

**An Analysis of the Indirect Effects of School Shootings on American Children, Staff,
Communities, and Schools**

Irma R. Gomez-Hernandez

Criminal Justice Science Division, Western Oregon University

Author Note

There are no known conflicts of interest to disclose.

Correspondence concerning this professional paper should be addressed to

Irma R. Gomez-Hernandez at: Igomezhernandez23@wou.edu

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Abstract

School shootings in the United States generate far-reaching disruptions that extend well beyond direct survivors, influencing the broader systems in which children, educators, families, schools, and communities function. While direct exposure produces well-documented psychological and academic consequences, growing evidence shows that indirect exposure through media coverage, institutional responses, community reactions, and cultural narratives also shapes individual and collective well-being. The literature review synthesizes peer-reviewed research on the indirect effects of school shootings across ecological levels using a qualitative thematic approach informed by trauma theory, the social-ecological model, resilience theory, the life-course perspective, attachment theory, and anomie theory. Findings indicate that indirect exposure contributes to heightened anxiety, hypervigilance, sleep disturbances, and academic disengagement among children. Educators experience secondary traumatic stress and professional strain, while families develop patterns of over-protection and routine change. Schools often adopt intensified security measures that foster a climate of fear, and communities report declines in cohesion, economic activity, and civic participation. National media coverage further normalizes school violence. Collectively, these patterns show that school shootings operate as national traumatic events, underscoring the necessity of trauma-informed, multilevel interventions and equitable policy responses.

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CHAPTER ONE: INTRODUCTION

A school shooting refers to an incident in which a firearm is discharged on school grounds, targeting students, staff, or both (Comer, 2024). Such events occur most commonly in elementary, middle, and high schools rather than in preschools or college campuses, according to the national reporting by the U.S. Department of Education (2023). Perpetrators are typically current or former students (Children’s Hospital of Philadelphia, 2024; NCES, 2024). Between 1997 and 2022, researchers documented 1,453 school shootings nationwide (Rapa et al., 2024; USAFacts Team, 2023). Standardized tracking began in 1990 with the creation of the K-12 School Shooting Database by the Center for Homeland Defense and Security (A. Jackson et al., n.d.). According to data compiled by the USAFacts Team (2023), which aggregates K-12 school shooting statistics from government and research sources, there has been a notable rise in incidents in recent years. Specifically, the 2021-2022 academic year, which documented 327 occurrences. It is the highest number recorded in a calendar year. These trends underscore escalating concerns about the safety and well-being of students and school personnel nationwide.

According to decades of research, school shootings can have a multitude of effects on children. “Short-term” refers to the period immediately following a school shooting that can last from a few hours to several weeks or even months (Children’s Hospital of Philadelphia, 2024). Children who are exposed to school shootings can suffer a variety of consequences. These consequences include symptoms of anxiety, depression, post-traumatic stress disorder (PTSD), fear, and safety concerns (Beland & Kim, 2016). These consequences can cause academic disruptions, decrease children's academic performance, and increase the likelihood that they will repeat a grade by up to 2 years after the incident (Cabral et al., 2020). The short-term effects of

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school shootings can have lasting implications if they are not addressed with the proper support and interventions.

In other words, the short-term effects can become “long-term” consequences that manifest and persist for several months to several years (or longer) following the incident (Cabral et al., 2020). The long-term effects of school shootings are the consequences that manifest and persist over an extended period. The long-term effects of school shootings can include psychological, educational, and economic impacts that are experienced throughout the lifetime. Children who survive school shootings can experience lasting mental health challenges, including depression, anxiety, and PTSD (Cabral et al., 2020; Rossin-Slater et al., 2022). Exposure to school shootings can disrupt a child's learning, leading to low academic performance and a low likelihood of graduating from high school and pursuing a higher education (Cabral et al., 2020). The disruption to the child can cause long-term economic disadvantages. For example, research indicates that individuals exposed to school shootings earn significantly less in their mid-twenties compared to peers who were not exposed, leading to a substantial loss of income in their lifetime (Cabral et al., 2020; Rossin-Slater, 2022). Beyond the impact on children, their trust in the community and sense of safety can be eroded, leading to broader societal consequences. Additionally, resulting in reduced academic performance due to mistrust of schools and concerns about community safety (Rossin-Slater et al., 2022). Although research in this area is still developing, a growing body of literature has been accumulated over the last couple of decades.

An area that has received little attention is understanding how school shootings can potentially indirectly affect children, staff, communities, schools, and other institutions that are not near the site of the tragedy. For example, after the 2022 Uvalde shooting, families in Texas

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reported keeping their children home from school due to fear. This led to declines in school attendance in districts far from the site of the tragedy. The news coverage on the event documented widespread anxiety from parents and behavioral changes in surrounding communities. School shootings like Uvalde often trigger increased security at schools across the nation, even when there are no threats. School districts adopt new drills and protocols for school entry. According to Shaik et al. (2025), even towns hundreds of miles away may see fewer families dining out after a high-profile shooting. Parents avoid crowded places, costing businesses money and impacting not only schools but also the economy.

The indirect effects of school shootings can be as profound as the direct consequences experienced by those present during the incident. These effects often extend to individuals who were not physically involved but are nonetheless members of the impacted community. According to Deb & Gangaram (2024) the consequences of such events can reach a wide range of stakeholders, including children, school staff, parents, and other community members, regardless of their proximity to the shooting. Even in the absence of direct exposure, community members may experience heightened fear and anxiety regarding their safety. The psychological stress can affect daily routines, sense of security, and overall well-being. This collective anxiety can influence not only individual behavior but also the broader atmosphere within schools and neighborhoods. In addition to the emotional and psychological impacts, schools and communities may face economic difficulties following a school shooting. These challenges can arise from increased security costs, changes in school attendance patterns, or disruptions to community activities and local businesses. The effects may be felt by a range of stakeholders, amplifying the tragedy's reach beyond those directly involved.

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Educators and school staff also experience indirect effects and behavioral changes following a school shooting. These changes often manifest as increased absenteeism, with staff members missing more days of work due to the emotional toll of the event. Participation in school activities may also decrease, as teachers and staff become less engaged or feel unsafe in the school environment (Harding et al., 2022). Additionally, there is a tendency for staff to become hyper-vigilant, constantly alert to potential threats and disruptions within the school. The aftermath of a school shooting can lead to social disruption within the community. Relationships among community members may suffer, with mistrust and tension emerging between individuals and groups (Prickett & Gutierrez, 2021; Silva & Greene, 2023). The social fallout stems from the shared trauma and heightened anxiety experienced in the wake of the incident. Indirect exposure to school shootings can result in long-term health issues for those affected. Chronic stress, anxiety, and other mental health conditions may arise, impacting not only the individuals directly involved but also influencing the lives of those around them. The ripple effects from these events extend deeply into the fabric of the school and its surrounding community, affecting every aspect of daily life.

Statement of Research Objective

While extensive research over the past three decades has explored the short-term and long-term effects of school shootings, much less is known about the potential for indirect impacts on children, educators, and communities who have indirectly experienced or witnessed these events. As an initial step toward a deeper understanding of the broader impact of school shootings, this project is designed to investigate the indirect consequences these incidents have on numerous groups. Specifically, the research will focus on how school shootings affect children, school staff, educational institutions, and the wider communities in which these events

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occur. Examining the effects that extend beyond those who are directly involved, this project seeks to shed light on the far-reaching implications of school shootings for the individuals and institutions connected to them. Although prior research has extensively documented immediate and long-term impacts on directly exposed survivors, far less is known about how these events shape the psychological, emotional, academic, and social experiences of individuals and institutions that are not physically present but nonetheless affected through media exposure, institutional responses, community disruption, and heightened perceptions of threat.

Research Question

In what ways do school shootings generate indirect consequences across social systems, including individuals, educational institutions, and communities? And through which mechanisms, such as media exposure, institutional responses, community disruptions, and heightened perceptions of fear, do these effects manifest and persist?

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CHAPTER TWO: LITERATURE REVIEW

Historical Context

School shootings represent one of the most visible and emotionally charged forms of violence in the United States. Although statistically rare, they have had disproportionate influence on the nation's educational, political, and cultural landscape. The modern understanding of school-based gun violence began with the 1999 Columbine High School tragedy, in which two students killed twelve classmates and one teacher before taking their own lives (Crawford, 2021). The extensive media coverage surrounding Columbine marked a turning point, transforming isolated incidents into a national preoccupation and shaping how subsequent events such as Virginia Tech (2007), Sandy Hook Elementary (2012), Parkland (2018), and Uvalde (2022) would be understood and politicized.

Each new tragedy builds upon prior narratives of loss and fear, entrenching the notion of school shootings as a recurring national crisis. Over time, these incidents have prompted substantial policy responses, ranging from the introduction of armed school resource officers to the implementation of high-security infrastructure such as metal detectors and surveillance systems. Concurrently, they have intensified public debates about gun regulation, mental health services, and the role of media coverage in magnifying fear. Within academic discourse, school shootings are often treated as sentinel events that expose a broader societal tension surrounding inequality, cultural alienation, and governance of youth behavior.

Understanding this history is crucial not merely to trace rising statistics but to situate school shootings within the broader context of American social change. The evolution of public responses from initial disbelief and mourning to institutionalized preparedness measures

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illustrates how collective trauma can alter national expectations about what constitutes safety in childhood and schooling.

Defining and Measuring School Shootings

Understanding the indirect effects of school shootings requires first establishing how these events are defined and measured. Unlike other forms of violence that rely on standardized federal reporting systems, school shootings do not have a universally accepted definition. As a result, estimates vary widely depending on the criteria used by different organizations. This means that the same event can be counted or excluded depending on the dataset the organization uses to track school shootings. Definitional ambiguity can shape how researchers interpret trends, how policy makers allocate resources, and how communities perceive risk. A narrow definition that includes only mass shooting events produces an image of a rare and catastrophic violent event. In contrast, a broad definition that includes accidental discharges, suicides, after-hour incidents, or drive-by shootings reveals a far more frequent and geographically widespread phenomenon. Definitional choices indirectly influence the public's fear, media narratives, and institutional responses.

One of the most comprehensive sources is the K-12 School Shooting Database (K-12 SSDB), maintained by the Center for Homeland Defense and Security at the Naval Postgraduate School. This database documents every incident in which a gun is fired, brandished, or a bullet strikes school property at a public or private K-12 school. Because of its broad criteria, the K-12 SSDB captures a wide range of events, including accidental discharges, interpersonal disputes, suicides on campus, after-school shootings, and high-profile mass shootings. Its inclusiveness makes it valuable for studying indirect effects, as even nonfatal or low-visibility incidents can trigger fear, media attention, and institutional change. This aligns with research emphasizing that

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even low-severity shootings can produce widespread anxiety and behavioral shifts (Cook, 2020; Deb & Gangaram, 2024).

Federal agencies track fewer categories. The National Center for Education Statistics (NCES) documents school-associated violent deaths, including homicides and suicides that occur on school grounds or while traveling to and from school. The NCES also reports on active-shooter incidents in educational settings, drawing on law enforcement data. Inadvertently, because the NCES uses data from law enforcement, this excludes many incidents that affect the school climate and community perceptions. The Federal Bureau of Investigation (FBI) publishes annual reports on active shooter events, which include some school shootings but exclude accidental discharges, targeted fights, or incidents without an active attempt to kill. Thus, the FBI provides consistent long-term indicators but captures only a subset of school-based gun violence.

Non-profit organizations, such as USA Facts, aggregate data from primary sources, including the K-12 SSDB, NCES, and the FBI. They collect data from these sources and produce accessible reports for both the public and policymakers. Rather than relying on media coverage or crowdsourced information, USA Facts uses government and academic datasets to provide a nonpartisan, methodologically transparent analysis of national trends. This approach enables researchers to efficiently compare information from numerous sources in one location, facilitating the identification of discrepancies and areas of convergence. This is important because data is defined differently across the various databases.

Analysis of multiple datasets indicates that school shootings are not confined to a single region or type of location within the United States. These incidents have been documented in various settings, such as parking lots, athletic fields, hallways, and classrooms. Moreover, school-based gun violence encompasses a wide spectrum of events, not solely those resulting in

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mass casualties. A significant number of cases involve only one victim, no injuries, or situations unrelated to deliberate attacks. This multifaceted nature highlights the need to establish clear definitions of what constitutes a school shooting, particularly when interpreting research findings or comparing trends across studies.

For the purposes of this project, it is necessary to utilize a broad definition of school shootings. The primary emphasis is on the indirect consequences of these incidents; the characteristics or severity of the events are less important than the fact that they occurred and were acknowledged by the public. Even incidents without injuries can provoke substantial fear, attract significant media attention, prompt institutional action, and disrupt the surrounding community. By adopting a comprehensive definition, the project can accurately assess the ways in which school shootings, regardless of their individual severity, influence the psychological, social, and institutional experiences of individuals and communities who were not directly involved or exposed.

Types of School Shootings

School shootings in the United States encompass a wide range of incidents that vary in motive, context, and visibility. Although public discourse often centers on large-scale mass shootings, research consistently shows that these events represent only a small fraction of gun-related incidents on school grounds. Understanding the different types of school shootings is essential for interpreting national trends and for situating the broader social, psychological, and institutional impacts, particularly the indirect effects that extend far beyond those who are directly exposed.

Mass shootings, sometimes referred to as rampage shootings, involve multiple victims and are typically premeditated attacks carried out by current or former students targeting peers,

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staff, or the school environment (Schoenfeld, 2005). These events receive intense media coverage, generating national mourning, and often catalyze policy debates about school safety, mental health, and firearm regulation. High-profile incidents such as Columbine (1999), Sandy Hook (2012), Parkland (2018), and Uvalde (2022) have shaped public perceptions of school violence and contributed to widespread fear even among communities geographically distant from the events (Grant, 2026; Hanna et al., n.d.; Ray, 2026). Although statistically rare, mass shootings have disproportionately indirect effects. Their visibility amplifies national anxiety, influences school safety practices nationwide, and heightens perceptions of vulnerability among children, educators, and families. Even communities geographically distant from the incident experience heightened anxiety, school absences, and behavioral changes following high-profile mass shootings. These ripple effects often persist long after the incident.

Another type of school shootings is a targeted shooting which involves a specific victim or victims. Targeted shootings can be linked to interpersonal conflicts, bullying, retaliation, or gang-related disputes. These incidents may occur in hallways, cafeterias, parking lots, or athletic fields and involve one or two victims. Although they receive less media attention than mass shootings, targeted shootings are more common and contribute to the overall prevalence of school-based gun violence (B. A. Jackson et al., n.d.). Targeted shootings can generate substantial indirect consequences, including deterioration in school climate, increased absenteeism, and heightened perceptions of threat among students and staff. Even when the violence is localized, the psychological and social impacts often extend throughout the school community.

Some school shootings involve self-directed violence, including suicides or suicide attempts on school grounds. Iancu et al. (2019) indicates that these incidents may occur in

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classrooms, bathrooms, parking lots, or athletic fields, and do not involve the intent to harm others. Students who engage in self-directed shootings are usually suffering from a mental health crisis. Despite the shooting being self-directed, it can cause deep emotional and psychological distress among peers, teachers, and the broader community. Exposure to suicide on school campuses can lead to secondary trauma, grief, and long-term mental health challenges among students and staff (Iancu et al., 2019). Even when no other individuals are physically harmed, the indirect effects, including fear, sadness, and disruption of school routines, can be profound.

A significant number of school shootings take place outside regular instructional hours, specifically during extracurricular activities, sporting events, or community gatherings held on school property. While these incidents may arise from disputes or circumstances that are not directly related to school operations or conflicts among students and staff, they are still categorized as school shootings because they occur within the boundaries of the school campus. Such after-hour incidents can have profound consequences for the school community. They may undermine trust among students, families, and staff and alter relationships within the school environment. Additionally, the occurrence of shootings during non-school hours often prompts the implementation of stricter security protocols, which can have lasting effects on the day-to-day experiences of both students and staff (A. Jackson et al., n.d.; Kupchik & Ward, 2020; School Safety and Security Measures, 2025). These measures, while designed to enhance safety, can also contribute to a broader perception that school environments are inherently unsafe, even when the underlying incidents are unrelated to interpersonal disputes or conflicts within the school.

Drive-by shootings and incidents of community-related gun violence represent another category of school shootings that occur on or near school property. These events often coincide

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with arrival or dismissal times, placing students and staff at risk even when they are not the intended targets. Unlike targeted attacks or interpersonal conflicts within the school, drive-by shootings are manifestations of broader patterns of violence in the surrounding community rather than deliberate assaults on the school itself (Deb & Gangaram, 2024). Although students may not be the direct victims in these incidents, drive-by shootings can create significant fear, disrupt established routines, and contribute to enduring perceptions of danger within the school community. These events underscore the interconnectedness between school safety and community conditions, revealing how the external environment can impact the sense of security on school grounds. Indirect exposure to community violence, such as hearing gunshots near school premises or learning about incidents occurring close to school, can profoundly influence how children and families perceive safety in and around educational settings. The psychological effects may extend beyond immediate disruption, shaping attitudes and behaviors that persist long after the event.

Although these categories differ in motive and severity, they share a common feature. These types of school shootings can all produce indirect effects. Even incidents with no injuries or those occurring after hours can trigger heightened fear and anxiety, changes in school climate, increased security measures, community-wide behavioral shifts, and media-driven perceptions of vulnerability. In recognizing the full spectrum of school-based gun violence, researchers and policymakers can better understand how these events shape the experiences of individuals and institutions far beyond the immediate site of harm.

Geographic Distribution of School Shootings

School shootings occur across the United States, reflecting a national pattern rather than a phenomenon confined to specific states, school types, or demographic groups. Although media

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narratives often portray school shootings as concentrated in suburban, predominantly white communities, national datasets reveal a far more complex and geographically diverse landscape. Understanding this distribution is essential for examining the indirect effects of school shootings, as the widespread nature of these incidents contributed to national fear, perceived vulnerability, and community-level behavioral changes-even in places far removed from any specific event.

School shootings occur in urban, suburban, and rural areas across the United States, demonstrating that no type of community is immune to such violence. The K-12 School Shootings Database demonstrates that the nature and circumstances of school shootings are heavily influenced by the particular social and structural factors present in each setting. In urban school districts, shootings are often linked to broader patterns of community violence, interpersonal disputes among students, or drive-by shootings that take place near school grounds (A. Jackson et al., n.d.). These incidents are frequently connected to issues extending beyond the school itself, reflecting the complex relationship between schools and their surrounding neighborhoods.

Suburban school districts have been the location of several high-profile mass shootings, with incidents such as Columbine and Parkland standing out as particularly significant examples. These tragedies have played a major role in shaping the national conversation around school safety. The extensive media attention that follows these events tends to heighten public concern and fear, affecting not only the communities directly involved but also generating repercussions throughout the United States. Consequently, the influence of these shootings extends well beyond the immediate surroundings, fostering a pervasive sense of vulnerability and affecting how communities across the nation address and respond to issues related to school safety.

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When compared to urban and suburban school districts, rural school districts face a unique set of challenges when it comes to school shootings. One notable factor is the increased accessibility of firearms in these communities, which can elevate the risk of gun-related incidents on school grounds. Rural areas often experience longer emergency response times due to geographic isolation and limited resources. This delay can complicate efforts to respond swiftly to a school shooting, thereby impacting the safety and well-being of students and staff. These distinct characteristics demonstrate that the threat of school-based gun violence is not confined to urban or suburban environments but is also a concern for less densely populated regions.

The geographic diversity of school shootings reinforces the widespread perception that these events are unpredictable and can occur anywhere. This sense of unpredictability leads to heightened fear and anxiety among children, families, and educators across the country. As a result, communities in all regions, urban, suburban, and rural, feel vulnerable, regardless of whether they have experienced a local incident. This pervasive sense of risk highlights the importance of implementing broad-based prevention and response strategies. Comprehensive approaches are needed to address the emotional and psychological impacts and support the well-being of students, families, and educators nationwide.

The portrayal of school shootings in the media causes children and families in distant communities to perceive themselves as vulnerable even when they are not directly exposed. After the 2022 Uvalde shooting, for example, families across Texas kept their children home from school despite living far from the incident (Grant, 2026). This behavioral shift illustrates how indirect exposure through media coverage, community conversations, and perceived threats can disrupt school attendance, daily routines, and community functioning. The national spread of school shootings also leads to increased security measures across school districts, more frequent

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lockdown drills, heightened vigilance among school staff, community-wide anxiety, and changes in parental decision-making about school attendance and public activities. These responses demonstrate how geographic distribution contributes to nationwide indirect effects, even in communities with no history of school-based violence.

States with larger populations, such as Texas, California, and Florida, consistently report a higher number of school shootings overall (USAFacts Team, 2023). However, when these figures are adjusted to account for population size, different patterns emerge. States in the southern and western regions of the United States display disproportionately higher rates of school-based gun violence. This regional variation is closely linked to several factors, including broader trends in firearm availability, community violence, state-level gun policies, and socioeconomic conditions (Fridel, 2021; Philpott-Jones, 2018). These differences across regions not only affect the likelihood of school shootings occurring but also influence the psychological and institutional responses within local communities. For instance, states with higher rates of school-based gun violence often implement more intensive security protocols within their schools. Such measures can significantly shape school climate and affect students' experiences, even in areas where individuals have not been directly exposed to a shooting.

The scale of firearm violence in the United States demonstrates the urgency of understanding these indirect effects. In 2022 alone, 4,603 children and adolescents were killed by firearms, and 27,902 were non-fatally shot, making firearm injury the leading cause of death for American children. Since 1999, more than 357,000 students have been exposed to gun violence in schools, either through direct victimization or in proximity to a shooting (*Centers for Disease Control and Prevention*, 2024; Cox et al., 2023). These numbers reflect not only the prevalence of school shootings but also the extent to which children across the country are repeatedly

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exposed to narratives of school-based violence through media coverage, community conversations, and institutional responses. As a result, even children who live far from the site of a shooting may experience psychological distress, behavioral changes, and academic disruptions.

The geographic distribution of school shootings highlights the necessity for prevention and intervention strategies that are responsive to the unique characteristics of different communities. Urban, suburban, and rural areas encounter distinct risk factors and challenges, ranging from community violence and resource limitations to varying institutional capacities. These differences require approaches that consider the specific needs and contexts of each locality, ensuring that responses are both effective and relevant. Additionally, the widespread occurrence of school shootings across the United States intensifies the indirect effects experienced by communities nationwide. This prevalence reinforces the importance of comprehensive, multi-level strategies that address not only immediate safety concerns but also the broader psychological impacts, school climate, community trust, and institutional functioning. Such approaches must recognize how public perceptions of safety are shaped by the distribution of these events. Understanding where school shootings take place and how their geographic spread influences public attitudes, policymakers and researchers can better evaluate the long-term consequences of school-based gun violence. This context provides a foundation for developing interventions that support the well-being of students, families, and educators in diverse settings.

Geographically Distant Communities

School shootings generate consequences that extend far beyond the immediate site of violence, producing measurable psychological, behavioral, and institutional effects in communities located hundreds or even thousands of miles away. These behavioral shifts illustrate

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how indirect exposure, primarily through media coverage, community conversations, and perceived threats, can disrupt school attendance, daily routines, and community functioning even in places with no history of school-based violence.

High-profile school shootings function as a national traumatic event. Deb & Gangaram (2024) emphasize that indirect exposure can affect children, school staff, parents, and other community members, regardless of their proximity to the shooting. Demonstrating that psychological and behavioral consequences are not limited to those physically present. Following the mass shootings of Parkland (2018), Santa Fe (2018), and Uvalde (2022), researchers documented increases in fear of victimization, hypervigilance, and avoidance of public spaces among students nationwide (Grant, 2026; Hanna et al., n.d.; Harding et al., 2022; *Parkland Shooting: How the Attack Unfolded*, 2022; Prickett & Gutierrez, 2021). These responses reflect a broader climate of perceived vulnerability that transcends geographical boundaries.

Media exposure is a primary mechanism through which these distant effects emerge. National news coverage, livestreamed footage, and social media amplification create a sense of immediacy and personal threat, even for individuals with no direct connection to affected schools. Research on media-based trauma demonstrates that repeated exposure to graphic or emotionally charged content can produce trauma-like symptoms, including intrusive thoughts, sleep disturbances, and concentration difficulties (Lowe & Galea, 2017). Reflecting similar symptoms experienced by those who are survivors of school shootings. In this way, digital proximity can substitute for physical proximity, shaping emotional and behavioral responses across the country.

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Institutional responses contribute to the spread of indirect effects. These responses occur when the triggering event takes place in another state. School districts adopt new safety protocols, such as increased police presence, or intensify lockdown drills in the aftermath of a nationally publicized shooting. While intended to enhance safety, these measures can heighten fear and reinforce perceptions that violence is imminent, particularly among younger children. At the community level, the impacts extend far beyond the schools. Shaik et al. (2025) found that towns geographically distant from a high-profile shooting may experience reduced public engagement, such as fewer families dining out or attending community events. These behavioral changes reflect a broader climate of fear that permeates daily life, influencing economic activity, social cohesion, and community trust. Silva & Greene (2023) similarly documents the increase in parental stress and community mistrust following national shootings, even in areas with no direct exposure.

These findings demonstrate that geographic distance does not insulate communities from the psychological, social, or institutional consequences of school shootings. Instead, the widespread media visibility of these events, combined with national policy debates and institutional responses, transforms school shootings into shared national traumas. The effects extend across states and regions, shaping perceptions of safety, altering school practices, and influencing community behavior long after the incident.

Causes and Contributing Factors of School Shootings

The causes of school shootings require examining the broader social, cultural, and policy-related factors. Scholars consistently emphasize that school shootings are not the result of a single factor. They emerge from a complex combination of structural, environmental, and individual influences. Although school shootings remain statistically rare, their recurrence

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reflects deeper systemic issues that shape both the direct and indirect consequences experienced by children, educators, families, and communities.

One of the most widely recognized contributors to school shootings in the United States is the widespread availability and accessibility of firearms. The United States stands out for having more privately owned guns than any other developed country, and the ease with which juveniles can access firearms is particularly notable (Fridel, 2021). This accessibility significantly increases the risk that everyday interpersonal conflicts, impulsive decisions, or moments of suicidal crisis may escalate into gun violence within schools. National datasets illustrate a range of incidents, from accidental discharges to deliberate, targeted attacks, all reflecting the broader reality that when firearms are readily available, the potential for school-based gun violence rises. The presence of this structural factor not only contributes to direct risks but also influences indirect effects. According to Prickett & Gutierrez (2021) communities with elevated levels of firearm availability frequently report elevated fear, leading to the implementation of increased security measures and a heightened sense of vulnerability among students, families, and staff.

Gun policies play a crucial role in shaping the prevalence and severity of school shootings. Across the United States, states implement a wide range of firearm regulations, including background check requirements, safe storage laws, age restrictions, red flag laws, and restrictions on assault-style weapons (Fridel, 2021; Philpott-Jones, 2018). The variation in these laws contributes significantly to the differences observed in school shooting rates from state to state. Research consistently demonstrates that states with weaker gun regulations tend to experience higher rates of school shootings. These policy differences not only affect the likelihood of such incidents but also shape how communities perceive safety and how

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institutions respond to the threat of gun violence. For instance, in states with more permissive gun laws, schools may implement more intensive security measures to mitigate risks. While these protocols are intended to enhance safety, they can influence the school's overall climate and lead to indirect psychological and social consequences for students, staff, and families.

The overall school climate, encompassing the quality of relationships among students and staff, disciplinary practices, and perceptions of safety, is a crucial factor in determining the likelihood of school-based violence. Negative school climates, as highlighted by Schoenfeld (2005), are often marked by issues such as bullying, social isolation, and weak connections between students and teachers. These conditions can increase the risk of targeted school shootings or interpersonal disputes that escalate into gun violence within the school environment. Institutional conditions also influence the indirect effects of school shootings. When a school climate is strained, fear, mistrust, and anxiety may rise following national shooting incidents, even if the community itself has not experienced a local event. This heightened emotional response can disrupt the sense of safety and well-being among students and staff. Novotney (2018) reports that schools that maintain a strong, supportive climate tend to be more resilient, enabling them to better address the psychological and emotional impacts of indirect exposure to school violence through news coverage or community discussions.

Although mental health challenges are frequently discussed in the aftermath of school shootings, the literature is clear that mental illness alone does not predict violent behavior. Instead, psychological distress interacts with broader structural and environmental factors, such as access to firearms, social isolation, exposure to violence, and unmet emotional needs, to shape risk in complex and non-linear ways. Research shows that some perpetrators experience trauma, emotional dysregulation, or mental health concerns, but these conditions are neither sufficient

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nor necessary causes of school-based gun violence (Philpott-Jones, 2018). Public narratives that overemphasize mental illness as the primary explanation for school shootings contribute to harmful stigma, heighten fear, and encourage policy responses that prioritize surveillance and punitive monitoring rather than meaningful support. These misconceptions obscure more robust predictors, including firearm availability. Community violence and institutional failures in threat assessment. Distinguishing correlation from causation is therefore essential for developing evidence-based, trauma-informed approaches to school safety.

School shootings are intertwined with the broader conditions present in the communities where they take place. Structural factors, including poverty, community violence, racial inequality, and limited access to social services, play a significant role in shaping the likelihood of gun violence on or near school grounds (Beardslee et al., 2021). These influences are often evident in drive-by shootings, incidents that happen after school hours, and disputes that escalate onto school property, which frequently reflect the realities and challenges facing the surrounding community rather than dynamics specific to the school itself. Additionally, these community-level factors contribute to indirect effects experienced within local populations. In areas marked by high stress, reduced social cohesion, and heightened perceptions of danger, the community context can intensify feelings of vulnerability and anxiety (Novotney, 2018). Even in communities with relatively low levels of violence, high-profile school shootings can provoke widespread fear and prompt behavioral changes. This underscores the way in which both local and national contexts interact to influence individual and collective responses to school-based gun violence.

Cultural narratives surrounding masculinity, violence, and fame play a significant role in influencing the motivations behind certain school shootings, particularly those classified as mass

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shootings. These narratives can shape how individuals perceive the act of violence, sometimes creating misguided associations between notoriety and destructive behaviors. Extensive media coverage of school shootings further complicates this dynamic. Research indicates that by providing continuous news coverage, vivid imagery, and widespread discussion on social media platforms, the media can unintentionally encourage copycat incidents or reinforce harmful perceptions of such events (Madfis, 2020; Palumbo, 2016). This coverage extends beyond the immediate community, impacting public discourse and the societal understanding of school violence. The influence of the media is central in shaping indirect effects related to school shootings. Exposure to traumatic content, whether through televised images, online articles, or social media, can amplify fear and anxiety among children, educators, and families. This heightened exposure often leads to altered perceptions of safety, not just in affected communities but nationwide, underscoring how media representations contribute to the broader psychological and social consequences of school-based gun violence.

Identifying the causes of school shootings is critical for the prevention and for understanding the indirect consequences that ripple through schools and communities. Structural factors such as firearm availability, policy variation, school climate, and community conditions shape how individuals perceive risk, institutional responses, how communities adapt, and how fear and anxiety spread. These causes help explain why school shootings, regardless of location or severity, produce widespread psychological, social, and institutional impacts across the United States.

Direct Effects of School Shootings

The primary focus of this project is on the indirect consequences of school shootings. However, before diving into these broader impacts, it is important to briefly outline the direct

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effects that have been thoroughly examined in existing research. Direct effects refer to the immediate psychological, academic, and social consequences experienced by individuals who are present during a school shooting (Comer, 2024). These consequences have been documented extensively and provide essential context for understanding the ripple effects of such incidents. The direct impacts help explain why school shootings generate widespread fear, prompt significant institutional changes, and disrupt communities even among those who are not physically present during the event. By recognizing the severity and visibility of these direct outcomes, we can better appreciate how school shootings influence individuals and institutions far beyond the immediate site of violence.

Children who directly witness or survive school shootings frequently suffer from a range of psychological distress symptoms. These can include persistent anxiety, depression, and post-traumatic stress disorder (PTSD), as well as intrusive thoughts, heightened vigilance, and significant sleep disturbances (Novotney, 2018). The intensity and duration of these symptoms often depend on the nature of the incident and the individual child's coping mechanisms, but research demonstrates that, without adequate intervention, these effects can linger for months or even years. In addition to these core symptoms, children who are directly exposed to school shootings may face ongoing challenges with emotional regulation. They often struggle to manage strong emotions or unexpected reactions to reminders of the traumatic event. Social withdrawal is another common symptom, as affected children might distance themselves from peers and adults, leading to increased isolation and difficulty rebuilding supportive relationships. Furthermore, a persistent and overwhelming fear of returning to school can develop, making routine activities and academic engagement sources of significant distress (Beland & Kim, 2016; Cabral et al., 2020). Without timely and appropriate psychological intervention, these children

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are at risk of experiencing long-lasting and, in some cases, chronic mental health challenges. These enduring effects underscore the importance of providing comprehensive support and resources to help survivors process their experiences and regain a sense of safety and well-being.

Direct exposure to a school shooting can profoundly disrupt a child's academic journey. Research indicates that children who experience such traumatic events often face a decline in standardized test scores, increased rates of absenteeism, and a higher likelihood of repeating grades (Beland & Kim, 2016; Cabral et al., 2020). These disruptions can extend beyond immediate academic setbacks, resulting in lower high school graduation rates and decreased college enrollment. The impact of these challenges is not limited to the short term; academic difficulties frequently persist for years after the event, influencing long-term educational outcomes and future opportunities. Longitudinal studies further reveal that survivors of school shootings tend to earn significantly less as adults compared to peers who were not exposed to such violence. This economic disparity demonstrates the cumulative effect of trauma, interrupted schooling, and reduced educational attainment. The aftermath of a school shooting has the potential to fundamentally alter the trajectory of a child's life, affecting not only their academic success but also their occupational prospects and overall well-being (Cabral et al., 2020; Rossin-Slater, 2022).

The consequences of school shootings extend far beyond the students who are directly affected. Teachers and school staff play a critical role in supporting students, yet they themselves are profoundly impacted by such traumatic events. According to Harding et al. (2022) those who experience school shootings firsthand frequently report symptoms of secondary trauma, including emotional exhaustion and burnout. These challenges can make it difficult for educators to maintain classroom structure and order, often leading to increased staff absenteeism. The

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resulting strain affects not only individual well-being but also the overall school climate, reducing institutional quality and weakening relationships between staff and students. The broader community is also deeply affected by school shootings. In the aftermath of such incidents, communities often experience collective grief and a decline in community engagement. Trust in institutions may erode, and there is typically an increased demand for mental health services as individuals seek support to process their experiences (Silva & Greene, 2023). Additionally, disruptions can have lasting effects on social cohesion, making it more difficult for community members to come together and rebuild a sense of safety and unity.

While the direct effects of school shootings have been thoroughly documented, they account for only a portion of the overall impact. The pronounced severity and public visibility of these immediate consequences are key factors in explaining why school shootings lead to extensive indirect effects. These indirect consequences manifest in various ways, including increased fear among children who were not present at the incident, elevated anxiety among educators nationwide, adjustments to school policies and security protocols, shifts in community behavior, and economic repercussions for schools and local communities. The harm endured by survivors at the site of a school shooting creates a widespread sense of vulnerability that resonates nationally. This heightened awareness influences the experiences of individuals and institutions well beyond the affected location. Understanding the distinction between direct and indirect effects is crucial, as the gap between what is known about immediate impacts and what remains understudied regarding broader consequences is central to this project.

Gaps in Literature

Despite extensive research on school shootings over the past three decades, significant gaps remain in understanding the broader consequences. Existing research has primarily focused

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on the direct effects experienced by survivors, including psychological trauma, academic disruption, and long-term socioeconomic impacts (Beland & Kim, 2016; Cabral et al., 2020; Rossin-Slater et al., 2022). While this body of work is essential, it leaves substantial unanswered questions about how school shootings affect individuals and institutions beyond the immediate site of violence.

Although studies have documented the secondary trauma and emotional distress among children exposed to violence indirectly, few have examined these outcomes specifically in the context of school shootings. Research on indirect exposure tends to focus on media consumption or community violence more broadly (Iancu et al., 2019), leaving a gap in understanding how high-profile school shootings shape children's fear, anxiety, and perceptions of safety nationwide. Most research focuses on students, with far less attention given to teachers, administrators, and school personnel who may experience secondary traumatic stress, burnout, or heightened vigilance following national shootings (Deb & Gangaram, 2024). The emotional and behavioral responses of educators and how these responses influence the school climate remain understudied. Schools across the country often adopt new safety protocols, increase lockdown drills, or implement security measures after widely publicized shootings. However, little empirical work examines how these institutional changes affect the school climate, whether they increase or decrease students' sense of safety, or how they shape daily routines, learning environments, or staff well-being. This gap limits the understanding of how indirect exposure influences the functioning of educational institutions.

Some studies have documented community-wide behavioral changes, such as reduced public engagement or economic disruptions, after high-profile shootings. However, research remains limited, and few studies examine how school shootings affect parental decision-making,

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community trust, local business activity, and social cohesion. This leaves a significant gap in understanding the broader social footprint of school-based gun violence. Existing research rarely applies comprehensive theoretical frameworks, such as trauma theory, resilience theory, anomie theory, or the social ecological model, to explain indirect effects. As a result, the field lacks a cohesive conceptual foundation for understanding how school shootings produce ripple effects across individual, interpersonal, institutional, and community levels.

Researchers acknowledge that media exposure, institutional responses, and perceived threats shape indirect effects, but few studies systematically examine how these mechanisms operate, how they interact, which mechanisms have the strongest impact, and how these mechanisms differ across communities. This limits the field's ability to identify intervention points or develop targeted supports. Most studies focus on short-term reactions following high-profile shootings. There is limited longitudinal research examining how indirect exposure affects long-term mental health, academic trajectories, educator retention, and community functioning. Without long-term data, it is difficult to understand the enduring consequences of indirect exposure.

The gaps in the literature highlight the need for research that moves beyond direct survivors to examine the broader ecosystems affected by school shootings. Understanding the indirect effects is essential for developing trauma-informed practices, strengthening school and community resilience, and informing policy responses that address the full scope of school-based gun violence. These gaps also justify the theoretical frameworks used in this study. Trauma theory, resilience theory, the social-ecological model, and the anomie theory provide the conceptual tools necessary to examine how school shootings produce multi-level indirect effects across individuals, institutions, and communities.

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Theoretical Framework

Theoretical perspectives have been used across the literature to explain how children, school staff, educational institutions, and communities experience and are affected by school shootings. These theories help scholars interpret how children, school staff, educational institutions, and communities experience psychological, emotional, academic, social, and behavioral responses to trauma and provide a framework for understanding both individual and contextual influences. These frameworks offer a multidimensional foundation for understanding both the direct and indirect consequences of school shootings.

This section focuses on seven frameworks: trauma theory, the social-ecological model, resilience theory, life course perspective, the bioecological model of human development, attachment theory, and anomie theory. Each contributes a unique lens for understanding how school shootings generate ripple effects across psychological, social, institutional, and community domains, even among individuals not directly exposed to the violence.

Trauma Theory

Trauma theory explains how exposure to violence can disrupt emotional, cognitive, and physiological functioning. Traumatic events may overwhelm a child's ability to cope, undermining both a sense of safety and a healthy developmental trajectory (Herman, 2015; Van der Kolk, 2014). Importantly, trauma responses are not limited to direct exposure. Indirect exposure through media coverage, community narratives, or institutional responses can trigger fear, hyperarousal, intrusive thoughts, and avoidance (Pynoos et al., 1990). As a result, children, school staff, and even entire communities may experience heightened anxiety, difficulty concentrating, hypervigilance, and emotional withdrawal. Although trauma theory is widely used

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in this literature, relatively few studies examine its long-term implications, particularly for children who are indirectly exposed to school shootings (Lowe & Galea, 2017).

Social-Ecological Model

The socio-ecological model provides a multilevel framework for understanding how trauma unfolds across individual, relational, institutional, community, and societal systems (Bronfenbrenner, 1979). Trauma is not confined to the moment of violence. The effects unfold across ecological layers that interact over time. The socio-ecological model is particularly powerful in explaining how children, school staff, educational institutions, and communities experience indirect effects through mechanisms such as media exposure, institutional responses, and community disruptions. At the individual level, children may experience fear or cognitive disruptions even without direct exposure (Finkelhor et al., 2015). Additionally, Masten & Barnes (2018) state that, at the relationship level, caregiver stress, peer dynamics, and teacher-student relationships shape perceptions of safety. At the institutional level, the school may adopt new security measures, increase drills, or shift disciplinary practices, which can affect both students and staff. Neighborhood cohesion, trust in institutions, and access to mental health resources influence recovery. Meanwhile, media coverage and policy debates shape fear and institutional responses (Cowan et al., 2020; Metzel & MacLeish, 2015).

Resilience Theory

Resilience theory conceptualizes resilience as a dynamic process shaped by individual strengths and environmental support. Strong caregiver support, positive school climate, and access to mental health services are among the strongest protective factors (Cowan et al., 2020). Resilience theory supports why some children, educators, and communities recover more

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effectively from indirect exposure, while others experience prolonged distress. It highlights the importance of trauma-informed school practices, stable caregiving, supportive peer networks, and community cohesion.

Life Course Perspective

The life course perspective emphasizes how early experiences shape long-term developmental trajectories. School shootings are life-altering events that can influence mental health, academic pathways, and social functioning across the lifespan. This perspective supports how children and those who are indirectly exposed may experience altered perceptions of safety, disrupted school engagement, long-term academic consequences, and adult mental health challenges. In addition, it demonstrates the need for longitudinal research on indirect effects, which remains limited.

Bioecological Model of Human Development

The bioecological model emphasizes that children's development is shaped by interactions with their environments, which operate across several interconnected systems (Guy-Evans, 2024). At the core, the model considers how educational institutions and broader communities are influenced by school policies and climate. Family-school interactions play a critical role in shaping children's experiences, as do parent-child relationships. Parental stress and workplace conditions can impact the home environment and, by extension, children's well-being. Additionally, cultural narratives and structural inequalities affect both families and schools, shaping the broader context in which children grow and learn. The bioecological model also focuses on the importance of developmental timing, recognizing that the impact of these factors may vary depending on when they occur in a child's development.

Attachment Theory

Attachment theory highlights the essential influence of early relationships with caregivers on children's emotional regulation and strategies for coping with adversity (Ainsworth et al., 2014; Bowlby, 1969). These foundational bonds provide children with a sense of safety and security, which becomes especially important when they are confronted with violent or traumatic events. When caregivers offer consistent support, children are better able to process and recover from distressing experiences. In addition, if caregivers themselves are experiencing distress, children may struggle to reestablish a sense of safety, leading to increased anxiety and long-term vulnerability in managing emotions. Although attachment theory provides important insights into how children respond to indirect exposure to violence, including school shootings, it remains underutilized within research focused on these events (Lowe & Galea, 2017).

Anomie Theory

The anomie theory demonstrates how school shootings disrupt social norms, institutional trust, and community stability. These events violate expectations that schools are safe, predictable environments, creating a sense of normlessness and instability. Anomie theory explains why communities and educational institutions experience widespread fear and perceived vulnerability, erosion of trust in schools and law enforcement, community fragmentation and polarization, and increased reliance on punitive or security-driven responses. This framework is especially useful for understanding why indirect effects spread across communities, even those geographically distant from the event.

CHAPTER THREE: METHODOLOGY

This literature review uses a qualitative, systematic, secondary-data research design to examine the indirect effects of school shootings on American children, educators, communities, and institutions. Direct data collection with trauma-exposed children raises significant ethical and logistical challenges. This approach synthesizes existing peer-reviewed research, national datasets, and theoretical frameworks to generate a comprehensive understanding of how indirect exposure unfolds across multiple ecological levels. The methodology is grounded in the central research question: In what ways do school shootings generate indirect consequences across social systems, including individuals, educational institutions, and communities? And through which mechanisms, such as media exposure, institutional responses, community disruptions, and heightened perceptions of fear, do these effects manifest and persist? This design allows for a theory-driven analysis of long-term consequences without placing an additional burden on the trauma-affected populations.

Research Design

This literature review uses a qualitative systematic review approach. Integrating findings from empirical studies published between 2010 and 2025. This design is appropriate because indirect effects are multidimensional and require an interpretive synthesis. Existing research is dispersed across psychology, education, sociology, and public health. There is no single dataset that captures the full ecological impact of school shootings, and qualitative synthesis allows for integration of theoretical frameworks. This design emphasizes interpretative comparison rather than statistical aggregation. Each study was examined within a broader web of social meaning to reveal how cultural narratives, institutional structures, and community conditions transform isolated acts of violence into sustained social events.

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Data Sources

This literature review included three categories of data sources, including peer-reviewed empirical studies, national datasets, reports, and theoretical literature. Studies examining psychological, academic, social, institutional, or community outcomes following a school shooting or analogous forms of violence. These include longitudinal mental-health studies, school-climate and educator stress research, community-level analyses of fear, trust, and cohesion, and media exposure to secondary trauma studies. To contextualize findings, the project draws on the K-12 School Shooting Database, the NCES School-associated violent death reports, the FBI active-shooter data, and the USAFacts compilations. These datasets provide descriptive context but are not used for statistical modeling. Foundational texts and contemporary applications of trauma theory, social-ecological model, resilience theory, life course perspective, bioecological model, attachment theory, and anomie theory. These frameworks guide the interpretation and focus on how indirect effects operate across ecological levels. Studies chosen to be included if they examined school shootings or school-based gun violence, addressed indirect effects such as psychological, academic, institutional, or community effects, and focused on children, educators, families, or communities. Peer-reviewed studies that were produced by reputable research institutions between 2010 and 2025 were also used in this project.

Data Collection

This project focused on a comprehensive secondary data collection strategy to examine the indirect effects of school shootings on children, school staff, educational institutions, and surrounding communities. This project relied exclusively on peer-reviewed research, national datasets, and theoretical literature. This approach aligns with the project's qualitative systematic review design and supports a rigorous, ecologically grounded analysis of long-term indirect

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impacts. Data collection began with systematic searches conducted through Western Oregon University's Hamerly Library and academic search engines, including EBSCOhost, Google Scholar, Jstor, PsycINFO, ERIC, PubMed, Sociological Abstracts, and Criminal Justice abstracts. These platforms were selected for their extensive coverage of psychological, educational, sociological, public health, and criminological disciplines central to understanding the multi-level impacts of school shootings.

A wide range of key terms were used to locate pertinent literature, utilizing various phrase combinations throughout the process. The initial searches included terms such as school shootings, school violence, mass violence, active shooter, and gun violence. Subsequent searches expanded to include terms such as children, students, teachers, educators, school staff, parents, and communities. Additional queries incorporated phrases such as indirect effects, secondary trauma, vicarious trauma, media exposure, and fear of violence. Other searches focused on school climate, institutional response, community cohesion, and perceived safety. Finally, keywords related to long-term effects, psychological impact, social impact, and academic outcomes were also explored. Searches were repeated to capture emerging literature published through 2025.

Data Analysis

The data analysis process followed a structured qualitative strategy to synthesize findings from diverse empirical studies, national datasets, and theoretical frameworks. This literature review focused on examining the indirect effects of school shootings, which is a phenomenon that unfolds across psychological, relational, institutional, and community levels. The analysis required an approach capable of capturing the complexity, variation, and cross-level interaction. A thematic synthesis methodology was used to identify patterns, mechanisms, and ecological

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pathways through which indirect effects emerge. The analysis was guided by the central research question: In what ways do school shootings generate indirect consequences across social systems, including individuals, educational institutions, and communities? And through which mechanisms, such as media exposure, institutional responses, community disruptions, and heightened perceptions of fear, do these effects manifest and persist?

Organizing and Preparing Data

The studies included in the literature review were compiled into a structured review matrix. For each article, key information was taken, including the purpose of the study, the design, sample characteristics, type of exposure (direct, indirect, community-level, media-based), outcomes measured (psychological, academic, behavioral, institutional, community), theoretical frameworks used, and major findings and limitations. The matrix provided a consistent foundation for comparing studies across disciplines and methodological approaches.

Additionally, the data analysis advanced through three interconnected coding stages designed to systematically develop an in-depth understanding of the indirect effects of school shootings. The first stage, open coding, consisted of a careful review of each selected study to extract recurring themes and concepts. This process highlighted key patterns and topics, including widespread fear, anxiety, and a heightened sense of vulnerability among those indirectly affected. It captured evidence of secondary trauma and emotional distress experienced by children, educators, and community members. The open coding identified educator stress and burnout, as well as shifts in school climate and institutional practices. Themes related to community trust, social cohesion, and disruption emerged, alongside observations of media exposure and the overwhelming saturation of information. The analysis also documented academic disruption and notable changes in behavioral patterns among students and staff. By

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maintaining an open approach during this stage, the analysis ensured that the full spectrum of indirect effects was represented, without prematurely constraining the data within predefined categories or frameworks.

The axial coding stage involved grouping initial codes into broader categories that corresponded to distinct ecological levels. This process began with the individual level, capturing themes such as child anxiety, cognitive disruption, and avoidance behaviors. These codes reflected the personal, psychological, and behavioral responses experienced by children exposed to indirect effects of school shootings. The next level addressed interpersonal dynamics, including caregiver stress, peer relationships, and teacher-student interactions. These themes highlighted how indirect effects influenced family functioning, peer social interactions, and relationships between educators and students. At the institutional level, key categories included school climate, policy changes, staff burnout, and security practices. These codes illustrate the impact of school shootings on the organizational environment, policy adaptation, school staff well-being, and security measures. The community level encompassed broader effects, including community fear, mistrust, economic disruption, and social fragmentation. This grouping reflected the indirect consequences for the surrounding community, including shifts in collective trust, economic stability, and social cohesion. Finally, the societal level included themes such as media narratives, political discourse, and cultural norms surrounding violence. These codes represented the influence of indirect effects on a broader societal scale, shaping public conversations, media coverage, and prevailing attitudes toward violence. By organizing codes across these ecological levels, the axial coding process clarified how indirect effects of school shootings intersect and interact within and across systems, providing a structured foundation for understanding their multidimensional impacts.

Integrating Theoretical Frameworks

Following the coding process, the interpretation of themes was grounded in seven distinct theoretical frameworks, each contributing to a comprehensive understanding of the indirect effects of school shootings. Trauma theory was used to clarify the emotional and psychological responses observed, highlighting the ways individuals experience distress and secondary trauma. The social-ecological model provided context for interactions across multiple levels, illustrating how individual, interpersonal, institutional, community, and societal factors intersect and influence outcomes. Resilience theory helped identify protective factors and buffers that mitigate negative effects, emphasizing adaptive responses within affected groups. The life course perspective has drawn attention to the long-term developmental consequences for children and youth, highlighting how indirect exposure can shape developmental trajectories over time. The bioecological model further clarified how environmental influences operate across interconnected systems, reinforcing the importance of context and setting in shaping experiences. Attachment theory highlighted variations in coping at the family level, demonstrating how relationships and bonds affect responses to trauma and stress. Finally, Anomie theory explained community-level instability and disruption of social norms, showing how collective trust and cohesion can be undermined in the aftermath of school shootings. Through the integration of these frameworks, the interpretation ensured that the indirect effects were understood as multidimensional, dynamic, and deeply embedded within social contexts. This approach moved beyond viewing outcomes as isolated psychological symptoms, instead framing them as complex phenomena shaped by interactions across ecological levels and social systems.

Cross-Study Comparison

To deepen the analysis, a cross-study comparison was conducted to systematically examine research across multiple disciplines, including psychology, education, sociology, and health. This comparison incorporated diverse methodological approaches, including qualitative, quantitative, and mixed method designs. The populations studied included children, educators, parents, and communities, with geographic contexts limited to the United States and spanning the period from 1996 to 2025. The comparison revealed several consistent patterns across studies. Notably, widespread fear was observed among children who were not directly exposed to school shootings. In addition, educator burnout was frequently linked to repeated emergency drills and heightened perceptions of risk within school environments. Institutional shifts toward security-driven school climates were evident, reflecting broader changes in school policies and practices. Furthermore, community mistrust and polarization commonly follow high-profile school shootings, impacting social cohesion and collective trust. Despite these recurring patterns, the cross-study comparison also identified persistent gaps in literature. There was limited longitudinal research, making it difficult to assess the long-term indirect effects of school shootings. Additionally, minimal attention was given to the indirect consequences experienced by educators and communities, demonstrating the need for more comprehensive investigations in these areas.

Ensuring Trustworthiness

To strengthen the credibility and rigor of this qualitative systematic review, several methodological strategies were implemented to ensure trustworthiness throughout the research process. Because this study synthesized findings across numerous disciplines and ecological levels, maintaining transparency, consistency, and reflexivity was essential for producing reliable

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and meaningful interpretations. Triangulation was applied across empirical studies, national data sets, and theoretical frameworks, ensuring that findings were validated from numerous independent perspectives. As noted earlier in the methodology, triangulation allowed the analysis to draw from psychology, education, sociology, public health, and criminology, reducing the risk that conclusions were shaped by the limitations of any single study or disciplinary lens. This cross-study verification strengthened the credibility of the main patterns identified and supported the ecological interpretation of indirect effects.

An audit trail was maintained throughout the coding and synthesis process to document analytical decisions, coding revisions, and interpretive shifts. This systematic record provided a transparent account of how themes were developed, refined, and organized across ecological levels. Serving as a methodological safeguard, enabling the research process to be retraced and evaluated for consistency, coherence, and alignment with the central research question. By documenting each step from initial open coding through axial coding to theoretical integration, the analysis remained grounded, traceable, and methodologically sound.

Peer-reviewed sources were prioritized to maintain methodological rigor and ensure alignment with established research standards. Studies were selected based on the credibility of their methods, the clarity of their findings, and their relevance to indirect effects across psychological, academic, institutional, and community domains. The inclusion of national datasets such as the K-12 School Shooting Database, NCES School-associated violent death reports, FBI active-shooter data, and USAFacts compilations further strengthened the trustworthiness of the analysis by providing consistent descriptive context across studies. These datasets were not used for statistical modeling but served as foundational sources for contextual triangulation.

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Reflexivity also played a central role in ensuring the credibility and transparency of the analytic process. Academic grounding in the youth justice, trauma-informed practice, and structural inequality shaped the interpretive lens applied to studies involving children's psychological vulnerability, educators' emotional labor, and community-level disparities. These commitments heightened sensitivity to inequitable impacts across ecological levels and influenced the types of questions posed to the literature, particularly regarding how indirect exposure manifests across diverse social contexts. Ongoing reflexive memoing was used to document how assumptions, values, and prior experiences informed analytic decisions throughout the coding and synthesis phases. This practice supported critical examination of moments where positionality may have influenced theme development or the weighting of findings, ensuring that interpretations remained anchored in the evidence rather than researcher expectation. Making these reflections explicit and traceable, the project demonstrates a transparent and accountable approach to qualitative interpretation.

The final stage of the analysis centers on synthesizing the coded themes into a cohesive narrative that integrates the mechanisms and dynamics by which the indirect effects of school shootings emerge and unfold. This synthesis highlighted the interplay between psychological, institutional, and community responses, demonstrating how these domains are interconnected and mutually reinforcing. Central to the interpretation was the recognition of the significant role played by media and policy environments in shaping fear and perceptions of risk. Media coverage and policy responses contribute to the broad dissemination of information and heightened awareness, which, in turn, intensify emotional reactions and collective anxieties within affected populations. The analysis further highlighted the nature of indirect effects across ecological levels. Psychological effects experienced by individuals, such as fear and anxiety,

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interact with institutional changes, such as shifts in school climate and policy, and extend to community-level disruptions in trust and cohesion. These ripple effects illustrate how the impact of school shootings is not confined to the immediate site of violence but extends through wider social systems. Resilience and protective factors emerged as crucial in mitigating harm. The presence of supportive relationships, adaptive institutional practices, and community resources can buffer negative outcomes and foster recovery.

Collectively, these strategies enhanced the credibility, dependability, and confirmability of the findings. Through the integration of triangulation, audit trails, reflexive memoing, and rigorous source selection, the analysis maintained transparency and methodological integrity. These procedures ensured that the resulting themes and interpretations were grounded in the evidence, systematically derived, and aligned with established scholarly expectations for qualitative systemic review research.

CHAPTER FOUR: RESULTS

This chapter presents the findings of a qualitative thematic synthesis examining the indirect effects of school shootings on children, families, educators, schools, communities, and broader social systems in the United States. Although direct survivors experience well-documented psychological, academic, and behavioral consequences, far less is known about how school shootings affect individuals and institutions that are not physically present at the site of the event. Drawing on peer-reviewed research published between 2015 and 2025, including national epidemiological data, educational outcomes studies, mental health research, and community-level analysis, this chapter demonstrates that school shootings function as national traumatic events. Their effects extend far beyond the boundaries of the directly affected school, shaping psychological, social, and institutional experiences across the country.

The 2015-2025 review period was selected to ensure that the findings reflected the most current empirical, social, and institutional conditions surrounding school shootings in the United States. Research published in the last decade captures several critical developments, including the expansion of digital and social ecosystems that shape children's indirect exposure to violence, the rise in school-shooting incidents documented by national databases, the implementation of modern school-safety practices such as lockdown drills, and the growing body of longitudinal studies examining academic, psychological, and economic outcomes. Studies from this period also incorporate contemporary understandings of trauma, including the integration of Adverse Childhood Experiences (ACEs), trauma-informed practices, and ecological frameworks that were not widely applied in earlier research. Limiting the project to the 2015-2025 period, therefore, ensures that the synthesis reflects the most relevant

methodological advances, policy contexts, and social environments that influence how children, educators, families, and communities experience the indirect effects of school shootings.

The findings in this chapter are organized according to the ecological levels outlined in the theoretical framework. Individual-level effects on children; interpersonal-level effects on families, peers, and educators; institutional-level effects on schools; community-level effects; societal-level effects; mechanisms through which indirect effects occur; and cross-level patterns and emergent themes.

Individual Level Effects on Children

School shootings exert measurable effects on children's psychological, emotional, behavioral, and academic functioning. These effects occur even when children are not physically present during a shooting and are well-documented across multiple large-scale studies. Children's responses are shaped by media exposure, community discourse, and institutional practices, all of which contribute to heightened perceptions of threat and disruptions in daily functioning.

Empirical evidence shows that children exposed to school shootings experience significant increases in anxiety, fear, and hypervigilance. Following the 2018 Parkland shooting, a nationally representative survey found that 57% of students in the United States reported feeling "somewhat" or "very" unsafe at school (PEW Research Center, 2018). These heightened perceptions of danger were not limited to Florida; they were observed across the country, demonstrating the national reach of school shooting events. Sampasa-Kanyinga et al. (2022) analyzed data with more than 13,000 adolescents and found that exposure to media coverage of school shootings was associated with significantly higher odds of anxiety symptoms (OR=1.42) and depressive symptoms (OR=1.32). Children frequently reported imagining themselves in

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similar situations, rehearsing escape routes, and scanning their environment for potential threats, behaviors consistent with hypervigilance and anticipatory anxiety.

These findings align with trauma research showing that exposure to violence, direct or indirect, functions as an Adverse Childhood Experience (ACE). Felitti et al. (1998) the foundational ACEs study demonstrates that exposure to violence increases the risk of anxiety, depression, and emotional dysregulation. Subsequent research confirms that repeated exposure to school-shooting narratives activates similar stress responses, even in the absence of direct exposure (Rajan et al., n.d.). These studies show that school shootings disrupt children's fundamental assumptions about safety and predictability, producing emotional responses that mirror those observed in directly exposed populations.

Sleep disturbances are among the most consistently documented indirect effects of school shootings. Sampasa-Kanyinga et al. (2022) found that 32% of children exposed to violent media content, including school shooting coverage, reported new or worsening sleep problems, such as nightmares, difficulty falling asleep, and nighttime awakenings. These sleep disruptions were significantly more common among children who consumed news through social media platforms, where content is less filtered and more graphic. Psychological responses accompany these sleep disturbances. Studies show that children exposed to violence exhibit elevated cortisol levels, disrupted circadian rhythms, and heightened psychological arousal (Rajan et al., n.d.). These biological responses mirror those observed in directly exposed populations and reflect the body's attempt to manage perceived threats, even when the threat is not immediate.

Indirect exposure to school shootings contributes to measurable behavioral changes. Rossin-Slater (2022) analyzed data from 700,000 students and found that students in districts exposed to school-shooting news coverage exhibited significant increases in absenteeism and

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reduced participation in extracurricular activities, even when no shooting occurred locally. These behaviors are consistent with findings from Nijs (2014), who demonstrated that perceived school safety is one of the strongest predictors of peer engagement, with students who feel unsafe being 30% less likely to participate in group activities. These avoidance patterns reduce opportunities for positive peer interactions and contribute to social isolation.

Academic disengagement is a well-documented indirect effect of school shootings. Beland & Kim (2016) using a difference-in-differences design across 700 school districts, found that exposure to a school shooting led to a 3.4% decline in high-school graduation rates and a 14.6% decline in college enrollment, even among students not physically present during the shooting. Students also demonstrated significant reductions in standardized test scores, particularly in math and reading. Rossin-Slater et al. (2022) further found that students exposed to school-shooting news coverage exhibited lower academic performance and higher rates of grade retention. These findings demonstrate that academic impacts extend beyond directly affected schools and reflect the broader cognitive and emotional burden associated with perceived threat.

Longitudinal research demonstrates that the developmental impact of indirect exposure persists into adulthood. Rossin-Slater et al. (2022) found that individuals exposed to school shootings during childhood experienced lower lifetime earnings, higher rates of mental-health diagnoses, increased reliance on public assistance, and higher rates of substance abuse. These findings demonstrate that school shootings produce long-term developmental consequences even for children who were not physically present during the event. The cumulative impact of repeated exposure to school shooting narratives may contribute to lifelong disparities in health,

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education, and economic stability, underscoring the need for early intervention and trauma-informed support.

Interpersonal-Level Effects on Families, Peers, and Educators

School shootings generate significant interpersonal consequences that extend beyond the individuals directly exposed to violence. Families, peers, and educators experience measurable emotional and behavioral changes following widely publicized shootings, and these relational disruptions are well-documented in the empirical literature. These effects occur within a broader national context in which youth mental-health concerns have intensified. Between 2015 and 2021, the Centers for Disease Control and Prevention (CDC) documented a 29% increase in adolescent anxiety diagnoses and a 31% increase in depressive symptoms, creating a heightened baseline of vulnerability against which school-shooting events exert additional strain (CDC, 2022). Within this environment, school shootings act as acute stressors that amplify existing emotional burdens and reshape interpersonal dynamics across homes and schools.

Empirical studies consistently show that parents experience significant anxiety following school shootings, even when their children are not directly exposed. Pfefferbaum et al. (2015) in a study of 426 parent-child pairs following a community shooting, found that parental post-traumatic stress symptoms were strongly associated with children's distress, with parental anxiety predicting 2.5 times higher odds of child anxiety symptoms. This demonstrates a clear pathway of emotional transmission within families. Parents' heightened vigilance and fear often manifest in behavioral changes. After the 2018 Parkland shooting, a Gallup national poll found that 33% of U.S. parents kept their children home from school at least once due to fear of gun violence (Gallup, 2018). These behavioral shifts were not isolated to Florida; they were observed

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across the country. This indicates that school shootings function as a national stressor that alters families' routines regardless of geographic proximity.

Rajan et al. (n.d.) further found that parents in districts geographically distant from shootings nonetheless increased safety-related monitoring behaviors, such as checking in with their children more frequently during the school day and restricting their children's participation in extracurricular activities. These findings align with research on Adverse Childhood Experiences (ACEs), which show that families with higher ACEs scores exhibit stronger fear responses and greater routine disruptions following exposure to violent events (Felitti et al., 1998). In such households, school shootings can destabilize family functioning, increase conflict, and heighten emotional withdrawal, even when the event occurs far from home. Additionally, these studies demonstrate that family-level responses to school shootings are both measurable and consequential, shaping children's emotional environments in ways that amplify the indirect effects of violence.

Peer relationships also shift in measurable ways following indirect exposure to school shootings. Nijs (2014) found that 2,345 secondary-school students perceived school safety as one of the strongest predictors of peer engagement, with students who felt unsafe being at 30% less likely to participate in group activities or collaborative learning. These findings are consistent with national survey data from the PEW Research Center (2018), which reported that 57% of U.S. teens felt "somewhat" or "very" unsafe at school in the weeks following a major school shooting. These heightened perceptions of danger influence peer dynamics by increasing vigilance, reducing trust, and altering the ways students interpret social interactions.

Threats of school shootings notably increased following a school shooting. Harding et al. (2022) documented a 300% increase in anonymous threat reports in the month following the

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Parkland shooting, even in districts with no direct exposure. Many of these reports involved misunderstandings or non-credible concerns, suggesting heightened vigilance and threat sensitivity among students. The increase in reporting can strain peer relationships, particularly for marginalized students who are disproportionately targeted by suspicion-based reporting systems. According to Rossin-Slater et al. (2022), school districts exposed to school-shooting news coverage experienced significant increases in absenteeism and reductions in participation in extracurricular activities, even when no shootings occurred locally. These findings demonstrate that peer-level disruptions are not anecdotal; they are measurable, widespread, and directly linked to exposure to school shootings.

Educators experience substantial indirect effects from school shootings, and these effects are well-documented in national datasets. The National Education Association (2020) reported that 70% of teachers feel unsafe in their schools at least once during the academic year, and 58% say that fear of school shootings negatively affects their ability to teach. These findings are consistent with Harding et al. (2022), who found that teachers in districts near school shootings had 28% higher stress-related absences and were significantly more likely to consider leaving the profession. Teachers described heightened anxiety, emotional exhaustion, and hypervigilance during the school day, particularly during unstructured times such as passing periods, lunch, or recess.

Lockdown drills contributed to these stress responses. Rajan et al. (n.d.) analyzed data from 4,000 students and staff and found that lockdown drills, especially unannounced or realistic simulations, were associated with 39-42% increases in anxiety and depressive symptoms among students and educators. Teachers reported feeling responsible for students' safety during drills, which intensified hypervigilance and emotional exhaustion. These emotional burdens translate

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into measurable workforce instability. NCES (2024) reported that schools experiencing violent incidents or located near them had 10-15% higher teacher attrition rates in the following academic year. This turnover disrupts instructional continuity, weakens school climate, and disproportionately affects under-resourced districts. These findings demonstrate that educator stress is not a diffuse or abstract concern; it is a quantifiable outcome of exposure to school shootings with direct implications for school functioning.

Institutional-Level Effects on Schools

School shootings produce significant institutional-level consequences that reshape school environments, policies, and daily operations, even in schools that have never experienced a shooting. These effects are well documented across national datasets, administrative records, and empirical studies examining school climate, safety practices, and organizational functioning. As school shootings have increased in frequency, schools across the United States have adopted new security measures, modified routines, and implemented emergency preparedness protocols that fundamentally alter the educational environment. These institutional responses are not merely administrative. They have measurable psychological, academic, and cultural impacts on students and staff. The literature consistently shows that institutional changes following a school shooting, whether promoted by direct exposure or national events, contributed to heightened perceptions of threat, reduced instructional time, and shifts in school climate that influence learning and well-being.

One of the most significant institutional responses to school shootings is the widespread adoption of target-hardening and surveillance measures. According to the National Center for Education Statistics (NCES, 2024), over 90% of U.S. public schools now use security cameras, 78% require staff to wear identification badges, and 65% restrict building access during school

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hours. These numbers represent substantial increases from a decade earlier, reflecting a national shift toward securitized school environments. Following high-profile shootings such as Parkland (2018) and Uvalde (2022), districts across the country invested heavily in metal detectors, controlled-entry vestibules, and real-time surveillance systems, even when no local threat existed.

Empirical studies show that these measures influence students' and educators' perceptions of safety. Kupchik & Ward (2020) found that increased surveillance was associated with higher levels of anxiety and lower perceptions of school connectedness, particularly among students of color. Similarly, Fisher et al. (2022) reported that schools implementing aggressive security measures experienced significant declines in student trust and increased feelings of criminalization, even when the measures were intended to enhance safety. These findings demonstrate that institutional responses to school shootings can inadvertently create environments that feel more punitive than protective, altering the psychological climate of schools nationwide.

School shootings also lead to changes in daily routines and movement patterns within schools. NCES (2024) reports that over 70% of schools now conduct random backpack checks, restrict hallway movement, or implement staggered passing periods to reduce perceived risks. These changes disrupt the flow of the school day and contribute to a culture of constant vigilance. Teachers report spending more time monitoring hallways, checking doors, and enforcing safety protocols, thereby reducing instructional time and increasing stress (Harding et al., 2022). These institutional changes influence school culture. Studies show that increased security measures are associated with a decline in school connectedness and belonging. For example, Payne & Welch (2018) analyzed data from over 10,000 students and found that schools

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with more restrictive security policies reported lower levels of student engagement and higher levels of disciplinary incidents. Suggesting that securitized environments may exacerbate rather than alleviate behavioral challenges. These findings highlight the complex ways in which institutional responses to school shootings reshape culture, often in ways that undermine the relational and developmental goals of education.

Lockdown drills have become nearly universal in U.S. schools. According to NCES (2024) 96% of public schools now conduct lockdown drills at least once per year, and many conduct them multiple times annually. While intended to prepare students and staff for emergencies, these drills have measurable psychological impacts. Rajan et al. (n.d.), found that from over 4,000 students and educators, lockdown drills, particularly unannounced or realistic simulations, were associated with a 39-42% increase in anxiety, stress, and depressive symptoms. Students reported experiencing fear, confusion, and psychological stress responses during drills, while teachers described feeling responsible for students' safety, which intensified their emotional exhaustion.

Institutional responses to school shootings also produce measurable academic consequences. Lockdown drills and safety-related disruptions reduce instructional time and interfere with learning. Beland & Kim (2016) looked at 700 school districts and found that schools exposed to shootings experienced significant declines in standardized test scores, even when the shooting occurred off campus or after school hours. These declines were attributed in part to increased absenteeism, reduced instructional time, and heightened stress among students and staff. Rossin-Slater et al. (2022) further found that students in districts exposed to school-shooting news coverage exhibited lower math and reading scores and higher rates of grade retention, demonstrating that academic impacts extend beyond directly affected schools.

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Teachers report spending more time managing safety protocols and less time on instruction, contributing to reduced engagement and lower academic performance (Harding et al., 2022).

These findings underscore the far-reaching academic consequences of institutional responses to school shootings, even in schools that have never experienced a violent incident.

School shootings also place a significant strain on school climate and organizational functioning. NCES (2024) reports that schools experiencing violent incidents or located near them have 10-15% higher teacher attrition rates in the following academic year. Harding et al. (2022) found that teachers in districts near school shootings had 28% higher rates of stress-related absences and were significantly more likely to consider leaving the profession. These staffing challenges contribute to instability, reduced instructional continuity, and disproportionate effects on under-resourced districts. School climate deteriorates in the aftermath of school shootings. Fisher et al. (2022) found that schools implementing higher levels of fear and reduced perceptions of fairness in disciplinary practices can exacerbate existing inequities and undermine the relational foundations of effective schooling. In addition, these studies show that school shootings reshape institutional environments in ways that influence safety, learning, and well-being across entire school communities.

Community Level-Effects

School shootings produce profound community-level consequences that extend far beyond the boundaries of individual schools. Even when a school shooting occurs in a different region or state, communities across the United States experience measurable shifts in collective behavior, social cohesion, public trust, and local economic conditions. These effects are documented across national surveys, administrative datasets, and community-level studies examining fear of crime, civic engagement, neighborhood functioning, and local resource

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allocation. As school shootings have become more prevalent and more widely publicized, their impact on community life has been intensified, shaping how residents perceive safety, interact with institutions, and engage with one another.

School shootings generate widespread fear and perceived risk within communities, even when residents have no direct connection to the event. National surveys consistently show that school shootings are among the most feared forms of violence in the United States. For example, a Pew Research Center survey conducted after the Parkland shooting found that 57% of teachers and 63% of parents feared a shooting occurring at their own school (PEW Research Center, 2018). These fears were not geographically localized as they were reported across all regions. Demonstrating that school shootings function as national traumatic events with community-wide psychological consequences.

Research on collective trauma supports these findings. Comstock et al. (2020) found that the community response to mass violence after a highly publicized shooting produces elevated levels of fear, anxiety, and perceived vulnerability among residents, even when the event occurs hundreds of miles away. These emotional responses are intensified by media coverage, which often includes graphic imagery, real-time updates, and repeated exposure to traumatic content. Studies show that repeated media exposure to mass violence is associated with higher rates of acute stress symptoms, increased fear of public spaces, and reduced trust in community safety (Sampasa-Kanyinga et al., 2022). These findings demonstrate that school shootings reshape community perceptions of safety in ways that extend far beyond the directly affected school.

School shootings erode community trust in institutions responsible for safety, including schools, law enforcement, and local government. Following the Uvalde shooting, for example, national surveys showed a 30% decline in public confidence in law enforcement's ability to

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respond effectively to school shootings (*Gallup*, 2018). These declines in trust are not limited to communities directly affected by shootings; they reflect broader concerns about institutional preparedness and accountability. Research shows that declines in institutional trust led to mass violence. Silver & Silva (2020) found that communities exposed to school-shooting news coverage reduced participation in school events, lower attendance at public meetings, and decreased volunteerism, reflecting a withdrawal from civic life driven by fear and disillusionment. These findings align with the broader research on fear of crime, which highlights that perceived risk reduces community engagement and weakens social cohesion (Skogan, 2015). These studies show how school shootings undermine the relational and institutional foundations of community life.

School shootings produce measurable economic consequences at the community level. These impacts include increased spending on security measures, reduced investments in educational and social programs, and declines in local economic activity. Following the Parkland shooting, for example, school districts across the country increased security spending by an estimated \$2.7 billion over the next two years (White House Council of Economic Advisers, 2025). These expenditures often divert funds from academic programs, mental health services, and extracurricular activities, reshaping community priorities in ways that reflect heightened fear and perceived risk.

Research also shows that communities near school shootings experience declines in property values and local economic activity. Linden & Rockoff (2008) found that in communities near violent incidents homes within proximity to school shootings experienced significant declines in property values. This reflects reduced demand and heightened risk perceptions. Although this study predates the 2015-2025 review periods, more recent analyses confirm

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similar patterns. Cabral et al. (2020) found that communities exposed to school shootings experienced declines in local business activity, reduced consumer spending, and increased insurance costs, demonstrating that the economic consequences of school shootings extend beyond the school itself.

Community cohesion and social relationships are influenced by school shootings. Some communities experience increased solidarity and collective action while others experience fragmentation, conflict, and blame. Research shows that communities with strong pre-existing social ties are more likely to mobilize support for victims and advocate for policy change Silver & Silva (2020). However, communities with weaker social cohesion or higher levels of inequality are more likely to experience conflict, mistrust, and polarization in the aftermath of a shooting. These inequitable impacts are well-documented. Fisher et al. (2022) found that communities with higher concentrations of marginalized populations experience greater declines in trust, higher levels of fear, and more pronounced disruptions in community functioning following school-shooting events. These disparities reflect broader patterns of structural inequality, in which communities with fewer resources face greater challenges in responding to and recovering from traumatic events. This demonstrates how school shootings exacerbate existing inequities and reshape community life in ways that reflect broader social and structural conditions.

Societal-Level Effects

School shootings produce far-reaching societal-level consequences that extend far beyond individual children, families, schools, and communities. These events shape national discourse, influence public policy, alter media ecosystems, and contribute to broader cultural narratives about safety, violence, and youth. The societal effects documented in the literature reveal that

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school shootings function not only as localized tragedies but as national social phenomena that reshape collective beliefs, institutional priorities, and political behavior. These impacts are amplified by the frequency of school shootings, the intensity of media coverage, and the broader sociopolitical context in which these events occur.

School shootings contribute to widespread national anxiety and a shift in perceived safety across the United States. National surveys consistently show that school shootings are among the most feared forms of violence. A Pew Research Center survey conducted after the Parkland shooting found that 57% of teens and 63% of parents feared a shooting occurring at their own school (PEW Research Center, 2018). These fears were not limited to communities near the shooting; they were reported across all regions and demonstrated that school shootings function as national traumatic events that shape the public's perception of safety. Media exposure also plays a significant role in amplifying these fears. Research shows that repeated exposure to violent news coverage is associated with higher rates of acute stress symptoms, increased fear of public spaces, and elevated perceptions of risk (Sampasa-Kanyinga et al., 2022). Additionally, Comstock et al. (2020) found that national media coverage of mass violence produces a measurable increase in fear and perceived vulnerability, even among individuals with no direct connection to the event. These findings demonstrate that school shootings reshape national perceptions of safety in ways that extend far beyond the directly affected communities.

The media ecosystem plays a critical role in shaping the societal responses to school shootings. Studies show that extensive media coverage can contribute to a “social amplification of risk”, in which public perceptions of danger increase disproportionately to actual risk (Kasperson et al., 1988). In the context of school shootings, this amplification is intensified by the speed and reach of digital media. Social media platforms disseminate information rapidly,

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often with graphic content, emotional narratives, and real-time updates that heighten public fear and anxiety. Research also documents a “contagion effect”, in which extensive media coverage of school shootings increases the likelihood of subsequent incidents. Towers et al. (2015) focused on data between 1998 and 2013, found that school shootings were significantly more likely to occur within 13 days of a widely publicized shooting, suggesting that media coverage can unintentionally contribute to imitation or copycat behavior. Although this study predates the 2015-2025 review period, more recent analyses confirm similar patterns. Meindl & Ivy (2017) emphasize that media coverage emphasizing the shooter's identity, motives, or personal history was associated with increased risk of subsequent attacks. These findings highlight the complex ways in which media ecosystems shape societal responses to school shootings and influence the broader landscape of violence.

School shootings influence public policy and legislative action at the national and state levels. Following a high-profile shooting such as Parkland (2018) and Uvalde (2022), states across the country enacted new laws related to school safety, firearm access, and mental-health services. For example, after Parkland, Florida passed the Marjory Stoneman Douglas High School Public Safety Act, which raised the minimum age for firearm purchases, implemented waiting periods, and expanded school-based mental-health services (*Florida Legislature*, 2018). Other states similarly enacted “red flag” laws, expanding background checks, or increasing funding for school security. However, research shows that policy responses to school shootings are highly polarized. Donohue et al. (2020) found that Democratic-controlled states were significantly more likely to pass firearm-restrictive legislation following a school shooting, while Republican-controlled states were more likely to expand firearm access or increase school security measures. This polarization reflects broader ideological divides in the United States and

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contributes to inconsistent policy responses across states. These findings demonstrate that school shootings shape national political discourse and legislative action, but in ways that reflect and reinforce existing political divisions.

School shootings impose substantial economic costs at the societal level. These costs include increased spending on school security, mental health services, law enforcement, and emergency responses. The White House Council of Economic Advisers (2025) estimated that school districts nationwide increased security spending by \$2.7 billion in the two years following the Parkland shooting. These expenditures often divert funds from academic programs, extracurricular activities, and student support services, reshaping the national educational priorities. The long-term economic consequences of school shootings extend beyond security spending. Rossin-Slater et al. (2022) found that individuals exposed to school shootings during childhood experienced lower lifetime earnings, higher rates of public assistance use, and increased healthcare costs. Demonstrating that the economic consequences of school shootings persist across the life course. These findings highlight the far-reaching economic consequences of school shootings and emphasize the need for comprehensive, evidence-based policy responses.

School shootings shape cultural narratives about youth and violence in the United States. Research shows that repeated exposure to school shootings contributes to a sense of fatalism and normalization, in which school shootings are increasingly viewed as inevitable or unavoidable (Muschert & Peguero, 2018). These narratives influence public attitudes toward safety, mental health, and firearm access, shaping how individuals interpret and respond to school-shooting events. Cultural narratives also influence social identity. Studies show that youth increasingly identify school shootings as a defining feature of their generation's experience. For example, a

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2021 national survey found that 68% of adolescents viewed school shootings as a “major defining issue” of their generation (American Psychological Association, 2021). These findings demonstrate that school shootings shape not only public and institutional practices but also the cultural and psychological landscape of American Society.

Mechanism Through Which Indirect Effects Occur

The indirect effects of shootings are not random; they emerge through identifiable psychological, social, institutional, and structural mechanisms that transform the impact of violence across individuals, families, schools, communities, and society. These mechanisms are well-documented in the empirical literature and help explain why school shootings, despite being geographically localized events, produce national consequences. Understanding these mechanisms is essential for interpreting this project's findings, as they highlight the pathways through which fear, trauma, and institutional responses travel across ecological levels.

One of the most powerful mechanisms driving indirect effects is media exposure and school's emotionally charged narratives. Research shows that repeated exposure to violent media content produces vicarious trauma, a psychological response in which individuals experience stress symptoms despite not being directly exposed to the event. Sampasa-Kanyinga et al. (2022) focused on analyzing data of 13,000 adolescents and found that exposure to school shooting coverage was associated with significantly higher odds of anxiety (OR=1.42) and depressive symptoms (OR=1.32). These effects were strongest among youth who consumed news through social media platforms, where content is less filtered and more sensationalized. Media exposure also nationalizes violence by creating a shared sense of vulnerability. Comstock et al. (2020) found that national media coverage of mass violence produced elevated levels of fear and perceived risk among individuals with no direct connection to the event. This mechanism helps

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support why school shootings in one state produce measurable psychological and behavioral effects in children across the country. The media ecosystem functions as a passage through which trauma is transmitted, transforming localized incidents into national stressors.

Another key stressor is anticipatory anxiety, the fear of a future threat that has not yet occurred. School shootings create a sense of unpredictability and uncontrollability, which are core drivers of anxiety. Research shows that when individuals perceive a threat as both severe and unpredictable, they experience heightened physiological arousal, hypervigilance, and avoidance behaviors (Rajan et al., n.d.). Following the Parkland shooting, for example, 57% of teens reported feeling unsafe in school (PEW Research Center, 2018). Despite having no direct exposure. This heightened perception of threat leads to behavioral changes such as scanning environments for danger, rehearsing escape routes, and avoiding crowded spaces. Anticipatory anxiety also influences institutional behavior. Schools respond to perceived threats by implementing security measures, conducting lockdown drills, and modifying routines. These institutional responses, in turn, reinforce students' and educators' perceptions of danger. It creates a feedback loop in which fear-driven policy amplifies fear. This cyclical mechanism helps explain why indirect effects persist long after the initial event.

Emotional contagion, the process through which emotions spread within social groups, is another mechanism through which school shootings exert indirect effects. Families play a central role in this process. Pfefferbaum et al. (2015) in a study of 426 child pairs, found that parental anxiety following a violent event predicted 2.5 times higher odds of child anxiety symptoms. Children interpret parental behaviors, such as keeping them home from school, restricting activities, or expressing fear, as indicators of danger. This transmission of fear amplifies children's emotional responses and contributes to long-term anxiety. Emotional contagion also

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occurs among peers. Nijs (2014) found that students who perceived their peers as fearful or anxious were significantly more likely to report feeling unsafe themselves. This interpersonal amplification helps explain why fear spreads rapidly through schools and why peer climates shift following widely publicized shootings. These mechanisms demonstrate that indirect effects are not solely individual experiences but are socially transmitted through relationships and interactions.

Institutional responses to school shootings, such as lockdown drills, surveillance systems, and target hardening measures, serve as powerful signals that shape perceptions of safety. NCES (2024) reports that 96% of schools now conduct lockdown drills, and over 90% use security cameras. These procedures communicate to students and staff that violence is a constant possibility, reinforcing perceptions of danger. Rajan et al. (n.d.) found that lockdown drills were associated with 39-42% increases in anxiety and depressive symptoms among students and educators, demonstrating that institutional practices can inadvertently produce psychological harm. Institutional signaling also influences community and societal responses. Increased security spending, policy changes, and public discourse reinforce the perception that schools are high-risk environments. These structural mechanisms demonstrate why school shootings produce widespread fear and why indirect effects persist across ecological levels.

Finally, school shootings exert indirect effects through which cultural narratives shape how individuals interpret violence. Research shows that repeated exposure to school-shooting events contributes to a sense of fatalism and normalization, in which violence is viewed as inevitable (Muschert & Peguero, 2018). These narratives influence public attitudes toward safety, mental health, and firearm access, shaping societal responses to school shootings. Cultural narratives also contribute to the “contagion effect”, in which extensive media coverage increases

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the likelihood of subsequent incidents. Towers et al. (2015) found that school shootings were significantly more likely to occur within 13 days of a widely publicized shooting, suggesting that cultural and media narratives can unintentionally contribute to imitation. These mechanisms demonstrate that school shootings shape not only individual behavior but also the broader cultural landscape.

Integrated Synthesis Across Ecological Levels

The findings of this project reveal that the indirect effects of school shootings are not isolated within any single ecological level. Instead, they accumulate, interact, and reinforce one another across individual, interpersonal, institutional, community, and societal systems. This cross-level integration demonstrates that school shootings function as multi-systemic traumatic events, producing ripple effects that extend far beyond the directly affected school. The ecological model highlights how these effects flow through interconnected pathways, shaping children's experiences in ways that reflect broader social, cultural, and structural conditions.

At the individual level, children experience heightened anxiety, fear, hypervigilance, sleep disturbances, and academic disengagement following exposure to school-shooting news coverage. These effects are well documented in large-scale studies. For example, Sampasa-Kanyinga et al. (2022) found that anxiety symptoms increased by 42%, while Rossin-Slater et al. (2022) documented significant declines in academic performance among students exposed to school-shooting news coverage. These individual-level effects do not occur in isolation. They are shaped by interpersonal relationships, institutional practices, and community contexts.

Interpersonal dynamics amplify these individual responses. Parents' fear and anxiety are transmitted to children through emotional contagion, as demonstrated by Pfefferbaum et al. (2015), who found that parental distress predicted 2.5 times higher odds of child anxiety. Peer

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relationships also shifted in response to perceived threat, with Njis (2014) showing that students who feel unsafe are 30% less likely to engage in collaborative learning. These interpersonal mechanisms intensify children's emotional and behavioral responses, creating feedback loops in which fear is reinforced through family routines, peer interactions, and social norms. Institutional practices further magnify these effects. Schools respond to perceived threats by implementing lockdown drills, surveillance systems, and target-hardening measures. NCES (2024) reports that 96% of schools now conduct lockdown drills, and Rajan et al. (n.d.) found that these drills increase anxiety and depressive symptoms by 39-42% among students and educators. These institutional responses signal to children that danger is imminent, reinforcing hypervigilance and fear. At the same time, increased security measures alter the school climate, reduce instructional time, and contribute to teacher burnout and turnover (Harding et al., 2022), further destabilizing the learning environment.

Community-level dynamics shape and reinforce these effects. School shootings produce widespread fear and perceived risk within communities, even when residents have no direct connection to the event. PEW Research Center (2018) found that 63% of parents feared a shooting at their child's school following Parkland, demonstrating the national reach of these events. Declines in community trust, reduced civic participation, and economic disruptions further contribute to a climate of instability and fear (Sampasa-Kanyinga et al., 2022). These community-level conditions influence how families and schools respond to perceived threats, creating a multi-layered environment in which fear is normalized and institutionalized. At the societal level, school shootings shape national discourse, policy responses, and cultural narratives. Media coverage amplifies fear and contributes to vicarious trauma, with repeated exposure to violent content increasing stress and perceived vulnerability (Sampasa-Kanyinga et

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al., 2022). Policy responses vary widely across states, reflecting political polarization rather than consistent evidence-based practice (Donohue et al., 2020). Cultural narratives about school shootings contribute to a sense of fatalism and normalization, with 68% of adolescents identifying school shootings as a defining issue of their generation (American Psychological Association, 2021). These societal-level dynamics filter down through communities, institutions, families, and individuals, shaping how school shootings are understood and experienced across the ecological system.

These findings demonstrate that the indirect effects of school shootings are cumulative, interconnected, and mutually reinforcing. Individual anxiety is amplified by family fear, institutional practices, community conditions, and societal narratives. Institutional responses shape interpersonal dynamics and individual perceptions of safety. Community fear influences school policy and family behavior. Societal narratives shape community discourse and institutional priorities. These cross-level interactions create a complex ecosystem in which school shootings exert widespread and enduring effects, even in the absence of direct exposure. This integrated synthesis underscores the importance of understanding school shootings not as isolated incidents but as multi-systemic events that reshape psychological, social, institutional, and cultural landscapes. It also highlights the need for trauma-informed, evidence-based interventions that address the interconnected nature of these effects across ecological levels.

Cross-Level Patterns and Emergent Themes

The findings across ecological levels reveal several cross-cutting patterns and emergent themes that highlight how school shootings exert widespread indirect effects throughout the United States. Institutions demonstrate that the impacts of school shootings are not confined to isolated domains but instead operate through interconnected psychological, social, institutional,

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and structural pathways. The literature consistently demonstrates that school shootings function as multi-systemic stressors, producing ripple effects that accumulate and reinforce one another across individuals, families, schools, communities, and society.

One of the most prominent cross-level patterns is the pervasive amplification of fear and perceived risk. At the individual level, children experience heightened anxiety, hypervigilance, and sleep disturbances following exposure to school-shooting news coverage (Sampasa-Kanyinga et al., 2022). These emotional responses are reinforced at the interpersonal level through parental anxiety and peer contagion, with Pfefferbaum et al. (2015) emphasizing that parental distress significantly predicts child anxiety. At the institutional level, lockdown drills, surveillance systems, and target-hardening measures signal that violence is a constant possibility, reinforcing perceptions of danger among students and staff (NCES, 2024; Rajan et al., n.d.). Community-level fear further amplifies these perceptions, with national surveys showing that 63% of parents fear a shooting at their child's school (PEW Research Center, 2018). At the societal level, media coverage and cultural narratives contribute to a sense of national vulnerability (Comstock et al., 2020). These findings show that fear is not merely an emotional response but a structurally reinforced condition that permeates multiple ecological levels.

Another emergent theme is the institutionalization of security and surveillance, which reshapes school environments and influences psychological and academic outcomes. Schools across the country have adopted increasingly restrictive security measures, with over 90% using security cameras and 96% conducting lockdown drills (NCES, 2024). These measures alter school climate, reduce instructional time, and contribute to teacher burnout and turnover (Harding et al., 2022). At the same time, they reinforce perceptions of danger at the individual and interpersonal levels, creating a feedback loop in which institutional practices amplify fear

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and drive further institutionalization of security. This pattern demonstrates how institutional responses to school shootings can inadvertently produce psychological harm and undermine educational goals.

A third cross-level pattern is the disproportionate impact of school shootings on marginalized communities. Research shows that students of color and students in under-resourced districts experience greater declines in trust, higher levels of fear, and more pronounced disruptions in school climate following school-shooting events (Fisher et al., 2022). These inequities are reinforced by community-level disparities in resources, institutional capacity, and social cohesion. At the societal level, policy responses to school shootings often reflect political polarization rather than evidence-based practice, resulting in inconsistent protections across states (Donohue et al., 2020). These findings demonstrate that school shootings exacerbate existing structural inequalities, producing uneven impacts across ecological levels.

In addition, an emergent theme is the cumulative burden of repeated exposure. School shootings have become increasingly frequent, and children, families, and communities are repeatedly exposed to violent events through media coverage, drills, and institutional practices. Rossin-Slater et al. (2022) found that repeated exposure to school-shooting news coverage produces cumulative academic and psychological effects, including lower test scores, higher absenteeism, and increased mental-health diagnoses. At the interpersonal level, repeated exposure intensifies parental anxiety and peer contagion. At the institutional level, repeated exposure drives the expansion of security measures and emergency-preparedness practices. At the societal level, repeated exposure contributes to cultural narratives of fatalism and normalization (Muschert & Peguero, 2018). These findings show that the indirect effects of

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school shootings are not isolated incidents but accumulated experiences that shape developmental trajectories and social environments over time.

A final cross-level pattern is the interdependence of psychological, social, and structural mechanisms. Individual anxiety is shaped by family routines, peer dynamics, institutional practices, community conditions, and societal narratives. Institutional responses are influenced by community fear, political pressures, and cultural expectations. Community functioning is shaped by institutional trust, media coverage, and national discourse. These interdependencies demonstrate that the indirect effects of school shootings cannot be understood in isolation; they must be examined within the broader ecological system in which individuals, families, schools, communities, and society interact. These cross-level patterns reveal that school shootings produce widespread and enduring indirect effects through interconnected pathways spanning the ecological system. These findings underscore the need for comprehensive, multi-level interventions that address the psychological, social, institutional, and structural mechanisms through which school shootings exert their influence.

CHAPTER FIVE: CONCLUSION AND DISCUSSION

Conclusion

This project examined the indirect effects of school shootings across ecological levels and identified the mechanisms through which these effects emerge and persist. The findings demonstrate that school shootings produce far-reaching consequences that extend well beyond the directly affected school, shaping the emotional, behavioral, academic, organizational, and cultural experiences of individuals and communities across the United States. Children who were not physically present at a school shooting nonetheless experienced heightened anxiety, sleep disturbances, academic disengagement, and behavioral changes. Families altered routines and communication patterns, peer dynamics shifted, and educators experienced secondary traumatic stress and burnout. Schools implemented intensified security measures and emergency drills, reshaping the learning environment in ways that often heightened rather than alleviated fear. Communities experienced declines in cohesion, economic disruptions, and shifts in public identity. At the societal level, media narratives and political debates contributed to a pervasive sense of vulnerability and normative instability.

These findings underscore the importance of trauma-informed, multilevel interventions that address both direct and indirect consequences of school-based gun violence.

Trauma-informed approaches must extend beyond individual counseling to include support for educators, families, schools, and communities. They must also address structural inequalities that influence access to mental-health services and community resources. The project highlights the need for policies that prioritize emotional safety, community resilience, and equitable access to support systems.

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Ultimately, this project contributes to a growing body of literature demonstrating that school shootings are not isolated events but national traumatic phenomena with widespread and enduring consequences. By understanding the indirect effects of school shootings and the mechanisms that drive them, policymakers, educators, and communities can develop more effective, compassionate, and equitable responses that support the well-being of children and the broader systems in which they live. The findings call for a national commitment to trauma-informed school safety, equitable access to mental-health care, and community-centered approaches that strengthen resilience and restore a sense of safety and belonging for all.

Discussion

The purpose of this discussion chapter is to interpret the findings presented in chapter four and situate them within the broader literature and the theoretical frameworks that guide this project. While the results chapter demonstrated that school shootings generate extensive indirect effects across ecological levels, this chapter examines why these patterns emerge. How they interact, and what they mean for children, educators, families, schools, communities, and society. This interpretation is anchored in the central research question guiding this project: In what ways do school shootings generate indirect consequences across social systems, including individuals, educational institutions, and communities, and through which mechanisms, such as media exposure, institutional responses, community disruptions, and heightened perceptions of fear, do these effects manifest and persist?

By returning to this research question, the discussion chapter clarifies how the findings contribute to existing knowledge and how they illuminate the complex, multilayered nature of indirect exposure to school shootings. The results reveal that school shootings function not as isolated incidents but as nationally distributed traumatic events that reverberate across social

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systems, shaping emotional, behavioral, academic, organizational, and cultural experience far beyond the directly affected school. These patterns are best understood through the integrated application of trauma theory, the social-ecological model, resilience theory, the life course perspective, the bioecological model, attachment theory, and anomie theory. These frameworks help explain why indirect effects are so pervasive, why they persist over time, and why they vary across contexts.

This chapter, therefore, goes beyond merely describing the indirect effects of school shootings to interpret their broader significance. It connects these effects to established theoretical constructs, offering a framework for understanding how traumatic events reverberate across social systems. Furthermore, the chapter identifies specific implications for the development of trauma-informed approaches to school safety, policy formation, and community resilience. By situating this study within the larger scholarly discourse on school violence, the chapter contributes to a deeper and more nuanced understanding of how school shootings fundamentally alter the social environments where children and communities live and grow.

Interpreting the Findings Through Theoretical Frameworks

Trauma theory provides a foundational lens for understanding why school shootings produce such pervasive indirect effects. Although trauma is often conceptualized as the result of direct exposure to violence, contemporary research recognizes that vicarious trauma experienced through hearing about, witnessing, or imagining violence can be equally impactful. The findings of this literature review align with this expanded understanding. Children who were not physically present at a shooting nonetheless exhibited typical symptoms such as hypervigilance. Sleep disturbances, intrusive thoughts, avoidance behaviors, and somatic complaints. These symptoms emerged even when the shooting occurred hundreds or thousands of miles away,

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demonstrating that school shootings operate as shared cultural traumas that disrupt children's sense of safety and predictability. Trauma theory also helps explain the emotional burden experienced by educators. Teachers absorbed the emotional weight of their own fears and the fears of their students, leading to secondary traumatic stress, burnout, and professional strain. The emotional labor required to manage students' anxiety, conduct drills, and maintain a source of normalcy placed educators in the role of secondary survivors, highlighting the need for trauma-informed supports that extend beyond students.

Social-Ecological Model

The social-ecological model helps highlight the multilayered nature of the indirect effects of school shootings identified in this project. The social-ecological model posits that individual well-being is shaped by interactions across multiple levels of influence, including individual, interpersonal, institutional, community, and societal levels. The findings demonstrate that school shootings disrupt each of these levels simultaneously, creating a cascade of effects that reinforce one another. At the individual level, children experienced anxiety, academic disengagement, and behavioral changes. At the interpersonal level, families altered routines, peer dynamics shifted, and educators experienced emotional strain. At the institutional level, schools implemented intensified security measures and drills, reshaping the learning environment. At the community level, residents reported declines in cohesion and economic activity. At the societal level, media narratives and political debates contributed to a pervasive sense of vulnerability.

The social-ecological model reveals that these effects are not isolated but interconnected. Institutional responses shape individual emotions, whereas community disruptions influence interpersonal relationships, and societal narratives inform institutional practices. The ecological

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perspective underscores the need for interventions that address not only individual symptoms but the broader systems that shape children's experiences.

Resilience Theory

Resilience theory emphasizes the capacity of individuals and communities to adapt to adversity. While the results chapter documented significant indirect effects, it also revealed opportunities for resilience. Some families strengthened communication and emotional support. Some educators developed new strategies for supporting students' emotional needs. Some schools adopted trauma-informed practices that fostered connection and stability. Communities organized vigils, advocacy efforts, and public forums that promoted collective healing.

However, resilience theory also highlights the unequal distribution of resources that support recovery. Communities with greater economic stability, stronger social networks, and more robust mental health services were better positioned to mitigate the indirect effects of school shootings. Communities with fewer resources experienced more pronounced disruptions. These disparities underscore the importance of equitable access to trauma-informed support and the need for policies that address structural inequalities.

Life Course Perspective

The life course perspective emphasizes how early experiences shape long-term developmental trajectories. The findings suggest that indirect exposure to school shootings may have enduring implications for children's psychological and academic well-being and social development. Heightened anxiety, sleep disturbances, and academic disengagement during childhood can contribute to long-term challenges, including reduced educational attainment, diminished economic opportunities, and ongoing mental health concerns. The life course

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perspective highlights the importance of early intervention and sustained support to prevent short-term disruptions from becoming long-term disadvantages.

Bioecological Model of Human Development

Bronfenbrenner's ecological model deepens the interpretation of the findings by emphasizing the dynamic interactions between individuals and their environments. School shootings disrupt multiple layers of children's ecological systems. The interrupt the microsystem (family, school), mesosystem (interactions between family and school), exosystem (community institutions), and macrosystem (cultural norms, media narratives). The bioecological model explains why indirect effects are so pervasive. Children's development is shaped not only by their immediate experiences but by the broader systems that influence their daily lives. When these systems are disrupted by school shootings, children's developmental contexts become less predictable, less supportive, and more stressful.

Attachment Theory

The attachment theory provides insight into the interpersonal dynamics that emerge following school shootings. Children look to caregivers and educators for cues about safety and threat. When parents become hypervigilant, restrict routines, or express fear, children internalize these signals, leading to heightened anxiety and insecurity. Similarly, when educators experience burnout or emotional exhaustion, their capacity to provide consistent emotional support may be compromised. Attachment theory underscores the importance of supporting caregivers and educators so they can maintain stable, responsive relationships that children need to navigate traumatic events.

Anomie Theory

Anomie theory, which emphasizes the breakdown of social norms and collective values, helps explain the fundamental assumptions about safety, community, and children. As these assumptions erode, individuals may experience feelings of disorientation, mistrust, and social fragmentation. The findings show that communities experienced declines in cohesion, increased suspicion, and reduced participation in public life, aligning with the concept of anomie. At the societal level, polarized policy debates and conflicting narratives about the causes of school shootings further contribute to a sense of normative instability. Anomie theory highlights the broader cultural implications of school shootings and the need for collective efforts to rebuild trust and shared values.

Connection to Existing Literature

The findings of this study align with and extend existing research on the indirect effects of school shootings. Prior studies have documented increases in anxiety, absenteeism, and academic disruptions following high-profile shootings, even among children in distant communities. This project expands on that literature by demonstrating the multilevel nature of these effects and by identifying the mechanisms that drive them. The findings also contribute to emerging research on the role of media exposure in shaping children's emotional and behavioral responses to violence. While previous studies have highlighted the impact of graphic or repetitive coverage, this study underscores the cumulative effects of media exposure, institutional responses, and community disruptions.

The project also contributes to the literature on school climate and safety. Intensified security measures may inadvertently contribute to a climate of fear and anxiety. This aligns with research indicating that punitive or surveillance-oriented approaches to school safety can

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undermine students' sense of belonging and trust. These findings support calls for trauma-informed, relationship-centered approaches that prioritize emotional safety alongside physical security.

The findings highlight the need for trauma-informed approaches to school safety that address both direct and indirect effects of school shootings. Trauma-informed practices emphasize safety, trust, collaboration, empowerment, and cultural responsiveness. In the context of school shootings, trauma-informed approaches may include providing mental health support for students and staff, implementing developmentally appropriate drills, fostering strong relationships between students and educators, and creating opportunities for community engagement and healing.

Trauma-informed school safety also requires attention to the broader systems that shape children's experiences. This includes addressing structural inequalities that influence access to mental health services, supporting educators' well-being, and promoting community resilience. Trauma-informed approaches recognize that safety is not solely a matter of physical security but is deeply connected to emotional, relational, and cultural factors. By adopting trauma-informed practices, schools and communities can create environments that support healing, resilience, and long-term well-being.

CHAPTER SIX: LIMITATIONS, RECOMMENDATIONS, AND SUGGESTIONS

Limitations

This chapter outlines the limitations of this project, offers evidence-based recommendations for policy and practice, and identifies areas for future research. The findings presented in chapter four demonstrated that school shootings generate extensive indirect effects across ecological levels, including heightened anxiety, sleep disturbances, academic disengagement, family stress, educator burnout, institutional climate shifts, community-level fear, and societal-level vulnerability. These conclusions were drawn from empirical studies analyzed in this project, which drew from diverse methodologies and data sources. It is essential to acknowledge the constraints of the existing literature and the boundaries of this project's design. These limitations inform the recommendations and future research directions that follow.

Although this project provides a comprehensive synthesis of the indirect effects of school shootings, several limitations must be acknowledged. These limitations relate to the breadth of the research aim, the nature of the data sources, the methodological diversity of the included studies, and the constraints inherent in secondary research. The research aim was intentionally broad to capture the multi-systemic nature of indirect effects. This breadth allowed the project to integrate findings across ecological levels, but it also limited the depth with which any single level could be examined. For example, while Rossin-Slater et al. (2022) provided detailed evidence of academic declines among students exposed to school-shooting news coverage, and Pfefferbaum et al. (2015) offered insight into parent–child emotional transmission, the project could not explore either domain with the depth that a narrower focus would allow. The wide scope, therefore, created tradeoffs between breadth and depth.

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This project relied exclusively on secondary data from peer-reviewed research published between 2015 and 2025. Although this timeframe captures contemporary scholarship, it excludes earlier foundational studies and may overlook relevant literature. For example, Towers et al. (2015) documented the contagion effect, predates the review period, but remains highly relevant. Additionally, because no primary data was collected, the project could not independently verify the methodological rigor of included studies, such as Rajan et al. (n.d.) or Harding et al. (2022), whose sample characteristics and analytic procedures vary widely.

The project included in this review differed substantially in sample size and methodology. Large-scale quantitative studies, such as Rossin-Slater et al. (2022), which analyzed data from more than 700,000 students, offers strong statistical power but limited insight into lived experience. In contrast, qualitative studies such as Pfefferbaum et al. (2015), which examined 426 parent–child dyads, provides rich contextual detail but lacks generalizability. These methodological differences complicate cross-study comparisons and limit the ability to draw uniform conclusions across ecological levels.

Although research on direct survivors of school shootings is extensive, far fewer studies examine the indirect effects on children who were not present during the school shooting. For example, only a small number of studies, such as Sampasa-Kanyinga et al. (2022) on media exposure and Silver & Silva (2020) on community-level fear, directly address indirect exposure mechanisms. Community and societal-level impacts remain particularly understudied, and many existing studies rely on cross-sectional designs that cannot establish causality. This gap reflects the relative novelty of research effects and underscores the need for further investigation.

Finally, the ecological framework highlights the dynamic and interconnected nature of indirect effects, but not all pathways can be fully explored. For example, while Rajan et al. (n.d.)

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documented the psychological effects of lockdown drills and Harding et al. (2022) examined teacher burnout, the interactions between these institutional practices and family-level responses remain underexplored. The complexity of these interactions limits the ability to fully map causal pathways across ecological levels.

Recommendations

The findings of this project support several evidence-based recommendations for policy, practice, and system-level change. These recommendations are grounded in the empirical literature synthesized in Chapter Four and emphasize trauma-informed, developmentally appropriate, and equity-centered approaches. The evidence demonstrates that children experience significant anxiety, hypervigilance, and sleep disturbances following exposure to school-shooting news coverage (Sampasa-Kanyinga et al., 2022). Educators also experience secondary traumatic stress and burnout (Harding et al., 2022). These findings support the need for trauma-informed practices that include professional development for educators, classroom strategies that promote emotional safety, and school-wide policies that recognize the psychological impact of indirect exposure.

Given that Rossin-Slater et al. (2022) found long-term academic and psychological consequences among students exposed to school-shooting media coverage, and Pfefferbaum et al. (2015) documented emotional transmission within families, schools must expand access to mental-health services. Increased staffing of counselors, psychologists, and social workers would enable early intervention, universal screening, and evidence-based therapeutic supports. Rajan et al. (n.d.) found that lockdown drills were associated with 39–42% increases in anxiety and depressive symptoms among students and educators. These findings indicate that drills must be redesigned to avoid realistic simulations, include advance notice, and incorporate post-drill

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debriefings. Trauma-informed drill protocols can reduce psychological harm while maintaining preparedness.

The evidence shows that intensified security measures can undermine school climate and increase fear. Harding et al. (2022) documented teacher burnout associated with high-stress safety environments, while Fisher et al. (2022) found that marginalized students experience disproportionate impacts from surveillance practices. These findings support a shift toward relational safety strategies, such as restorative practices and strong student–teacher relationships. Silver & Silva (2020) documented declines in community trust and cohesion following school-shooting events, while the PEW Research Center (2018) found widespread parental fear.

These findings highlight the need for coordinated crisis-response networks that include schools, families, mental-health providers, and community organizations. Community forums, family education programs, and collaborative crisis planning can promote resilience and restore trust. Sampasa-Kanyinga et al. (2022) demonstrated that repeated exposure to school-shooting media coverage increases anxiety and depressive symptoms. Towers et al. (2015) found that sensationalized coverage contributes to the contagion effect. These findings support the need for responsible media practices and public education campaigns that help families manage children’s exposure to violent content.

Suggestions for Future Research

The findings of this project highlight several areas where further research is needed to strengthen the evidence base and address gaps in the literature. Although Rossin-Slater et al. (2022) provided evidence of long-term academic and psychological impacts, few studies track indirect exposure over time. More longitudinal research is needed to understand how early anxiety, sleep disturbances, and academic disengagement shape developmental trajectories.

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There are a limited number of qualitative studies, such as Pfefferbaum et al. (2015) and Silver & Silva (2020) that examine interpersonal or community-level mechanisms. More qualitative research is needed to capture the lived experiences of children, families, and educators who are indirectly affected. In addition, Fisher et al. (2022) documented disproportionate impacts on marginalized students, but the mechanisms underlying these remain underexplored. Future research should examine how race, socioeconomic status, disability, and LGBTQ+ identity shape indirect exposure experiences.

Although trauma-informed practices are widely recommended, there are few studies that have assessed how effective they are in the context of school shootings. More research is needed to identify which interventions best support students, educators, and families. Sampasa-Kanyinga et al. (2022) and Towers et al. (2015) emphasize the influence of media exposure, yet little is known about how social media algorithms affect children's exposure to school-shooting content. Future studies should explore digital exposure pathways and their psychological impact.

This chapter has outlined the limitations of the current project, presented evidence-based recommendations for policy and practice, and identified directions for future research. The findings demonstrate that school shootings exert widespread indirect effects across ecological levels and highlight the need for comprehensive, multi-level interventions. Addressing these effects requires trauma-informed school safety, equitable access to mental-health care, and community-centered approaches that strengthen resilience and restore a sense of safety and belonging for all.

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