Effect of Mass Shooting on Mental Health of Children and Adolescent

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Abstract. This article discusses the controversial issue of gun control and its impact on mass shootings and mental health, particularly on children and adolescents. The Second Amendment has led to an increase in improper use of firearms, with gun deaths increasing every year. The psychological effects of mass shootings, such as post-traumatic stress disorder, can have long-lasting impacts on children and adolescents. They may experience trauma, anxiety, fear, and social isolation. Witnessing such events can lead to difficulties in managing day-to-day activities and mental health problems. To support children and adolescents after a mass shooting, it is important to ensure that they feel safe and secure, increase security measures in schools and other public places, and provide counseling and therapy services to help them process their trauma and manage their anxiety and other mental health issues. Addressing gun violence is essential in preventing mass shootings from occurring and reducing their impact on young people's mental health.

Keywords: Mass shooting; children; adolescents; impact factors; mental health.

1. Introduction

Gun control in the USA has been a controversial theme of discussion during the past few years. One result of the 2nd Amendment is a plethora of mass shootings and improper uses of firearms. Not only have many innocent lives been lost, but also those who have experienced shootings, and their friends and family will be left with psychological effects like forms of post-traumatic stress disorder (PTSD).

In an article published by Levinson-King, he states that in the past 10 years, 279 students have died in 189 school shootings, and many have died in shootings that happened outside of school [1]. Especially in some cities, there are a lot more cases of improper use of firearms. Gun deaths in the U.S. are still increasing every year. In 2020, 45,222 people die from shootings incidents with a 14% growth compared to 2019, a 25% increase from 2015 and a 43% rise from ten years ago. The incidence of suicides committed using guns has also shown an upward trend in recent years, with a 10% increase observed in five years and a 25% growth in ten years from an article by Gramlich [2]. All of this comes from the Second Amendment which emphasizeing the right of citizens to own firearms, which is also one of the factors of mass shootings [3]. Other than the fact that legally owning a gun leads to easier access to firearms, social isolation and mental illness are the two biggest reasons behind the shootings. In an article by Hirschtritt and Binder, they state that suffering from a severe mental illness is linked to a slightly increased possibility of engaging in violent actions towards others. Specifically, people experiencing a psychotic episode may have 3 to 5 times higher risk of violence [4]. Mental illness does not only show up as being behind mass shootings, there are also mental illnesses caused on children and adolescents by the significant psychological effects of mass shootings. Witnessing shootings on TV or even having experienced shootings in person would leave a detrimental effect on children or adolescents. Traumas like this can increase individuals' susceptibility to developing mental health issues, and it can also be a direct cause of PTSD. In order to deal with painful memories and emotions, some individuals would turn to self-destructive behaviors. The effects of trauma can vary greatly and may result in difficulties in managing day-to-day activities. Mass shootings can have devastating impact on the psychological well-being of kids

and teens. Traumatic events can lead to increased anxiety and fear, as young people worry about their safety and that of their loved ones. Children and adolescents who witness or are directly affected by a mass shooting may experience trauma, resulting in conditions like flashbacks, nightmares, or difficulty sleeping.

2. The influence of mass shootings on children and adolescents

The aftermath of mass shootings can lead to social isolation and withdrawal for some children and adolescents, as they may feel reluctant to attend school or community events. This isolation can further exacerbate their mental health problems. Additionally, in some cases, mass shootings may be followed by incidents of copycat behavior, causing further anxiety and fear among young people [5]. For example, because of the traumatic experiences, the ones who experienced shootings would generate a fear of recurrence, which is described as the "ripple effect" of anxiety, or "symptom contagon". Not only the ones who has experienced these events would have anxiety and fear, the fear could also be spread through news and newspapers to every family. Media can expose incidents to millions of people within seconds, and the high efficiency of television news and online news report websites could bring fear to everyone with a smart device or a television. Researches found that from newspaper reports, horrifying crimes affect fear of crime among the readers. They usually develop a greater sense of fear if the news is local or if they feel any correlations to the victims.

The emotional aftermath of mass shootings on children and adolescents' mental health could be profound and long-lasting. The trauma experienced during these events can have lifelong effects, leading to ongoing mental symptoms. It is crucial for related adults to provide backup and resources to help young people manage the aftermath of these events. One way to support children and adolescents after a mass shooting is to ensure that they feel safe and secure. This can be achieved by increasing security measures in schools and other public places. Additionally, providing counseling and therapy services can help children and adolescents process their trauma and manage their anxiety and other mental health issues. Addressing the issue of gun violence in the USA is essential in preventing mass shootings from occurring and reducing the impact they have on young people's mental health.

2.1. Post-Traumatic Stress Disorder (PTSD)

One of the most significant mental effects of mass shootings on young groups is PTSD. Prior study conducted by Copeland recruited fourteen hundred and twenty children between the ages of 9 and 13 and measured their traumatic events and PTSD levels [6]. The result revealed that exposure to gun violence results in PTSD symptoms in children, including intrusive thoughts, nightmares, and avoidance behavior. Furthermore, PTSD could affect the development and functioning of young people, leading to difficulties in academic performance, social relationships, and overall well-being. For instance, prior study found that children with PTSD after experiencing traumatic events, including violence, natural disasters, or accidents, had significantly lower scores on tests of attention and concentration compared to those without PTSD. This suggests that the cognitive functioning of children with PTSD is negatively affected. Furthermore, a study by Nixon revealed that children with PTSD reported more serious anxiety, fear, and general distress compared to those without PTSD [7]. These ongoing feelings of fear and anxiety can impact a child's overall well-being and contribute to ongoing mental health issues.

2.2. Anxiety and Depression

The authors in Copeland also examined the influence of exposure to traumatic events on psychological symptoms, including anxiety, fear, and general distress [6]. Authors of the study analyzed data from the Great Smoky Mountains Study, a longitudinal study of children and adolescents living in a rural area in North Carolina, USA. The study included a total of 1,420 participants who were assessed for exposure to traumatic events and mental health outcomes at

multiple time points between the ages of 9 and 16. The results demonstrated that children who experienced traumatic events, including gun violence, had more serious anxiety, fear, and general distress in comparison to those who did not experience such events. Specifically, the study revealed that exposure to traumatic events was associated with a 2.57 times greater likelihood of acquiring anxiety, a 3.49 times higher risk of suffering from fear symptoms, and a 3.02 times heightened risk of having other disorders of distress. The study also noted that children who experienced traumatic events, including gun violence, may develop a fear of leaving their homes or attending school. This can significantly impact their daily functioning and well-being, leading to difficulties in academic performance, social relationships, and overall quality of life.

2.3. Aggression

Aggression is another common mental effect of mass shootings on children and adolescents. Children who are exposed to gun violence may become more aggressive and display behavior problems at school. In one meta-analysis, Fowler analyzed 86 studies on the association between exposure to community violence and psychological health in children and adolescents [8]. The studies included a total of 252,390 participants. Their analysis revealed a significant effect of exposure to community violence on increased aggression and behavior problems in children and adolescents. The study includes several types of community violence, including gun violence. Specifically, they found that children and adolescents who suffering from community violence were 2.19 times greater likelihood of exhibiting aggressive behavior than those who were not exposed. The effect size for behavior problems was also significant, with an odds ratio of 1.89 for exposed versus unexposed children and adolescents.

3. Risk factors increasing vulnerability to the impact of mass shooting

A history of trauma, anxiety disorders, depression, and other mental health disorders are the psychological problems that children or adolescents might be pre-existing. The presence of these pre-existing psychological problems can lead to increased vulnerability to the psychological effects of mass shootings, making it more likely for these individuals to experience long-term effects such as PTSD, depression, and anxiety. Hoven found that students who had pre-existing mental health disorders had a higher risk of experiencing PTSD symptoms after the 9/11 terrorist attacks [9]. They used the Diagnostic Interview Schedule for Children (DISC-IV) to assess psychiatric disorders and the Child PTSD Reaction Index (CPTSD-RI) to assess PTSD symptoms. Data was collected from 8236 public school children in New York City six months after the 911 event and the logistic regression analyses was utilized. The results showed that students with a pre-existing mental health disorder were at increased risk of developing PTSD after the event compared to those without a pre-existing disorder (OR = 2.7, 95% CI: 1.8-4.1, $p < 0.001$). This is because pre-existing mental health disorders can make it more difficult for individuals to cope with stress and trauma. The results of this study demonstrate that after the community has experienced or witnessed a significant traumatic event, people are at risk of suffering from emotional abnormalities. Therefore, after a traumatic event, community workers and related practitioners should pay attention to the psychological condition of individuals in the community and provide early intervention and assistance to Susceptible groups of negative emotions.

Moreover, pre-existing psychological problems can make it more challenging for children and adolescents to access support and resources that can help them cope with the psychological effects of mass shootings. For example, individuals with pre-existing anxiety disorders may struggle to attend therapy sessions or support groups due to anxiety or avoidance behaviors. This can hinder their ability to receive appropriate care and support, leading to more severe long-term effects. The presence of pre-existing psychological problems can also increase the likelihood of maladaptive coping mechanisms or increase the likelihood of negative thought patterns and behaviors that can exacerbate the effects of trauma, such as substance abuse or self-harm, which can further exacerbate the

psychological effects of mass shootings. Hapke examined the relationship between PTSD and substance abuse in a sample of 4181 adults in Germany [10]. Subjects were from communities that were typical of Central Europe and that did not experienced war since the Second World War. Crime rates in the region are generally equivalent to other regions. The results showed that individuals with PTSD had a higher prevalence of substance abuse than those without PTSD. The study also found that pre-existing psychiatric problems were related to an higher risk of suffering PTSD after a traumatic event. Moreover, the study also indicated that gender may not be an independent influential variable for PTSD although females were reported to suffer more from trauma event. Thus, future confirmation about the role of gender on the malignant effects of exposure to traumatic events is needed. In addition, anxiety disorder tended to be a more significant impact variables for PTSD compared with depression.

Absence of social support is one significant problem that can increase the vulnerability of children and adolescents to the psychological effects of mass shootings. According to Adams and Boscarino (2006), a longitudinal study was conducted to detect the factors influencing PTSD [11]. The number of participants from the first time point was 2368 and at the second time point, the number was 1681. A multivariate logistic regression analysis was conducted to examine the influence of different potential predictors. The results revealed that social support serves as a protective factor to prevent PTSD following a traumatic event. Children and adolescents who are deprived of social support may suffer from the feelings of isolation and disconnection, which exacerbate their distress and increase their risk of developing PTSD. Furthermore, a lack of social support can impact the efficacy of mental therapies for young groups following a mass shooting. When there is social support, interventions that target PTSD symptoms in students, such as the Cognitive Behavioral Intervention for Trauma in Schools (CBITS), are more successful. Moreover, children and adolescents who have low levels of social support may need extra interventions to address their mental health requirements. This implies that the delivery of social support should be taken into account when devising and implementing mental therapies for those affected by a mass shooting [12].

4. Conclusion

In conclusion, mass shootings have significant psychological effects on children and adolescents, which can impact their academic performance, social relationships, and overall well-being. The psychological effects of mass shootings on children and adolescents include PTSD, aggression, anxiety, and depression. Risk factors that increase vulnerability to these effects include pre-existing mental disorders, and absence of social support. It is crucial for caregivers and mental health professionals to recognize the impact of mass shootings on young people and provide appropriate support and interventions to help them cope and heal.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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