuries
The School Shooter: A Threat Assessment Perspective	18	Prior to 2000	Confidential	Various	N/A	N/A
The Report of Governor Bill Owen's Columbine Review Commission (2001)	1	1999	Colorado, Littleton	Harris 17 Klebold 18	13	21
The Final Report and Findings of the Safe School Initiative	37	1978–1993	United States	Various	65	131
		1974	New York, Olean	Barbaro 18	3	11
		1978	Alabama, Lanett	Robinson 13	0	1
		1978	Texas, Austin	Christian 13	1	0
		1985	Kansas, Goddard	Kearbey 14	1	3
		1986	Montana, Lewistown	Hans 14	1	3
		1987	Missouri, DeKalb	Farisv N.A	2	0
		1988	Virginia, Virginia Beach	Elliott 16	1	1
		1989	California, Anaheim	Robb 15	0	1
		1992	California, Olivehurst	Houston 20	4	10
		1992	Texas, Huntsville	Wilson 14	0	1
		1992	Massachusetts, Great Barrington	Lo 18	2	4
		1993	Kentucky, Grayson	Pennington 17	2	0
		1993	Wisconsin, Wauwatosa	McDowell 21	1	0
		1994	Kentucky, Union	Shrout 17	0 at school 4 Family	0
		1994	North Carolina, Greensboro	Atkinson 16	0	1
		1994	Ohio, Wickliffe	Ledeger 37	1	4
		Nov 1995	Tennessee, Lynville	Rouse 17	2	1
		1995	California, Napa	McMahan 14	0	2
		1995	South Carolina, Blackville	Sincino, 16	1	1
		1996	Washington, Moses Lake	Loukaitis 14	3	1
		1996	California, Palo Alto/Menlo Park	Bradley 16	0	1
		1996	Georgia, Scottdale/Decatur	Dubose Jr. 16	1	0
		1996	Patterson, St. Louis	Rutherford 18 Burris 15 Moore 15	1	0
		1997	Alaska, Bethel	Ramsey 16	2	2
		1997	Arkansas, Stamps	Todd 14	0	2
		1997	Kentucky, West Paducah	Carneal 14	3	5
		1997	Mississippi Pearl	Woodham 16	2 + Mom	7
		1998	Arkansas, Jonesboro	Johnson 13 Golden 11	5	11
		1998	Oregon, Springfield	Kinkel 15	2 + Parents	23
		1998	Pennsylvania, Edinboro	Wurst 14	1	3
		1998	Tennessee, Fayetteville	Davis 18	1	0
		1999	Colorado, Littleton	Harris 17 Klebold 18	13	21
		1999	Georgia, Conyers	Solomon (AGE)	0	6
		1999	New Mexico, Deming	Cordova Jr. 12	1	0
		1999	Idaho, Notus	Cooper 16	0	0
		1999	Oklahoma, Fort Gibson	Trickey 13	0	6
		2000	Florida, Lake Worth	Brazill 13	1	0
The Report to the President on Issues Raised by the Virginia Tech Tragedy	1	2007	Virginia, Blacksburg	Cho 23	32	Not Noted

Table 1 (continued)

Title	Events	Year of Event	Location	Shooter(s) age	Deaths	Injuries
The Mass Shootings at Virginia Tech: Report of the Review Panel	1	2007	Virginia, Blacksburg	Cho 23	32	"Many"
Report of the February 14, 2008 Shootings at Northern Illinois University	1	2008	Illinois, DeKalb	Kazmierczak27	5	21
The Public Mass Shootings in the United States: Selected Implications for Federal Public Health and Safety Policy	12	Before 2013	United States	Various	547	476
Strategic Approaches to Preventing Multiple Casualty Violence Report on the National Summit on Multiple Casualty Shootings	Various	Before 2013	United States	Various	N/A	N/A
The Final Report of the Sandy Hook Advisory Commission	1	2012	Connecticut, Newtown	Adam Lanza 20	26 + Parent	2
The Shooting at Sandy Hook Elementary School	1	2012	Connecticut, Newtown	Adam Lanza 20	26 + Parent	2
The Report on the Arapahoe High School Shooting	1	2013	Colorado, Centennial	Karl Pierson 18	1	0
Keep our Schools Safe: A Plan To Stop Mass Shootings And End Gun Violence In American Schools	260	2013–2018	United States	Various	109	219
K-12 School Security: A Guide for Preventing and Protection Against Gun Violence	250	2000–2017	United States	Various	N/A	N/A
Washington Mass Shootings Work Group	160	2000–2017	United States	Various	N/A	N/A
Final Report of the Federal Commission on School Safety	32	1979–2018	Various	Various	N/A	N/A
		1979	California, San Diego	Spencer 16	2	9
		1980	Alabama, Hueytown	Farmer 17	0	1
		1982	Nevada, Las Vegas	Lizotte 17	1	2
		1983	Missouri, St. Louis	Lawler 14	1	1
		1985	Kansas, Goddard	Kearbey 14	1	3
		1985	Washington, Spanaway	Smith 14	2	0
		1986	North Carolina, Fayetteville, NC	Simmons 17	0	4
		1987	Michigan, Detroit	"Minor" 14	1	2
		1988	Virginia, Virginia Beach	Elliott 16	1	1
		1989	California, Stockton	Purdy 25	5	29
		1996	Washington, Moses Lake	Loukaitis 14	3	1
		1997	Massachusetts, Pearl	Woodham 16	2 + Mom	7
		1997	Kentucky, Paducah	Carneal 14	3	5
		1998	Arkansas, Jonesboro	Johnson 13 Golden 11	5	11
		1999	Colorado, Littleton	Harris 17 Klebold 18	13	21

Table 1 (continued)

Title	Events	Year of Event	Location	Shooter(s) age	Deaths	Injuries
		2001	California, Santee	Andrew 15	2	13
		2001	Massachusetts, Springfield	Ramos 17	1	0
		2003	Louisiana, New Orleans	Williams 18 Tate 17	1	3
		2003	Minnesota, Cold Spring	McLaughlin 16	2	0
		2005	Minnesota, Red Lake	Weise 16	7 + G-parent	0
		2007	Virginia, Blacksburg	Cho 23	32	Not Noted
		2012	Ohio, Chardon	Lane 17	3	2
		2012	Connecticut, Newton,	Lanza 20	26 + Mom	0
		2013	Nevada, Sparks	Reyes 12	3	0
		2013	Colorado, Centennial	Karl Pierson 18	1	0
		2014	California, Santa Barbara	Rodger 22	6	14
		2014	Oregon, Troutdale	Padgett 15	1	1
		2014	Washington, Marysville	Fryberg 15	4	1
		2017	California, San Bernardino	Anderson 53	2	1
		2018	Kentucky, Benton	Parker 15	2	18
		2018	Florida, Parkland	Nikolas Cruz19	17	17
		2018	Texas, Santa Fe	Pagourtzis 17	10	10
Marjory Stoneman Douglas High School Public Safety Commission	46 1 Stoneman	1998–2018 2018	United States Florida, Parkland	48 Attackers Nikolas Cruz19	NA 17	N/A 17

comprehensive report reviewed 260 shooting incidents that took place on school grounds (Table 1). Incidents included in each report differed due to the individual committee's inclusion criteria.

Focus of Studies

Of the 16 reports included in this study, three were interested in mass shooting incidents which included school shootings (Bjelopera et al., 2013; Everytown for Gun Safety [Everytown], 2020; Paparazzo et al., 2013). One was specifically looking at school shootings, but were primarily concerned with gun control (National Protection and Programs Directorate [National Protection], 2018). Eight reports were principally focused on preventing future school shootings through an in depth evaluation of one specific school shooting event (Erickson, 2001; Goodrum & Woodward, 2016; Leavitt et al., 2007; Marjorie Stoneman Douglas, 2019; Northern Illinois University [Illinois], 2008; Office of the Child Advocate [Advocate], 2014; Massengill et al., 2007; The Sandy Hook Advisory Commission [Sandy Hook], 2015), and four reports focused on multiple school shooting events (Devos et al., 2018; FBI, 1999; The Washington Mass Shooting Work Group [Washington], 2018; Vossekuil et al., 2002).

Federal and National Reports

The FBI (1999) commissioned an interdisciplinary research initiative which resulted in the National Center for the Analysis of Violent Crime (NCAVC). The NCAVC presented an intervention model which included a systematic risk-of-threat assessment that a school can use to prevent acts of violence. The committee was headed by Mary Ellen O'Toole, the Supervisory Special Agent for the FBI. The committee reviewed ideas suggested through the NCAVC symposium along with 18 shooting incidents. Experts in the area of education, mental health, and law enforcement were gathered together at the symposium along with those who were present during the Columbine shooting. The report chose not to focus on developing a profile of a killer or predicting specific incidents of violence. Instead, the report identified levels of threat and recommended action steps. The report identified four types of threats: (a) direct (with an identified target), (b) indirect (non-specific), (c) veiled (hinted), and (d) conditional. In addition, they identified three levels of threat: low, medium, and high. Threats that are direct, detailed, and in which the means to carry it out are present are considered the highest level of risk. The NCAVC assessment has four prongs: (1) personality, (2) family, (3) school, and (4) social dynamics. Mental health recommendations are included (Table 2).

Table 2 Mass School Shooting Themes Inclusion by Report

Report citation	Theme						
	Student access to community counseling	More training	Multi-disciplinary threat assessment	Monitoring/Follow-up	Involuntary Treatment	Bullying Prevention	Inter-sdisci-plinary commu-nication
Advocate, 2014	Yes	Yes	No	Yes	No	Yes	Yes
Bjelopera et al., 2013	Yes	Yes	Yes	No	No	Yes	Yes
Devos, 2018	Yes	Yes	Yes	Yes	No	Yes	No
Erickson, 2001	Yes	Yes	Yes	No	No	Yes	Yes
Everytown, 2020	Yes	Yes	Yes	No	Yes	Yes	No
FBI, 1999	Yes	Yes	Yes	Yes	No	Yes	Yes
Goodrum & Woodward, 2016	Yes	Yes	Yes	Yes	No	Yes	Yes
Illinois, 2008	Yes	Yes	Yes	Yes	Yes	No	Yes
Leavitt et al., 2007	Yes	Yes	Yes	Yes	No	No	Yes
Marjory Stoneman Douglas, 2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Massengill et al., 2007	Yes	Yes	Yes	Yes	Yes	No	Yes
National Protection,2018	Yes	Yes	Yes	No	No	Yes	No
Paparazzo et. al., 2013	Yes	Yes	Yes	No	Yes	No	Yes
Sandy Hook, 2015	Yes	Yes	Yes	No	Yes	Yes	Yes
Vossekuil et al., 2002	Yes	Yes	Yes	No	No	No	No
Washington, 2018	Yes	Yes	Yes	Yes	Yes	Yes	No

The United States Secret Service and The Department of Education collaborated on the Safe School Initiative (Vossekuil et al., 2002). The committee members included two mental health professionals—a research psychologist and a professor of clinical psychology. The initiative studied 37 school shooting incidents and made recommendations to school administrators, police, and mental health professionals. Despite the fact that 78% of the school shooters had a history of suicidal ideation, and 24% had a known substance abuse, 66% of shooters never had a psychological assessment, and 88% were never professionally diagnosed with a mental or behavioral disorder. There is no profile of an attacker that can help identify future attackers, and they rarely threaten the targets directly. However, there are usually behaviors that have caused others to be concerned, particularly when it comes to dealing with loss or failure. Other risk factors included feeling bullied, access to weapons, and interest in violence. The committee found that school shootings are rarely done impulsively; in fact, in most cases, someone, usually another student, knew or was involved with the idea to some extent. There were several recommendations that are crucial for mental health professionals to consider (Table 2).

Leavitt et al. (2007) did not focus specifically on the details of the Virginia Tech shooting incident but instead focused on recommendations of local leaders across the nation. There were three federal delegations led by Secretary Leavitt of the Department of Health and Human Services, Secretary Spellings of the Department of Education, and Attorney General Gonzales. These delegations traveled to 12 states and convened key officials and experts in the areas of government, education, mental health, and law enforcement for a town hall discussion. The mental health experts included representatives from the local department of health, counselors and psychiatrists from the community and local/multiple/several schools. The commission found that the mental health professionals represented tried to remedy the misconception that 'most people with a mental health diagnosis are violent' Every forum raised concerns about the availability of adequate mental health services, especially in rural areas. In addition, it was discovered that only 23 states were reporting even minimal mental health information to

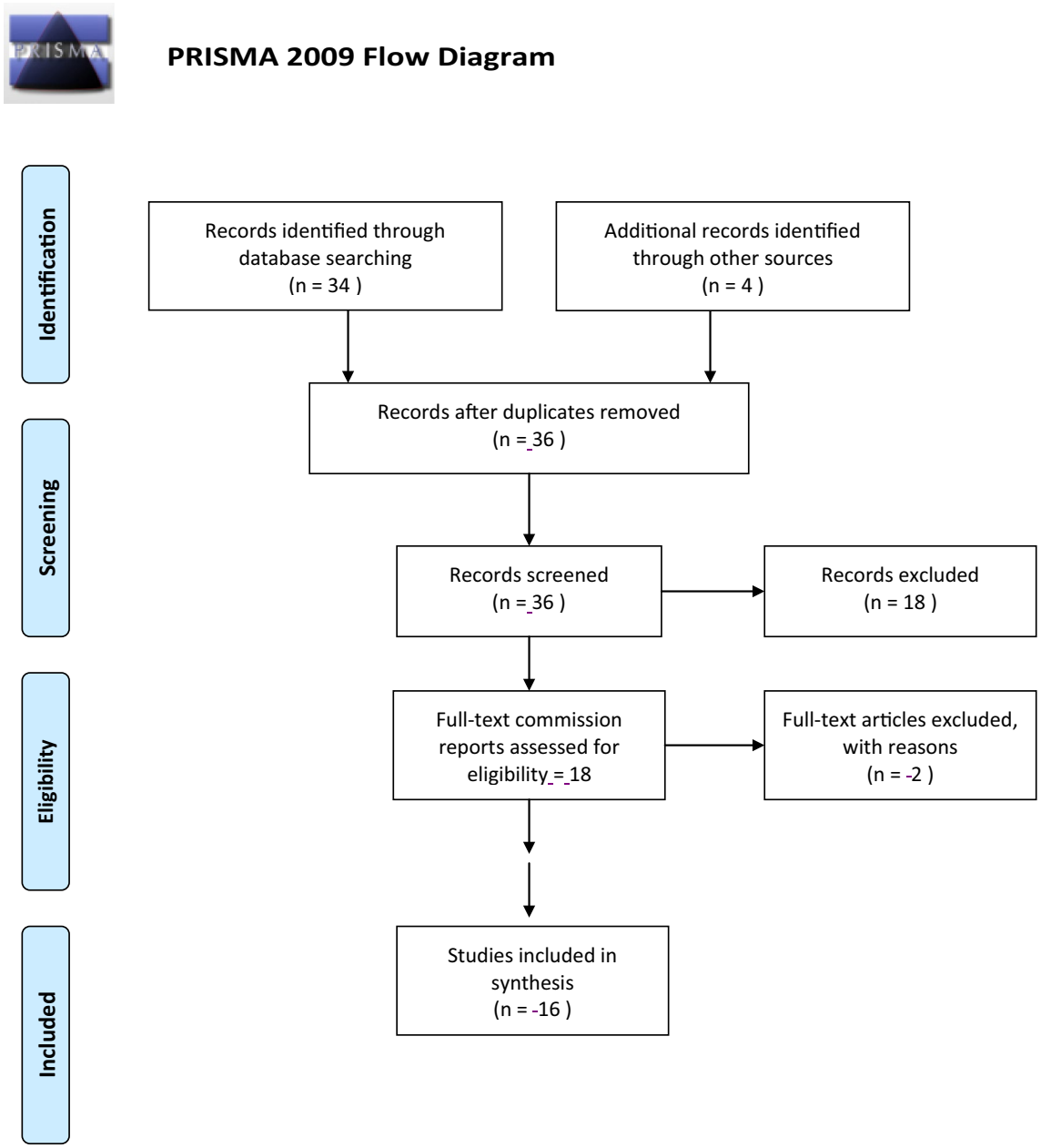

Fig. 1 PRISMA

the National Instant Criminal Background Check System (NICS) to ensure that federal rules on purchasing firearms were followed. Additionally, there were concerns that pertinent mental health information was not consistently being shared with schools. The report identifies key mental health recommendations (Table 2).

Bjelopera et al. (2013) focused on overall mass shootings which included those at educational settings. The report is a review of documents including journals, monographs, government reports, and news stories. The researchers found that there was no "accurate or useful profile of the 'school shooter'" (p. 17). The primary issue in creating a profile is that mass shootings are rare, but there are many individuals that exhibit some if not all of the risk factors. The risk factors include mental health issues, addiction, exposure to violence, and access to weapons. Key mental health recommendations related to federal and public safety are included (Table 2).

The U.S. Department of Homeland Security, Federal Law Enforcement Training Center (FLETC), and the U.S. Department of Justice along with Johns Hopkins University collaborated to write the Paparazzo (2013). A three-day

national summit of over 24 multi-disciplined experts was convened. Expertise included law enforcement, health care, law, social sciences, education, and academia. Although the mass shooting in Aurora, Colorado was the catalyst for the summit, mass shootings including school shootings were discussed in general. Institution and community mental health recommendations were disseminated (Table 2).

Three national unions—Everytown for Gun Safety, the American Federation of Teachers, and the National Education Association—joined forces to research and write a plan that can be used to help curb incidents of violence in the schools. Everytown (2020) focused on policies to help students, teachers, law-enforcement, physical security, and improve gun safety. The committee reviewed 260 incidents, with particular attention given to the Parkland, Santa Fe, and Sandy Hook shootings. Most of the recommendations were related to gun policies and school security; however, there were two findings that overlapped with mental health-care professionals. The committee found that the Parkland shooter was able to legally obtain a gun even though he had a history of mental illness and that there were over 20 aggressive incidents in which the police were involved. The committee indicated that the police and family had no legal recourse. There were four recommendations related to mental health professionals (Table 2).

Homeland Security provided a thorough compilation of findings from 250 shooting events, 37 of which were in K-12 buildings (National Protection, 2018). It is unclear if there were experts from the mental health field working on this project. The specific researchers' identities were not disclosed. Although most of the document concentrated on security and gun violence, there were findings useful to mental health providers. Warning signs of potential threats included digression of behaviors and performance, feelings of injustice, increased substance use, isolation, changes in circumstances or personality, criminal involvement, and grievances that included threats. Mental health recommendations are provided (Table 2).

The Federal Commission on School Safety was formed under the direction of President Trump after the sequential shootings in Parkland and Santa Fe. The committee included The Department of Education, Department of Justice, USA Department of Health and Human Services, and USA Department of Homeland Security. In 2018, the committee released *The Final Report of the Federal Commission on School Safety* (DeVos et al.). The committee interviewed those impacted by the shootings including educators and family members. They also listened to experts and the authors of other school shooting reports. Finally, they conducted field visits. The policy recommendations related to mental health are included (Table 2).

State Reports

Erickson (2001) was commissioned by the Governor of Colorado. There were 10 voting members on the committee, one of which was a social worker. The report only covered the Columbine shooting. The two perpetrators were Klebold and Harris. Klebold indicated in his personal journal that he was depressed and isolated. He indicated that he was suicidal and also mentioned going on a "killing spree" (p. 18). Harris was on psychotropic medication at the time of his death, but the report had no additional information about mental health treatment. The Columbine commission briefly reviewed both shooters' mental health history and limitations of the mental health system (Table 2).

Massengill et al. (2007) was ordered by Governor Kaine. There were eight committee members, three of which had expertise in forensic behavioral sciences, victim services, and pediatric psychiatry. The report covered the Virginia Tech shooting and provided a detailed background of the shooter's mental illness. The perpetrator began showing symptoms of mental illness while he was in elementary school. During adolescence, his educational facilities and his parents were supportive in addressing his difficulties. He was on psychotropic medication for a short period of time and received treatment for selective mutism and depression. Unlike when he was in primary and secondary school, his university and the university counseling center did not provide adequate mental health services. University documentation and communication was incomplete. University professionals did not communicate critical information to one another due to differing interpretation of privacy laws. The perpetrator was involuntarily detained for 48 h. The involuntary commitment time frame was deemed to be too short and did not allow for obtaining complete mental health records, so he was released and mandated to participate in outpatient counseling. Because he was not a minor, his parents were not informed about his involuntary detention. The shooter was able to purchase guns in opposition to the federal law, which prohibits those who have been involuntarily mandated to outpatient treatment from obtaining weapons. Virginia did use mental health information in gun background checks at that time, however, they did not include individuals who were mandated to outpatient treatment. In addition to deficits in the mental health system prior to the shooting, the committee found that mental health care and support to victims after the shooting was also inadequate. Several mental health recommendations were provided (Table 2).

Sandy Hook (2015) was commissioned by Governor Malloy. The committee included three psychiatrists. The report solely covered the Sandy Hook shooting. The commission focused on the limitations of the mental health system instead of the shooter's personal mental health history. The final report included a section of findings by the mental

health writing group. This section specifically proposed 16 recommendations for mental health concerns (Table 2).

Advocate (2014) was a report commissioned by the Connecticut Child Fatality Review Panel and assigned to the state Office of the Child Advocate. The report focused on the Sandy Hook tragedy, primarily highlighting the developmental life of the shooter. The primary committee included two psychiatrists and two social workers. The perpetrator of the Sandy Hook was diagnosed with autism, anxiety, and obsessive–compulsive disorder prior to the act of violence. The perpetrator was diagnosed with anorexia post-mortem. He had psychiatric treatment between the ages of 13 and 15 with the psychiatrist supporting his transition to homebound schooling. A separate evaluation was conducted by the Yale Child Study Center when he was 14-years-old, recommending that his underlying needs should be addressed rather than removing him from a traditional school setting, which could cause his condition to deteriorate. The father, Mr. Lanza, tried unsuccessfully to follow up with the Yale Child Study Center's recommendations for his son. His son refused to take psychotropic medication or comply with individual therapy. Mrs. Lanza supported her son's decision not to take psychotropic medication. The school did not document his disabilities correctly, nor did they follow appropriate education guidelines. Pediatric records indicate an awareness of the mental health diagnosis but no clear referral for treatment. There was no further mental health involvement after 2008. The commission had 37 key findings which produced seven key recommendations. The focus of the current review was on the seven key recommendations as they related to mental health. Recommendations for mental health practitioners were distributed (Table 2).

Local Reports

Illinois (2008) was conducted by the administrators at Northern Illinois University, in consultation with the Illinois governor's office and the U.S. Fire Administration. The committee focused exclusively on the Northern Illinois shooting. An independent clinical psychologist provided a psychological evaluation of the shooter's mental health history to the committee. The psychologist relied on police, medical, and school reports along with interviews conducted by the committee and the psychologist. The shooter had a history of mental illness that began in adolescence. He suffered from schizophrenia and major depression and was treated by a psychiatrist. He had nine psychiatric hospitalizations prior to the shooting. However, he appeared to be in remission during his time at Northern Illinois, and the university was not aware of his previous mental illness. He carried a 3.88 GPA and worked closely with his professors on research. Several losses occurred between 2006 and 2007 including the death of his mother, a break-up with his girlfriend, and the discontinuation of his graduate program from the university. These losses, substance abuse, and a lack of a support system contributed to a psychiatric deterioration. He was also obsessed with violent video games and themes surrounding death. The shooter was able to purchase guns because he was not on psychotropic medication at the time of the purchase. Several recommendations to mental health providers are mentioned (Table 2).

Goodrum and Woodward (2016) was a local evaluation conducted by two experts in the area of criminal justice. There were no permanent members of the committee that specialized in the mental health field. The focus of the report was solely on the Arapahoe shooting. The authors did a thorough review of the perpetrator's history prior to the violent shooting. There were several failures in the system that were compiled; several related to the mental health system. The perpetrator showed signs of violence in elementary school, however, a safety plan was not developed. Mental health referrals were made by the school but there was no communication to ensure participation or progress. There was also no follow-up to concerns the student had of being bullied. The Arapahoe High School did have a TAT, but was not using a validated threat assessment tool. Only two members of the TAT were consulted in the process, but they indicated feeling uncertain about limits to confidentiality and the overall process. The TAT was not provided all the information needed to make an accurate threat assessment including the history of the student viewing weapons and previous mass shootings on his computer. The TAT allowed the student to return to school without first obtaining information from the private therapist. When it was discovered that the at-risk student had purchased a gun and was continuing to have behavioral problems in the classroom, the TAT was never reconvened. Although there was a TAT in place, there were failures in training which led to a breakdown in assessment and systematic reviews of the threatening student. Commission recommendations are included (Table 2).

Washington (2018) was sponsored by the Washington Association of Sheriffs and Police Officers. The committee was made up primarily of law enforcement but also included a lawyer, an educator, a victim's advocate, a civil rights advocate, and the chief operating officer of a mental health agency. The report provides detailed information concerning laws and policies related to protective orders, and gun and school safety throughout the United States. Recommendations for mental health providers are detailed (Table 2).

Marjorie Stoneman Douglas (2019) was a local report that was chaired by the Sheriff of Pinellas County, Florida and submitted to the governor, the Florida House of Representatives, and the Florida Senate. In addition to law enforcement and education experts, the committee had an independently licensed counselor with over 25 years of experience. The committee also had two parents of victims serving on it. The

committee reviewed school shootings that transpired between 1998 and 2018. The committee cited the FBI, U.S. Secret Service, and National Institute of Mental Health (NIMH) all of which indicated that there is an elevated risk of violence with individuals suffering from severe mental illness; however, the NIMH also stated that the vast majority of people with mental illness are not violent and that most violent acts are not committed by the mentally ill. Prior to 1998, the majority of perpetrators were not students. This has shifted dramatically. The attacker at Marjorie Stoneman Douglas (2019) showed signs of mental illness at age three. He had extensive mental health treatment, some of which was school-based from ages 11–18. He had several different providers, but there was no case-management to facilitate communication between practitioners. His family did not share all his mental health history with each provider. In the year before the shooting, there was no record of the attacker participating in any mental health treatment. Several people had concerns about the attacker's behaviors before the shooting, and reports were made to the FBI, the Broward County Sheriff's Office, and the high school but none of these reports were acted on appropriately. Recommendations are noted (Table 2).

Diagram (PRISMA flow diagram)

A systematic review of commission reports on school shootings was conducted to answer the question of what recommendations were offered to mental health professionals. There are several common themes that emerged which are pertinent to mental health providers. Suggestions included expanding access to counseling, increased training of school personnel on threat assessment and mental illness, using TATs, monitoring and following up on treatment plans, involuntary treatment, implementing bullying prevention programs, increasing interdisciplinary communication, and including multidisciplinary involvement on TATs.

Access to Community Counseling and School Counselors

All of the reports ($n = 16$; 100%) mentioned the importance of students having access to community counseling services (Table 2). Of those 16 reports, 12 (75%) went on to suggest the need for developing a systematic process for making referrals, particularly for students at risk for violent behavior (Advocate, 2014; Bjelopera et al., 2013; Devos et al., 2018; Erickson, 2001; FBI, 1999; Goodrum & Woodward, 2016; Illinois, 2008; Leavitt et al., 2007; Marjorie Stoneman Douglas, 2019; National Protection, 2018; Sandy Hook, 2015; Vossekuil et al., 2002). Surprisingly, only six reports (38%) underscored the importance of having adequate school counselors and mental health school personnel (Advocate, 2014; Bjelopera et al., 2013; Everytown, 2020; Illinois, 2008; Sandy Hook, 2015; Washington, 2018). Although it is essential to have adequate staffing of school counselors, psychologists, and social workers as indicated in the introduction (ASCA, 2018; Baird et al., 2017; NASP, 2013), the mental health needs of students are too great to rely solely on school resources. In order to achieve this goal, increased funding for and contracts with community mental health agencies are essential. The primary goal is an "Attempt to eliminate all waiting lists for services by increasing personnel on campus or through relationships with community and contractual providers" (Illinois, 2008, p. A14). Four reports (25%) suggested that an emphasis should be placed on referring at-risk students to community programs that are holistic and family-centered (Advocate, 2014; Marjorie Stoneman Douglas, 2019; National Protection, 2018; Sandy Hook, 2015).

Training

All the commission reports ($n = 16$; 100%) discussed the need for offering more training to school districts (Table 2). Eleven reports (69%) suggested training in threat assessment and/or identifying signs of mental illness to reduce the risk of violence (Advocate, 2014; Bjelopera et al., 2013; Devos et al., 2018; Erickson, 2001; FBI, 1999; Goodrum & Woodward, 2016; Illinois, 2008; Leavitt et al., 2007; Sandy Hook, 2015; Vossekuil et al., 2002; Washington, 2018). Several reports ($n = 12$; 75%) encouraged specific training on reporting threatening behavior (Devos, 2018; Erickson, 2001; Everytown, 2020; Goodrum & Woodward, 2016; Illinois, 2008; Marjorie Stoneman Douglas, 2019; Massengill et al., 2007; National Protection, 2018; Paparazzo et. al., 2013; Sandy Hook, 2015; Vossekuil et al., 2002; Washington, 2018). Training directed at reducing stigma related to mental illness was particularly important in nine reports (56%; Devos et al., 2018; FBI, 1999; Illinois, 2008; Leavitt et al., 2007; Massengill et al., 2007; Paparazzo et al., 2013; Sandy Hook, 2015; Vossekuil et al., 2002; Washington, 2018).

Other trainings that were mentioned included role playing active shooting events to ensure best practices ($n = 2$, 13%; Everytown, 2020; Paparazzo, 2013), training law enforcement and resource officers ($n = 3$, 19%; Marjorie Stoneman Douglas, 2019; Massengill et al., 2007; National Protection, 2018), and training that demonstrated how to systematically document incidents of aggression, particularly when using a computerized information system ($n = 10$, 63%; Advocate, 2014; Erickson, 2001; FBI, 1999; Goodrum & Woodward, 2016; Illinois, 2008; Leavitt et al., 2007; Marjorie Stoneman Douglas, 2019; Massengill et al., 2007; Paparazzo et al., 2013; Sandy Hook, 2015). "Consistently using a student information system to document student concerns makes it easier to identify the early warning signs of violence, escalation in anger management issues, and decline

in academic performance" (Goodrum & Woodward, 2016, p. 8). The committee suggested that the resource officers and campus police also have access to mental health and crisis training, along with important threat assessment documentation (Goodrum & Woodward, 2016). Students, parents, law enforcement, the community, stakeholders, and primary care physicians were additional entities that could benefit from similar training.

Multidisciplinary Threat Assessment

Fifteen commission reports (94%) detailed the importance of having a thorough threat assessment process (Table 2). This is consistent with Cornell et al. (2012), who recommended an evidenced-based assessment be selected and utilized. Also, consistent with Cornell (2020), 12 commission reports recommended the use of TATs (75%; Devos et al., 2018; Erickson, 2001; Everytown, 2020; FBI, 1999, Goodrum & Woodward, 2016; Illinois, 2008; Leavitt et al., 2007, Marjorie Stoneman Douglas, 2019; Massengill et al., 2007; National Protection, 2018; Sandy Hook, 2015; Washington, 2018). One report supported using zero-tolerance policies along with TATs (Illinois, 2008), and one report only mentioned zero tolerance (Advocate, 2014). Three additional reports addressed threat assessments, but did not specifically mention using teams (Bjelopera et al., 2013; Paparazzo et al., 2013; Vossekuil et al., 2002). As part of their investigation, Everytown (2020) found that the safety-school experts unanimously recommended TATs. As suggested by Cornell (2020), TATs were recommended by five reports (31%) as a way to reduce suspensions and expulsions as compared to the results of zero-tolerance policies (Everytown, 2020; FBI, 1999; Goodrum & Woodward, 2016; Illinois, 2008; Washington, 2018). Students that are a low-threat risk (i.e., joking, using figures of speech, using a toy or finger-gun at school) should be provided support, education, or counseling rather than being automatically removed from the school.

Additionally, 13 commission reports (81%) noted the importance of a school resource officer, police officer, or campus police officer as part of the assessment team (Bjelopera et al., 2013; Erickson, 2001; Everytown, 2020; FBI, 1999; Goodrum & Woodward, 2016; Illinois, 2008; Leavitt et al., 2007; Marjorie Stoneman Douglas, 2019; Massengill et al., 2007; National Protection, 2018; Paparazzo et al., 2013; Sandy Hook, 2015; Washington, 2018.). Only seven reports (38%) specifically stated that a mental health professional should be a part of the team (Devos et al., 2018; Erickson, 2001; FBI, 1999; Marjorie Stoneman Douglas, 2019; Massengill et al., 2007; National Protection, 2018; Sandy Hook, 2015). Four of the reports (25%) recommended that as part of the threat assessment process, the schools should consistently monitor social media for threatening behaviors (Everytown, 2020; Marjorie Stoneman Douglas, 2019; National Protection, 2018; Paparazzo et al., 2013). Paparazzo et al. (2013) suggested interdisciplinary teams and gave examples of successful models that included MH professionals as members. Although Illinois (2008) did not insist on a mental health provider on the TAT, they did encourage the TAT to use information from the counseling and student development departments. Another four reports (25%) used the term "interdisciplinary" to describe teams similar to TATs (Devos et al., 2018; Everytown, 2020; Leavitt et al., 2007; Massengill et al., 2007). The Advocate (2014) mentioned using multidisciplinary supports and assessments.

Community counseling centers are one way to provide access to the care needed. "Comprehensive school-based mental health systems (CSMHS) are school-community partnerships that provide a continuum of mental health services" (Devos et al., 2018, p. 29). These programs have been shown to reduce suspensions and expulsions by 50% (Devos et al., 2018; Goodrum & Woodward, 2016). Students that are suspended or expelled, using zero-tolerance policies, cannot be consistently monitored by the school system for compliance through counseling referrals. Isolation at home can compound the mental health concerns and cause the risk of violence to escalate as seen in the Sandy Hook Shootings (Sandy Hook, 2015**).** Seven reports (44%) documented the importance of offering organized social activities to reduce isolation (Advocate, 2014; Goodrum & Woodward, 2016; Illinois, 2008; Leavitt et al., 2007; Paparazzo et al., 2013; Sandy Hook, 2015; Vossekuil et al., 2002).

Lastly, four reports (25%) supported the inclusion of faith-based institutions as part of the interdisciplinary support system before or after an incident **(**Devos et al., 2018; Erickson, 2001; Illinois, 2008; Sandy Hook, 2015). Erickson (2001) listed several intervention models, a couple of which included faith-based support. Devos et al. (2018) advocated for coordinated systems of care that included support and referrals from faith-based institutions.

Monitoring and Following up

Ten commission reports (63%) discussed the need to follow up with at-risk students concerning recommendations from TATs and/or MH referrals (Table 2). Massengill et al. (2007) mentioned that follow up is particularly important when treatment is court-mandated. Advocate (2014) encouraged the school to keep communication open with the parents to ensure that the student is staying in treatment. Unfortunately, the recommendations were not clear on who should be responsible for tracking compliance and follow up. A report on the Arapahoe High School Shooting (Goodrum

& Woodward, 2016) named the school counselor as the primary person who is responsible for following up with treatment plans. On the other hand, Massengill et al. (2007) stated that the multidisciplinary TAT should be tasked with verifying follow through with treatment and follow up with instructors that have submitted a report (Mass shooting). Regardless of who is responsible to track compliance, it is important that the school district use evidence-based coordination programs to ensure the monitoring of student follow-through is consistent and well-documented (Devos et al., 2018). This is particularly important for children on an Individualized Educational Plan (IEP), including homebound children, to have mental health and behavioral concerns documented and monitored within their IEP as suggested by four reports (25%; Advocate, 2014; Goodrum & Woodward, 2016; Marjorie Stoneman Douglas, 2019; Sandy Hook, 2015).

Involuntary Treatment

Involuntary treatment was addressed in seven commission reports (44%; Table 2). These commissions acknowledged the important role involuntary treatment has in the mental health system. Washington (2018) advocated for improving and expanding the availability of involuntary treatment. Massengill (2007) went even further stating that involuntary detention should be longer to allow for a more thorough background check; parents should be notified even if the student is in college, and the hearings should be public. The Sandy Hook Advisory Commission (2015) insisted that individuals who are involuntarily hospitalized should be reported to the federal database and temporarily restricted from purchasing or using guns. The concept of limiting access to guns when there is a legitimate mental health limitation was generally supported (n = 8; 56%) (Advocate, 2014; Bjelopera et al., 2013; Everytown, 2020; Sandy Hook, 2015; Leavitt et al., 2007; Marjorie Stoneman; Douglas, 2019; Massengill et al., 2007; Washington, 2018). However, Devos et al. (2018) were more cautious and warned that involuntary treatment should only be used after weighing the consequences on the student and family members. Further, Illinois (2008) encouraged first responders to be trained on involuntary hospitalization so that it is used judiciously.

Prevention of Bullying

The importance of implementing bullying prevention programs was highlighted in 11 of the commission reports (69%; Table 2). To ensure the programs are effective, they should be evidenced-based (Erickson, 2001). The Department of Education should provide education on "resources or best practices regarding the prevention and reporting of bullying, cyberbullying…" (Washington, 2018, p. 41). The bullying programs are important, but following up on allegations of bullying is just as essential (FBI, 1999).

Interdisciplinary Communication

Eleven commission reports (69%) mentioned the importance of knowing the laws or policies concerning sharing information between organizations and sharing threats as needed (Table 2). Understanding the law can reduce confusion as to when confidentiality can be breached due to imminent risk. Additionally, there needs to be clarity on when to share information with parents and roommates of college-aged students that make threatening comments (Devos et al., 2018; FBI, 1999; Massengill et al., 2007). Ten committees (63%) stressed the importance of balancing the safety of the public with the rights of the students to privacy (Advocate, 2014; Bjelopera et al., 2013; Everytown, 2020; Goodrum & Woodward, 2016; Leavitt et al., 2007; Massengill et al., 2007; National Protection, 2018; Paparazzo et al., 2013; Sandy Hook, 2015; Washington, 2018).

Discussion

Summary of Findings

A systematic review of 16 commission reports addressing mass school shootings revealed several recommendations for mental health providers. A consistent recommendation included expanding access to counseling both within the school and within the community. This includes hiring an adequate number of school counselors, welcoming clinical counselors into the school building, and following up on community counseling referrals. Overall, threat assessment was preferred over zero tolerance. This would require increased training of school personnel on threat assessment and mental illness. Interdisciplinary TATs were recommended. The role of the TATs was to assess the level of risk presented, create targeted intervention plans, monitor progress, follow up on referrals, and fill any communication gaps between providers. Finally, mental health providers should become advocates for preventative measures like anti-bullying programs and longer-term residential treatment when warranted.

Limitations

One limitation in the current study was the sparsity of available controlled studies related to school shootings and the reliance on commission reports for the systematic review. However, the benefits of this study outweigh the limitations. The commissions were granted access to critical school

records, treatment reports, and documentation from before, during, and after the school shootings. The members were able to interview firsthand witnesses and survivors of school shootings. This type of access would rarely be granted to most research projects. The systematic review of the commission reports not only provided informed recommendations, but also generated hypotheses for future controlled studies.

Another limitation in the study is the lack of clarity when two commission reports contradict each other. For example, one commission report supported the use of Zero Tolerance policies while the others recommended TATs. In another instance, some reports recommended increasing access to involuntary care while others suggested caution related to this type of long-term care. In addition, commission reports gave recommendations without specific details on how to resolve ambiguities (e.g., who is responsible for follow-up, filling communication gaps, funding, etc.). These limitations may be reconciled through further research.

Future Research

The commission reports were helpful in identifying areas that broke down before, during, and after school shootings however, more research is needed to measure the success of proposed recommendations. There were two themes that were generally agreed upon between the peer-reviewed research articles, and the commission reports that are important considerations for mental health providers. These recommendations included moving from zero-tolerance to TATs that use evidence-based assessments and ensuring students have access to counselors whether they be school counselors or community counselors. The commission report goes on to discuss six additional areas of concern for mental health providers. The specific recommendations suggested by the commissions should be isolated and researched to see if they are effective and elicit the predicted outcome.

For example, two commission reports suggested that TATs reduce suspensions and expulsions. This was based on the success of CSMHS programs in Connecticut (Devos et al., 2018), two field tests, three scientific studies, and one state program (Goodrum & Woodward, 2016). Additional, controlled studies are necessary in more states, in order to confirm the results for a wider population of schools within the U.S. All the commission reports addressed training, but there was wide disparity in the types of training that were most essential. Further research should isolate types of trainings (e.g., training to school districts on TAT, identifying signs of mental illness, reporting threatening behavior, etc.) and study their efficacy in reducing violence in a school setting. The majority of reports agreed that follow-up was important, but there was disagreement as to whether the school counselor or the TAT should be responsible for monitoring, implementation, and progress (Goodrum & Woodward, 2016; Massengill et al., 2007). Further research should study the outcome of school counselors following up on intervention plans versus TATs. Although seven reports believed that access to involuntary treatment should be expanded, two reports (Devos et al., 2018; Illinois, 2008) believed that it should be used with great caution. The outcome of involuntary treatment as a tool to reduce school violence has not been sufficiently researched. Further research should track the effectiveness of involuntary treatment based on availability, length of stay, and type of treatment offered.

Declarations

Conflict of interest We have no conflicts of interest to declare.

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