

Gunshot-related Fractures in Orthopedic Pediatric Patients with Evidence-Based Mental Health Recommendations: A Literature Review

Laura Palma MS¹, Janae Rasmussen DO^{2,*}, Anjali Malhotra MPH¹,
Carolina Benitez MS¹, Karen Gonzalez MS¹, Jesse Davis BS³, Elena Myalo BS⁴

¹State University of New York Upstate Medical University, Syracuse, NY

²Valley Consortium for Medical Education, Modesto, CA

³Rocky Vista University, College of Osteopathic Medicine, Parker, CO

⁴Lake Erie College of Osteopathic Medicine, Erie, PA

*Corresponding author: janaeleilani@gmail.com

Received December 01, 2024; Revised January 02, 2025; Accepted February 09, 2025

Abstract Gunshot-related injuries are increasingly prevalent and a leading cause of mortality in the pediatric population. The mental health considerations of gunshot-related fractures in pediatric patients are becoming increasingly recognized as the trauma extends beyond physical injuries. This literature review examines mental health considerations and interventions with both short-term and long-term implications of gunshot-related fractures in orthopedic pediatric patients. As gunshot-related injuries in pediatric patients continue to rise, it is important that orthopedic surgeons are informed of evidence-based management for both the physical and mental health-related sequelae. This review highlights the limitations in this field of research with the need for improved guidelines that orthopedic surgeons can implement regardless of their practice location. Evidence-based guidelines for the treatment of gunshot-related mental health sequelae in the pediatric population has limited research, but cognitive behavioral therapy and some pharmacotherapies can be helpful, especially with early initiation of treatment. Orthopedic surgeons are often one of the first treating physicians in these patients, so they can have a significant role in recognizing and referring these pediatric patients to resources for their mental health.

Keywords: gunshot violence, pediatric fractures, pediatric orthopedics, pediatric mental health, pediatric trauma

Cite This Article: Laura Palma MS, Janae Rasmussen DO, Anjali Malhotra MPH, Carolina Benitez MS, Karen Gonzalez MS, Jesse Davis BS, and Elena Myalo BS, "Gunshot-related Fractures in Orthopedic Pediatric Patients with Evidence-Based Mental Health Recommendations: A Literature Review." *American Journal of Clinical Medicine Research*, vol. 13, no. 1 (2025): 1-5. doi: 10.12691/ajcmr-13-1-1.

1. Introduction

Gunshot injuries in the United States (U.S.) are a growing public health crisis and is a leading cause of mortality in the pediatric and adolescent population. Between changes in gun regulation at the state and federal level and public opinion, the U.S. has more guns per capita compared to other high-income countries [1]. Children are almost 23 times more likely to be killed from gunshot-related injuries [1]. According to the Center for Disease Control (CDC), around 47,000 deaths were attributed to firearms in 2023 in the U.S. [2]. Although pediatric non-fatal injuries are not as reliably recorded, a cross-sectional study estimated that an average of around 3,700 to 5,200 children and adolescents are injured by firearms every year [1,3]. With an increase of firearm incidents and in the rate of gunshot injuries sustained by children and adolescents in the past twenty years, studies have focused on identifying socioeconomic risk factors, progression rates, and streamlining injury prevention methods [4]. By

highlighting the frequency and urgency of this public health issue, guidelines can be established to guide caring for pediatric patients in the aftermath of this physical and psychological trauma.

According to a propensity-matched study, children with non-fatal gunshot-related fractures had a greater risk of psychological disorders, such as anxiety, substance use, and mood disorders [5]. Therefore, implementing evidence-based screening and guidelines towards treating these pediatric patients would help in addressing these mental health-related outcomes that are essential for orthopedic surgeons to be informed of. The goal of this study is to describe the psychological effects both in the short-term and long-term of pediatric gunshot-related injuries and to review evidence-based recommendations that are relevant to orthopedic surgeons.

2. Methods

Six reviewers (LP, AM, CB, KG, JD, and EM)

independently assessed studies published between 2000 and 2024 using data sources from Google Scholar and PubMed. They were searched between November 15, 2024 and December 10, 2024 using keywords in combination “pediatric” and/or “child,” “firearms,” “gun violence,” “gunshot injury-ies,” “fracture(s),” “mental health,” “psychological intervention,” “guideline” and/or “management,” and “trauma.” For the purpose of this review, pediatric is defined as individuals up to the age of 20 years old for inclusion criteria. Studies were excluded if they were published before 2000, did not focus on pediatric patients, or were unrelated to the purpose of this review, which was to assess psychological effects of pediatric gunshot-related injuries, and evidence-based recommendations for mental health and orthopedic considerations.

1). Psychological and Physical Effects of Gunshot Injuries in Children

Gunshot-related injuries in pediatric patients carry profound physical and psychological consequences. Acutely, these injuries can trigger significant emotional responses, including distress, fear, helplessness, and heightened arousal. Such reactions often manifest as anxiety, depression, and sleep disturbances like nightmares. These symptoms typically emerge within the first month following the injury and can significantly disrupt daily functioning, potentially progressing to a condition known as acute stress disorder (ASD) [6]. Hamrin et al. found that 56% of pediatric gunshot victims exhibit symptoms of ASD, leaving them vulnerable to severe emotional trauma and adverse long-term health outcomes [6]. This demonstrates that the acute impacts of gunshot injuries in children can profoundly affect their psychological well-being, conveying the critical need for intervention to mitigate these effects.

The long-term consequences of youth exposure to gunshot-related injuries can also have enduring effects on a patient's health, often affecting them into their adult years. Chronic stress, defined as persisting beyond one month after the injury, is associated with numerous adverse outcomes, including increased prevalence of migraines and headaches [7]. Post-traumatic stress disorder (PTSD) is another significant long-term effect of gunshot-related fractures, with prevalence rates ranging from 11% to 62% depending on the assessment method [7]. This condition can result in debilitating symptoms that severely impact the quality of life of pediatric patients.

Along with potential psychological impacts, children who have gunshot-related fractures can endure a variety of physical complications in the short and long-term. Short-term complications include acute pain, swelling, potential vascular compromise, and the possibility of surgical intervention. Among fracture types, the tibia, femur and humerus are some of the most common fracture sites in gunshot-related injuries [8]. These bones often require more than 6 months of healing, which is typically longer in comparison to non-long bones [9]. In addition to managing the short-term effects of fractures and the healing process, gunshot-related injuries can lead to long-term complications, such as peripheral nerve damage, infections, symptomatic retained foreign bodies, amputations, and other systemic issues [9]. Physeal (growth plate) damage, reduced range of motion, and

chronic pain can persist for years, particularly for individuals who sustain gunshot-related fractures prior to skeletal maturity. These complications can significantly affect a child's quality of life and even their growth potential.

Comprehensive management, including physical therapy, as well as operative and non-operative care, is essential to minimize these long-term effects. However, disparities in access to care mean that not all children receive the necessary treatment, which highlights the importance of addressing both psychological and physical aspects to recovery.

2). Current Mental Health Recommendations

Incorporating evidence-based psychological interventions into orthopedic care fosters a patient-centered approach, which acknowledges the psychological challenges pediatric patients face after a gunshot-related fracture. Understanding the current health recommendations can facilitate the appropriate therapy recommendations. Hospital-based violence intervention programs (HBVIPs) are multidisciplinary initiatives that bridge medical professionals and trusted community partners to provide trauma-informed care to violently injured people [10]. HBVIPs identify patients upon hospital admission and provide psychological services focused on teaching adaptive coping skills, promoting emotional regulation, and building supportive social networks that extend beyond discharge [11]. Considering the high prevalence of psychological disorders in pediatric patients who experience gunshot-related injuries, HBVIPs have been recommended as a standard of care protocol for pediatric patients after a gunshot-related fracture.

Another approach is trauma-informed behavioral care, where mental health professionals and counselors implement trauma-informed practices to improve patient engagement and treatment adherence [12]. As trauma-informed practices expand, training physicians in these methods is essential to improve health outcomes for pediatric patients with gunshot-related fractures.

There is limited data on the long-term consequences of psychiatric drug therapy in pediatric brain development, so the decision to use pharmacotherapy should be made after extensive psychiatric evaluation. Gunshot-related fractures in the pediatric population have been associated with an increased prevalence among different psychiatric disorders, so differentiation is critical for treatment. Evidence-based guidelines recommend selective serotonin reuptake inhibitors (SSRIs) as the first-line pharmacological treatment for anxiety disorders in children and adolescents [13,14]. Antipsychotic medications are associated with increased adverse events in pediatric patients compared to SSRIs. Lithium and lurasidone are identified as possibly the safest options for treating mood disorders and psychotic disorders, respectively [15]. Clinical trials frequently exclude children, but recommendations for pediatric use are often based on these studies. Future research should further investigate the adverse effects of these medications in children, as this could enhance the development of effective care plans.

Cognitive behavioral therapy (CBT) is more commonly used among pediatric patients for both short and long-term treatment of anxiety and depression.

Nonfatal firearm violence contributes to a sense of destabilization in one's life, affecting the way one interacts with those around them. Exposure to this level of violence at a young age can lead to hopelessness, lack of self-regulation, decreased academic performance, and participation in high-risk practices [16]. CBT is focused on identifying and resolving harmful patterns of thinking and behavior to foster strategies for problem-solving and build confidence [17]. CBT is a tool that addresses medication limitations by targeting cognitive processing. Orthopedic surgeons who are familiar with these modalities can expedite referrals and resource utilization for their pediatric gunshot-related fracture patients.

Another tool that orthopedic surgeons can access is communication with schools, since they serve as a convenient location to implement mental health interventions for children. School-based mental health interventions have improved mental health literacy and reduced stigma [18]. This indicates that these interventions have enhanced children's understanding of mental health and have addressed common misconceptions that serve as barriers to seeking help. School-based programs can also improve children's access to mental health resources, especially for those who might not otherwise receive help. Additionally, Lai et al. demonstrated that symptoms of anxiety, and depression decreased in teacher-led school-based programs compared to professional-led programs, possibly suggesting the significance of close relationships in student health outcomes [19]. While this study demonstrates the potential of teacher-led interventions, larger studies are required to assess this association. Further, while schools may provide mental health resources, partnering with community-based organizations has proven effective in facilitating engagement with existing services [20].

Socioeconomic limitations and barriers to care have also been demonstrated. Pediatric gunshot-related injuries have disproportionately affected low-income minority students [21]. Although these recommended modalities could create a thorough support system for children who have experienced a gunshot-related fracture, barriers to care may prevent a cohesive management plan from being utilized.

3). Challenges and Barriers to Screening and Management

Federal and state regulations play a significant role in accessibility to mental health coverage. Medicaid is the largest payer for mental health services, subsidizing care for low-income individuals [22]. The federal government establishes baseline regulations for Medicaid, but states can choose to expand those minimum requirements and improve access to services [22]. This leads to varied coverage of mental health resources across states for pediatric patients. Local governments can also play a crucial role in accessing mental health services through public policy. New York City expanded mental health care to undocumented and uninsured individuals in 2019, which has pushed other local governments in the United States to start similar initiatives [23]. Beyond providing mental health resources to pediatric patients, systemic factors pose significant challenges.

The cultural stigma surrounding mental health can discourage individuals from seeking mental health resources. Nadeem et al. demonstrated that stigma

significantly impacts the willingness to seek mental health treatment among Black and Latina women, with a higher prevalence observed among immigrant women, which can impact their children [24]. Increasing mental health literacy reduces negative stereotypes about mental health [25]. Orthopedic surgeons can incorporate educational initiatives into daily practice to help reduce mental health-related stigma. However, traditional mental health treatments, particularly those involving physicians and mental health professionals, can carry stigma. Community-based mental health services have been demonstrated to impact this stigma and improve attitudes toward mental health professionals [26]. This implies that integrating mental services at a community level may improve treatment adherence. Incorporating community health workers could prove to be an effective strategy to mitigate mental health stigma at the community level.

Social determinants of health create barriers to accessing mental health services, disproportionately affecting marginalized groups. Children from low socioeconomic status (SES) backgrounds reported higher levels of mental health problems [27]. However, due to cost and insurance barriers, they are less likely to receive adequate care [28]. These limitations highlight the need to continue advocating for policies that improve insurance coverage and subsidize mental health services for pediatric populations. Black children are disproportionately exposed to firearm injuries when compared to white children, however psychiatric hospital admissions and suicide injuries are higher in the white population [29]. Additionally, racial minority groups below the poverty line and insured by Medicaid or Medicare had more incidences of firearm injuries [30]. This suggests that there should be cultural consideration for firearm-related injuries. Proposed solutions to the firearm issues in this country have been state-dependent and variable, placing the responsibility either on those more vulnerable or the ones carrying the firearms. Some solutions proposed include active-shooter lessons, gun access restrictions, and increased firearm storage regulations [21,31]. The path toward proactive management for nonfatal pediatric gunshot injuries lies in the collaboration between healthcare professionals and policymakers. Given that minority populations are more vulnerable to firearm assaults, medical professionals should address social determinants of health within the family unit, but also with community organizers, leaders, and politicians [32]. Research is still needed to demonstrate what the long-term adverse effects of these injuries are in to address how socioeconomic differences affect management of fractures in pediatric patients.

In addition to SES, geographic location can significantly impact access to psychiatric care. Around 65% of rural communities lack access to a psychiatrist compared to 27% of metropolitan counties, which can impose challenges for orthopedic surgeons with patient referrals [33]. This issue can be worsened by inadequate transportation and time availability of parents, which are often seen as barriers to accessing services [34]. Families with two working parents may face challenges in addressing the needs of their children who have recently undergone a gunshot-related fracture, limiting the progress in both long-term orthopedic and psychological care.

Possible modern solutions to these issues would be virtual health care, which allows parents and children to consult with healthcare professionals from the comfort of their home [35]. However, this approach would be constrained by factors, such as limited availability during work hours, insurance coverage, language barriers, and the requirement for a guardian to be present for pediatric care. Addressing these systemic barriers is critical in reducing disparities in mental health access and improving pediatric outcomes in gunshot-related fractures.

4). Gaps in Current Research

The long-term implications on the pediatric population regarding the emotional burden and mental health considerations with gunshot-related fractures remains understudied. A 2023 prospective cohort study on long-term physical and mental health outcomes of pediatric firearm injured victims had 24 patients with data collection with a mean of 29.4 months after injury [36]. The study was not conclusive for firearm specific injuries and mental health, which leaves room for larger and longitudinal studies to be performed [36]. On the contrary, there have been numerous studies on the psychological effect of firearms on adults older than 18. One study that highlights the importance of length of study is Vella et al., which had a median time from gunshot wounds of 5.9 years [37]. The outcome was concerning for a negative impact on emotional and psychological well-being, outside of mortality and economic hardship [37]. The adult cohort demonstrated a Global Mental Health score below population norms after injury [37]. This highlights the need for similar longitudinal research on the pediatric population.

The mental health of the pediatric population after a gunshot-related fracture is an ongoing concern for medical professionals. Implementing mental health interventions after these injuries is crucial for meeting the psychological needs of affected patients, so that the healthcare system knows where resources should be advocated for [38]. Ehrlich et al. compared new mental health diagnosis (NMHD) for those with firearm-related injuries against motor vehicle crash (MVC) injury subjects [39]. Firearm injury subjects had 1.5 times higher greater odds than the MVC subjects developing a NMHD [39]. A study on mental health care utilization for the pediatric population emphasizes that those with a firearm injury are 1.4 times more likely to utilize mental health resources within the 12 months after their injury than control groups [40]. This showcases the need for medical professionals, including orthopedic surgeons, to provide or refer to available resources.

5). Limitations

This study has found limitations in research on pediatric gunshot-related fractures with mental health recommendations. It is critical that more longitudinal studies that investigate the long-term outcomes and interventions for pediatric gunshot-related fracture patients are done. There are also limitations in assessing socioeconomic, racial, geographic, and other factors in their impact on pediatric gunshot-related fracture patients. The implication of this study is the need for a multidisciplinary approach when looking at gunshot-related injuries in the pediatric population and the importance of care beyond the fracture for an orthopedic physician.

3. Conclusion

Gunshot-related fractures in the pediatric population have an increasing prevalence. There are long-lasting mental health consequences that can have long-term sequelae, since pediatric patients who experience gunshot-related fractures are more likely to develop a diagnosis related to mental health. Early mental health screenings for children who are impacted by gunshot-related fractures are needed, so efforts can be made to mitigate potential long-term effects. Many victims may require orthopedic interventions, so orthopedic surgeons have a role in overseeing the care of this pediatric population. Compared to mental health professionals, it was found that teacher-led groups yielded better outcomes in depressive symptoms, potentially indicating that individuals who are more present in a child's life may have a greater impact on their mental health. Since orthopedic surgeons may be one of the first treating physicians in these patients, they have an important role in recognizing and referring these patients to resources for their mental health. Hospital-based violence intervention programs can be useful for standardizing these psychological interventions. Evidence-based guidelines for treatment of gunshot-related mental health sequelae in the pediatric population have limited research, but CBT and some pharmacotherapies can be helpful, especially with early initiation of treatment. There are gaps in this area of research, especially considering differences in the patient's age and developmental milestones, geographic location, community resources available, health literacy of the parents, and social support considerations like their school. Orthopedic surgeons that care for pediatric patients who experience gunshot-related fractures, can play a significant role in helping the affected child access community and hospital resources, to improve their recovery from the physical and mental health aspects of the injury.

References

- [1] Naik-Mathuria, B. J., Cain, C. M., Alore, E. A., Chen, L., & Pompeii, L. A. (2023). Defining the Full Spectrum of Pediatric Firearm Injury and Death in the United States: It is Even Worse Than We Think. *Annals of surgery*, 278(1), 10–16.
- [2] Johns Hopkins Bloomberg School of Public Health. (2024, September 12). *Continuing Trends: Five Key Takeaways from 2023 CDC Provisional Gun Violence Data* | Center for Gun Violence Solutions. Center for Gun Violence Solutions. <https://publichealth.jhu.edu/center-for-gun-violence-solutions/2024/continuing-trends-five-key-takeaways-from-2023-cdc-provisional-gun-violence-data>.
- [3] Grinshteyn, E., & Hemenway, D. (2019). Violent death rates in the US compared to those of the other high-income countries, 2015. *Preventive medicine*, 123, 20–26.
- [4] Welbeck, A., Torres-Izquierdo, B., Mittal, M. M., Momtaz, D., Gonuguntla, R., Guisse, N., Hu, J., Pereira, D. E., & Hosseinzadeh, P. (2024). Epidemiology of Pediatric Firearm Injuries in the United States: The Progression of Gunshot Injury Rates Through the Coronavirus Disease 2019 Pandemic. *Journal of pediatric orthopedics*, 44(9), 545–554.
- [5] Mittal, M. M., Singh, A., Gonuguntla, R., Momtaz, D., & Hosseinzadeh, P. (2024). Do Children With Accidental Gunshot-related Fractures Experience Greater Risk of Mental Illness and Psychiatric Disorders? A Propensity-matched Study. *Clinical orthopaedics and related research*, 10.1097/CORR.0000000000003296. Advance online publication.
- [6] Hamrin, V., Jonker, B., & Scahill, L. (2004). Acute stress disorder symptoms in gunshot-injured youth. *Journal of child and adolescent*

- psychiatric nursing: official publication of the Association of Child and Adolescent Psychiatric Nurses, Inc, 17(4), 161–172.
- [7] Ranney, M., Karb, R., Ehrlich, P., Bromwich, K., Cunningham, R., Beidas, R. S., & FACTS Consortium (2019). What are the long-term consequences of youth exposure to firearm injury, and how do we prevent them? A scoping review. *Journal of behavioral medicine*, 42(4), 724–740.
 - [8] Maez, D. A., Flesner, S. L., Martz, A. M., Bosch, P. P., & Miskimins, R. J. (2024). The orthopaedic burden of gun-shot injury in children: A single-institution analysis. *Journal of the Pediatric Orthopaedic Society of North America*, 9, 100117.
 - [9] Kostenuik, P., & Mirza, F. M. (2017). Fracture healing physiology and the quest for therapies for delayed healing and nonunion. *Journal of orthopaedic research: official publication of the Orthopaedic Research Society*, 35(2), 213–223.
 - [10] Hale, M. E., Pinkman, K., Quinoy, A. M., & Schoffner, K. R. (2024). Identifying mental health outcomes and evidence-based psychological interventions for supporting pediatric gunshot wound patients: A systematic review and proposed conceptual model. *BMC Pediatrics*, 24(1), 397.
 - [11] Mueller, K. L., Moran, V., Anwuri, V., Foraker, R. E., & Mancini, M. A. (2022). An exploration of factors impacting implementation of a multisystem hospital - based violence intervention program. *Health & Social Care in the Community*, 30(6).
 - [12] Clarke, A. T., Grasseti, S. N., Brumley, L., Ross, K. Y., Erdly, C., Richter, S., Brown, E. R., & Pole, M. (2023). Integrating trauma-informed services in out-of-school time programs to mitigate the impact of community gun violence on youth mental health. *Journal of Prevention & Intervention in the Community*, 51(4), 332–351.
 - [13] Bobbitt, S., Kawamura, A., Saunders, N., Monga, S., Penner, M., & Andrews, D. (2023). Anxiety in children and youth: Part 2—The management of anxiety disorders. *Paediatrics & Child Health*, 28(1), 60–66.
 - [14] Walter, H. J., Bukstein, O. G., Abright, A. R., Keable, H., Ramtekkar, U., Ripperger-Suhler, J., & Rockhill, C. (2020). Clinical Practice Guideline for the Assessment and Treatment of Children and Adolescents With Anxiety Disorders. *Journal of the American Academy of Child & Adolescent Psychiatry*, 59(10), 1107–1124.
 - [15] Solmi, M., Fornaro, M., Ostinelli, E. G., Zangani, C., Croatto, G., Monaco, F., Krinitski, D., Fusar-Poli, P., & Correll, C. U. (2020). Safety of 80 antidepressants, antipsychotics, anti-attention-deficit/hyperactivity medications and mood stabilizers in children and adolescents with psychiatric disorders: A large scale systematic meta-review of 78 adverse effects. *World Psychiatry*, 19(2), 214–232.
 - [16] Tatebe, L. C., Thomas, A., Regan, S., Stone, L., Sr, & Dicker, R. (2022). Language of violence: Do words matter more than we think?. *Trauma surgery & acute care open*, 7(1), e000973.
 - [17] American Psychological Association. (2017). *What is cognitive behavioral therapy?*. American Psychological Association. <https://www.apa.org/ptsd-guideline/patients-and-families/cognitive-behavioral>.
 - [18] Ma, K. K. Y., Anderson, J. K., & Burn, A. (2023). Review: School - based interventions to improve mental health literacy and reduce mental health stigma – a systematic review. *Child and Adolescent Mental Health*, 28(2), 230–240.
 - [19] Lai, E. S. Y., Kwok, C.-L., Wong, P. W. C., Fu, K.-W., Law, Y.-W., & Yip, P. S. F. (2016). The Effectiveness and Sustainability of a Universal School-Based Programme for Preventing Depression in Chinese Adolescents: A Follow-Up Study Using Quasi-Experimental Design. *PLOS ONE*, 11(2), e0149854.
 - [20] Richardson, B. T., Jackson, J., Marable, G., Barker, J., Gardiner, H., Igarabuzza, L., Leasy, M., Matthews, E., & Zisman-Ilani, Y. (2024). The Role of Black Churches in Promoting Mental Health for Communities of Socioeconomically Disadvantaged Black Americans. *Psychiatric Services*, 75(8), 740–747.
 - [21] Fleegler, E. W., Lee, L. K., Monuteaux, M. C., Hemenway, D., & Mannix, R. (2013). Firearm legislation and firearm-related fatalities in the United States. *JAMA internal medicine*, 173(9), 732–740.
 - [22] Halmer, T. C., Beall, R. C., Shah, A. A., & Dark, C. (2015). Health Policy Considerations in Treating Mental and Behavioral Health Emergencies in the United States. *Emergency Medicine Clinics of North America*, 33(4), 875–891.
 - [23] McCray, C. I., & Rosenberg, L. (2021). A Path Forward: Mental Health and the U.S. Pandemic Response. *The Journal of Behavioral Health Services & Research*, 48(2), 161–170.
 - [24] Nadeem, E., Lange, J. M., Edge, D., Fongwa, M., Belin, T., & Miranda, J. (2007). Does Stigma Keep Poor Young Immigrant and U.S.-Born Black and Latina Women From Seeking Mental Health Care? *Psychiatric Services*, 58(12), 1547–1554.
 - [25] DeLuca, J. S., Tang, J., Zoubaa, S., Dial, B., & Yanos, P. T. (2021). Reducing stigma in high school students: A cluster randomized controlled trial of the National Alliance on Mental Illness' Ending the Silence intervention. *Stigma and Health*, 6(2), 228–242.
 - [26] Keams, M., Muldoon, O. T., Msetfi, R. M., & Surgenor, P. W. G. (2019). The impact of community-based mental health service provision on stigma and attitudes towards professional help-seeking. *Journal of Mental Health*, 28(3), 289–295.
 - [27] Hodgkinson, S., Godoy, L., Beers, L. S., & Lewin, A. (2017). Improving Mental Health Access for Low-Income Children and Families in the Primary Care Setting. *Pediatrics*, 139(1), e20151175.
 - [28] Salloum, A., Johnco, C., Lewin, A. B., McBride, N. M., & Storch, E. A. (2016). Barriers to access and participation in community mental health treatment for anxious children. *Journal of Affective Disorders*, 196, 54–61.
 - [29] Sakran, J. V., Nance, M., Riall, T., Asmar, S., Chehab, M., & Joseph, B. (2020). Pediatric Firearm Injuries and Fatalities: Do Racial Disparities Exist?. *Annals of surgery*, 272(4), 556–561.
 - [30] Hughes, B. D., Cummins, C. B., Shan, Y., Mehta, H. B., Radhakrishnan, R. S., & Bowen-Jallow, K. A. (2020). Pediatric firearm injuries: Racial disparities and predictors of healthcare outcomes. *Journal of pediatric surgery*, 55(8), 1596–1603.
 - [31] Smart, R., Morral, A. R., Murphy, J. P., Jose, R., Charbonneau, A., & Smucker, S. (2024). The Science of Gun Policy: A Critical Synthesis of Research Evidence on the Effects of Gun Policies in the United States, Fourth Edition. *Rand health quarterly*, 12(1), 3.
 - [32] Gaylord-Harden, N. K., Alli, J., Davis-Stober, C. P., & Henderson, H. (2022). A trauma-informed approach to understanding firearm decision-making among Black adolescents: Implications for prevention. *Preventive medicine*, 165(Pt A), 107305.
 - [33] Andrilla, C. H. A., Patterson, D. G., Garbers, L. A., Coulthard, C., & Larson, E. H. (2018). Geographic Variation in the Supply of Selected Behavioral Health Providers. *American Journal of Preventive Medicine*, 54(6), S199–S207.
 - [34] Davis, R. G., Ressler, K. J., Schwartz, A. C., Stephens, K. J., & Bradley, R. G. (2008). Treatment barriers for low - income, urban African Americans with undiagnosed posttraumatic stress disorder. *Journal of Traumatic Stress*, 21(2), 218–222.
 - [35] Umoren, R. A., & Birnie, K. (2025). Pediatric Telemedicine Consults to Improve Access to Intensive Care in Rural Environments. *Pediatric clinics of North America*, 72(1), 123–132.
 - [36] Haasz, M., Dulchavsky, A., Stevens, J., Nolan, M., Leonard, J., Phillips, R., Knoepke, C., Schroepfel, T., Zuk, J., Abbey, W., & Ambroggio, L. (2023). Long-term physical and mental health outcomes of pediatric firearm-injured victims: A prospective cohort study. *The Journal of Trauma and Acute Care Surgery*, 95(4), e31–e35.
 - [37] Vella, M. A., Warshaw, A., Tortorello, G., Fernandez-Moure, J., Giacalone, J., Chen, B., Cabulong, A., Chreiman, K., Sims, C., Schwab, C. W., Reilly, P. M., Lane-Fall, M., & Seamon, M. J. (2020). Long-term Functional, Psychological, Emotional, and Social Outcomes in Survivors of Firearm Injuries. *JAMA surgery*, 155(1), 51–59.
 - [38] Wolf, A. E., Garrison, M. M., Mills, B., Chan, T., & Rowhani-Rahbar, A. (2019). Evaluation of Injury Severity and Resource Utilization in Pediatric Firearm and Sharp Force Injuries. *JAMA network open*, 2(10), e1912850.
 - [39] Ehrlich, P. F., Pulcini, C. D., De Souza, H. G., Hall, M., Andrews, A., Zima, B. T., Fein, J. A., Chaudhary, S., Hoffmann, J. A., Fleegler, E. W., Jeffries, K. N., Goyal, M. K., Hargarten, S. W., & Alpern, E. R. (2022). Mental Health Care Following Firearm and Motor Vehicle-related Injuries: Differences Impacting Our Treatment Strategies. *Annals of surgery*, 276(3), 463–471.
 - [40] Oddo, E. R., Simpson, A. N., Maldonado, L., Hink, A. B., & Andrews, A. L. (2023). Mental Health Care Utilization Among Children and Adolescents with a Firearm Injury. *JAMA surgery*, 158(1), 29–34.

