

The mental health consequences of mass school shootings: What do we need to know?

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In 1999, two high school seniors killed 12 students and one teacher and wounded 21 students at Columbine High School in Littleton, Colorado (Katsiyannis, Whitford, & Ennis, 2018). In 2007, a 23-year-old college student killed 27 students and five adults at the Virginia Polytechnic Institute and State University in Blacksburg, Virginia (Lowe & Galea, 2017). In 2012, a 20-year-old man killed 20 students and six adults and injured two adults at the Sandy Hook Elementary School in Newtown, Connecticut (Katsiyannis et al., 2018). In 2018, a 19-year-old former student killed 14 students and three adults and injured 17 students at Marjory Stoneman Douglas High School in Parkland, Florida (Katsiyannis et al., 2018). While mass school shootings are much more common in the United States than in other countries, they occur worldwide. For example, in Finland, in 2007 at Jokela Secondary School in Tuusula, an 18-year-old student killed six students and two adults and injured more than 10 others (Murtonen, Suomalainen, Haravuori, & Marttunen, 2012) and in 2008 at Seinäjoki University of Applied Sciences in Kauhajoki, a 22-year-old student killed nine students and one adult (Turunen, Haravuori, Punamäki, Suomalainen, & Marttunen, 2014).

Mass school shooting incidents, although much less common than youth street violence (Bushman et al., 2016), shatter survivors, families, communities and nations. Incidents are typically considered mass shootings when four or more persons are killed in a single event (Fox & DeLateur, 2014). Such incidents, especially those with large numbers of casualties, spark a media barrage and capture worldwide attention (Jonson, 2017). In the United States, the CDC reports that the incidence of multiple victim

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school-associated homicides increased significantly between July 2009 and June 2018 and 95% of deaths were from a firearm-related injury (Holland, 2019).

Mass school shootings provoke heated public debate about what local and national policies are needed to keep students safe and usually result in calls for tighter firearm restrictions, improved public mental health services, heightened safety in schools, emergency response plans, regulation of violent entertainment for youth and bullying prevention programs (Fox & DeLateur, 2014; Jonson, 2017).

Nurses have been in the forefront of calls for action by policymakers to address mass shootings. The American Academy of Nursing, a professional organization of nurse leaders dedicated to transforming America's healthcare system, advocates a public health approach to mass shootings (Gonzalez-Guarda, Dowdell, Marino Anderson, & Laughon, 2018). In a policy brief spearheaded by its Expert Panel on Violence, the Academy provides several recommendations to combat mass shootings. The recommendations include the establishment of a nonpartisan National Commission on Mass Shootings to identify actionable solutions to school shootings, funding for research on the root causes of violence (e.g., intimate partner violence, toxic stress, bullying, mental health, missed opportunities to prevent the shootings) and support for evidence-based firearm laws.

In addition to leading advocacy and prevention initiatives, however, nurse leaders and scholars, who have a long history of the promoting trauma-based care, are well suited to also address the mental health consequences experienced by the mounting number of persons exposed to mass school shootings. Because much public discourse is focused on the prevention of school shootings, especially related to firearm legislation, the identification of mental health consequences stemming from mass school shootings has gotten less attention (Lowe & Galea, 2017). Having experienced a threat to their lives and often the loss of friends and peers, student survivors in particular are at risk for developing psychological symptoms. The mental health consequences of high-profile school shootings gained national attention in the USA when two student survivors of the shooting at Marjory Stoneman Douglas

High School and the father of a student killed at Sandy Hook Elementary School committed suicide in the span of a week (Spencer, Kennedy, & Tanner, 2019). Although the role the shootings played in these deaths is impossible to determine, the deaths cast a spotlight on the traumatic impact of mass school shootings, not only on student survivors but on grieving family members as well. More information is needed to provide evidence-based strategies to address the psychological needs of those affected by these tragedies. To accomplish this, nursing scholarship can play an important role in answering three critical questions:

First, what are the most common mental health consequences of mass school shootings among students and staff exposed to the violence, their families and persons in affected communities? Despite public outcries following each mass school shooting, many questions remain about how the shootings affect those left in their wake. Forty-nine peer-reviewed reports on the mental health consequences of mass school shootings were reviewed (Lowe & Galea, 2017). The studies included 27 independent samples affected by 15 mass shooting incidents occurring at five universities, two high schools and two elementary schools. The review revealed that mass shootings are associated with several negative mental health outcomes, including posttraumatic stress symptoms, major depression and other psychiatric disorders, in those exposed to the violence and those living in affected communities. The review also revealed that persons outside the affected communities (e.g., national samples) can experience at least short-term mental health effects, such as increased fear and decreased perceived safety (Lowe & Galea, 2017). The authors recommend the need for additional research on factors that contribute to the development of chronic symptoms; the aftermath of particularly high impact events such as the Sandy Hook shootings; the influences of pre-event functioning and trauma, genetic variants and community features on outcomes; and the impact of the shootings on physical and social functioning. In particular, additional studies on elementary school age or very young children are needed.

Second, what interventions are effective in addressing the mental health consequences experienced by survivors of school shootings? General recommendations for mental health services that are needed following school shootings have been proposed. For example, experts recommend that communities should provide mental health services widely, educators should be trauma informed and mental health services should be readily available in the schools (Bushman et al., 2016). However, no rigorous intervention trials have been conducted to evaluate the efficacy of mental health services provided to persons who have been affected by school shootings. The development of such interventions, at least for students, can be informed by interventions developed to treat children who have been affected by similar traumas. Commissioned by the Agency for Healthcare Research and Quality, a comparative effectiveness review of psychological and pharmacological interventions targeting traumatic stress in children who had experienced non-relational traumatic events was conducted (Forman-Hoffman et al., 2013). The reviewers reported that no pharmacotherapy intervention demonstrated efficacy and only a few psychological treatments, all with elements of cognitive behavioural therapy (CBT), were shown to be effective. However, because most studies measured short-term outcomes, the effects of the interventions on the development of long-term symptoms could not be determined. Moreover, most of the studies employed wait-list controls and those studies comparing interventions with active controls showed no benefit. Nurse researchers should partner with school-based mental health professionals to address these limitations in existing research and to develop evidence-based approaches that address the unique needs of student survivors of school shootings. Best practices to meet the emotional needs of school personnel exposed to the violence, family members and the affected community also need to be determined.

Third, how do security measures implemented to prevent school shootings affect the well-being of students? One of the changes often demanded at the local level in the aftermath of a school shooting is the strengthening of physical security measures in school buildings, including controlling access,

installing surveillance technology (e.g., security cameras) and metal detectors and employing armed security resource officers (Fox & DeLateur, 2014). Some experts, however, argue that although these measures have intuitive appeal there is little evidence to suggest that they are effective or justified due to the low probability of school shootings (Fisher, Nation, Nixon, & McIlroy, 2017; Fox & DeLateur, 2014). Moreover, some of these measures have been associated with higher levels of fear and perceived disorder among students (Fisher et al., 2017; Fox & DeLateur, 2014). Because feeling less safe at school is linked to poorer academic performance (Fisher et al., 2017), more research is needed to determine the effects of security measures on the emotional and academic well-being of students.

Therefore, while nurses should continue to strongly advocate for policy initiatives that prevent the tragedy of school shootings, they also have a responsibility to create and disseminate information related to the mental health consequences of school shootings and to develop and implement evidence-based strategies to improve the mental health of those exposed to these horrors.

References

Bushman, B. J., Newman, K., Calvert, S. L., Downey, G., Dredze, M., Gottfredson, M., ... Webster, D. W. (2016). Youth violence: What we know and what we need to know. *American Psychologist, 71*(1), 17–39. <https://doi.org/10.1037/a0039687>

Fisher, B. W., Nation, M., Nixon, C. T., & McIlroy, S. (2017). Students' perceptions of safety at school after Sandy Hook. *Journal of School Violence, 16*(4), 349–360. <https://doi.org/10.1080/15388220.2015.1133310>

Forman-Hoffman, V. L., Zolotor, A. J., McKeeman, J. L., Blanco, R., Knauer, S. R., Lloyd, S. W., ... Viswanathan, M. (2013). Comparative effectiveness of interventions for children exposed to nonrelational traumatic events. *Pediatrics, 131*(3), 526–539. <https://doi.org/10.1542/peds.2012-3846>

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

Gonzalez-Guarda, R. M., Dowdell, E. B., Marino, M. A., Anderson, J. C., & Laughon, K. (2018). American Academy of Nursing on policy: Recommendations in response to mass shootings. *Nursing Outlook, 66*(3), 333–336. <https://doi.org/10.1016/j.outlook.2018.04.003>

Holland, K. M., Hall, J. E., Wang, J., Gaylor, E. M., Johnson, L. L., Shelby, D., & Simon, T. R. (2019). Characteristics of school-associated youth homicides, United States 1994–2018. *Morbidity and Mortality Weekly Report (MMWR)*. Retrieved from <https://www.cdc.gov/mmwr/volumes/68/wr/mm6803a1.htm>.

Jonson, C. L. (2017). Preventing school shootings: The effectiveness of safety measures. *Victims & Offenders, 12*(6), 956–973. <https://doi.org/10.1080/15564886.2017.1307293>

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

Lowe, S. R., & Galea, S. (2017). The mental health consequences of mass shootings. *Trauma, Violence, & Abuse*, 18(1), 62– 82. <https://doi.org/10.1177/1524838015591572>

Murtonen, K., Suomalainen, L., Haravuori, H., & Marttunen, M. (2012). Adolescents' experiences of psychosocial support after traumatisation in a school shooting. *Child and Adolescent Mental Health*, 17(1), 23– 30. <https://doi.org/10.1111/j.1475-3588.2011.00612.x>

Spencer, T., Kennedy, K., & Tanner, L. (2019). Linked by pain: 2 school massacre survivors, dad kills selves. AP News. Retrieved from <https://www.apnews.com/c61e2bf3870d44bc9bbf92debf9f77ac>.

Turunen, T., Haravuori, H., Punamäki, R. L., Suomalainen, L., & Marttunen, M. (2014). The role of attachment in recovery after a school-shooting trauma. *European Journal of Psychotraumatology*, 5, 22728. <https://doi.org/10.3402/ejpt.v5.22728>