


## SUICIDE ATTEMPTS AFTER ACUTE TRAUMATIC EPISODES

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### ABSTRACT

The study investigates the relationship between acute traumatic events and suicide attempts, analyzing the factors that mediate this association. The research uses a narrative literature review based on scientific articles indexed in the PubMed, LILACS and SciELO databases. The results indicate that acute traumatic experiences, such as traumatic brain injuries, natural disasters, and bereavement, are associated with an increased risk of suicidal ideation and behavior. Psychological factors, such as impulsivity, post-traumatic stress disorder, and depression, play a crucial role in this relationship, as do genetic and environmental aspects. Social support proves to be a protective factor, while isolation and environmental stress can amplify vulnerability to suicide. Evidence suggests that suicidality does not always increase immediately after trauma, highlighting the need for longitudinal studies to understand the evolution of this risk over time. The research points to important gaps, including the need for broader and more diverse investigations that consider the interaction between biological, psychological, and social factors. It is concluded that an in-depth understanding of the relationship between trauma and suicide is essential for the development of effective prevention strategies, emphasizing the importance of personalized and culturally sensitive interventions for vulnerable populations.

**Keywords:** Acute Traumatic Episode. Trauma. Suicide. Suicidality. Mental health.

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## INTRODUCTION

Suicide represents a serious public health problem and is one of the main causes of mortality in the world. Understanding the risk factors associated with suicidal behaviors is essential for developing effective prevention strategies. Among these factors, the experience of acute traumatic events has been widely investigated due to its significant impact on mental health and increased risk of suicide attempt. The relationship between acute traumatic episodes and subsequent suicide attempts is a complex and multifaceted area of research.

Studies show that individuals exposed to acute trauma, such as traumatic brain injuries (TBI), natural disasters, interpersonal conflicts, and grief experiences, are more likely to develop suicidal ideation and behaviors (Benatov et al., 2024).

The relationship between trauma and suicide is complex and mediated by several psychological, biological and social factors. Impulsivity, for example, is an element often identified as an underlying mechanism for increased suicidal risk among survivors of acute trauma (Logroño et al., 2024 (Santo et al., 2021). In addition, psychiatric conditions such as post-traumatic stress disorder (PTSD) and major depressive disorders play a crucial role in intensifying vulnerability to suicide (Carmassi et al., 2021; Celik et al., 2022). Recent studies also suggest the existence of interactions between genetic predisposition and exposure to trauma, influencing the emotional and behavioral response of traumatized individuals (Kulehmarzi et al., 2023; Sanabrajs-Jiménez et al., 2023).

The social and environmental context also has a significant impact on the relationship between trauma and suicidal behavior. The presence of social support has been associated with reduced suicidal ideation and attempts in individuals exposed to trauma, while social isolation and environmental stress may potentiate the risk (Firoozabadi et al., 2018; Restrepo and Spokas, 2021). Collective traumatic events, such as the COVID-19 pandemic, have also highlighted the influence of environmental factors on mental health, highlighting the need for interventions adapted to different contexts and vulnerable populations (Mucci et al., 2022).

In view of this scenario, the present study aims to explore the connections between acute traumatic events and suicide attempts, analyzing both the direct relationships and the mediating factors that modulate this association, considering the limitations of current research.

## METHODOLOGY

The methodology used was the narrative literature review, characterized by evaluating and synthesizing the most relevant and specific information and updates on the subject in question. To identify relevant studies, searches were performed in the PubMed, LILACS and Scielo databases, using the search terms "suicide attempt", "stress", "trauma" and "acute traumatic episode". After the initial search, the titles and abstracts of the articles were screened by the authors and the selected articles were then read in full to determine their relevance to the review.

## DIRECT LINKS BETWEEN TRAUMA AND SUICIDE ATTEMPTS

Many studies directly demonstrate the relationship between acute traumatic experiences and subsequent suicide attempts. Ladner et al. identified impulsivity – a factor often exacerbated by trauma – as a significant predictor of suicidality following a traumatic brain injury (TBI). Their study revealed a significant increase in self-harm, suicidal ideation, and suicide attempts among TBI patients who already had a previous history of impulsivity (Ladner et al., 2024). This suggests that preexisting vulnerabilities, combined with acute trauma, can significantly elevate the risk of suicide. The case study presented by Fernández Logroño et al. illustrates a patient who developed frequent suicidal impulsivity after a TBI, emphasizing the potential for delayed psychological effects and the need to consider the diverse etiologies of suicidal behavior (Logroño et al., 2024).

The impact of natural disasters is also explored in several studies. The L'Aquila earthquake study conducted by Carmassi et al. corroborates this relationship by demonstrating a significant association between PTSD (both in full and partial form) and suicidal behaviors among young survivors (Carmassi et al., 2021). Specific symptoms of PTSD, such as grief reactions and maladaptive coping mechanisms, have been shown to be particularly associated with an increased risk of suicide (Carmassi et al., 2021). The evaluation of the Text4Hope program, conducted by Obuobi-Donkor et al. (Obuobi-Donkor et al., 2024), demonstrated a significant reduction in suicidal ideation among participants affected by the 2023 wildfires in Alberta and Nova Scotia, indicating the potential for effective mental health interventions to mitigate psychological distress after acute trauma (Obuobi-Donkor et al., 2024). Benatov et al. investigated suicide-related calls on a national hotline following a terrorist attack in Israel. Interestingly, the researchers identified an immediate reduction in suicide-related calls shortly after the attack, followed by a gradual increase over time, challenging the assumption that suicidality increases immediately after

acute trauma (Benatov et al., 2024). This highlights the complexity of the relationship between trauma and suicide, underscoring the need for longitudinal studies to capture a more complete picture.

Mucci et al. examined the impact of phases of the COVID-19 pandemic on psychiatric risk among adolescents. The researchers found that the second phase of the pandemic was associated with higher rates of non-suicidal self-harm and suicidal ideation compared to the first lockdown period, suggesting that the prolonged and dynamic nature of the pandemic acted as a significant stressor (Mucci et al., 2022). This study reinforces the need to address acute collective trauma and its potential impacts on suicidal behaviors.

## **MEDIATING FACTORS**

Although direct links are evident, several psychological factors mediate the relationship between acute trauma and suicide attempts. Asarnow et al. emphasize the importance of a trauma-informed approach in assessing and managing suicide risk, especially in the post-trauma period (Asarnow et al., 2020). The authors present the SAFETY-Acute (A) approach, an evidence-based method for assessment and intervention after suicidal episodes, focusing on safety planning and continuity of care (Asarnow et al., 2020). This highlights the crucial role of appropriate interventions in mitigating the risk of subsequent attempts.

Sanabrais-Jiménez et al. investigated interactions between genes and environment, identifying that specific genetic variants (NR3C1 and NR3C2) interacted with childhood trauma to predict an increased risk of suicide attempts (Sanabrais-Jiménez et al., 2023). This suggests that genetic predisposition may modulate the impact of trauma on suicidal behavior.

Helvacı-Elk and Hocaolu found a significant correlation between childhood trauma, suicidal behavior, and deliberate self-harm (DSH) in patients with major depressive disorder (Celik et al., 2022). This highlights the long-term impact of trauma and the importance of considering childhood experiences when assessing suicide risk.

Bagian Kulehmarzi et al. also identified a relationship between suicidal tendencies and childhood trauma, highlighting psychological pain as a significant factor in suicide attempts. The authors identified four predictor variables related to early life experiences that explain a significant percentage of the variance in suicide attempts (Kulehmarzi et al., 2023).

The role of impulsivity is consistently highlighted as a significant mediating factor. Santo et al. pointed out that impulsivity mediates the relationship between early traumatic experiences and suicidal behavior in depressed individuals (Santo et al., 2021). This suggests that targeting impulsivity may be an essential aspect of suicide prevention interventions. Schönfelder et al. also found that non-suicidal self-harm (NMW) mediated the relationship between child abuse and suicide attempts (Schönfelder et al., 2021). AMNS can be considered as a significant predictor of suicide attempts (Schönfelder et al., 2021). Still on the topic, Richmond-Rakerd and colleagues demonstrated shared hereditary contributions between AMNS, suicidal ideation, and suicide attempts, in addition to the implication of exposure to trauma as a risk factor (Richmond-Rakerd et al., 2019). This indicates the existence of common genetic and environmental factors that influence self-injurious behaviors and suicide risk.

## **THE ROLE OF SOCIAL AND ENVIRONMENTAL FACTORS**

Social and environmental factors also play a significant role in the relationship between trauma and suicide attempts. Restrepo and Spokas identified that social support moderates the relationship between interpersonal trauma and suicidal behaviors among college students. Higher perceived social support was associated with lower occurrences of suicidal behavior, even after experiencing interpersonal trauma (Restrepo and Spokas, 2021), indicating the protective role of social support in mitigating the impact of trauma.

Firoozabadi et al. pointed out that family conflict is a significant psychological stressor that contributes to impulsive suicide attempts, corroborating the importance of considering environmental factors when assessing suicide risk (Firoozabadi et al., 2018).

Back et al. identified that the organizational climate at work moderated the relationship between exposure to trauma and suicidal ideation among Korean male firefighters, suggesting that work environments can constitute an important support network, which can therefore reduce the risk of suicide (Back et al., 2023).

The study by Blosnich et al. revealed that adverse childhood experiences (ACEs) were associated with higher rates of suicidal ideation and attempts, particularly among military veterans, highlighting the long-term impact of early trauma on suicide risk (Blosnich et al., 2021). Loi et al. found a higher frequency of suicide attempts among migrant adolescents compared to Italian adolescents, suggesting that the acute trauma of migration may be a significant risk factor (Loi et al., 2022).

Tadesse et al. identified that factors such as female gender, depression, family history of mental illness, and inadequate social support were significantly associated with suicidal ideation and attempts among internally displaced people affected by war (Tadesse et al., 2024). Jacoby et al. pointed out that lifetime suicide attempts were more frequent among service members who experienced complicated grief, further illustrating the link between trauma, grief, and suicide risk, and highlighting the complex interaction between individual, social, and environmental factors in influencing suicide risk (Jacoby et al., 2024).

Daskalakis et al. identified a relationship between environmental stress, genetic susceptibility to PTSD, and increased suicidality in preadolescents, highlighting the important interaction between genetic and environmental factors in determining suicide risk (Daskalakis et al., 2021).

Fralick et al. demonstrated that concussions are associated with a two-fold increase in suicide risk (Fralick et al., 2019), and Chrisman et al. pointed out in their work that 40% of youth with persistent post-concussive symptoms reported clinically significant depressive symptoms and that a history of depression was a significant risk factor for suicidal ideation (Chrisman et al., 2021). This hypothesizes that there is a strong relationship between traumatic brain injury and suicide risk.

## **GAPS IN RESEARCH AND FUTURE DIRECTIONS**

Despite the extensive body of existing research, several gaps remain. Many studies focus on specific populations (e.g., veterans, adolescents) or on particular types of trauma (such as child abuse or combat exposure), which limits the generalizability of findings. Additional research is needed to explore the complex interplay between genetic, psychological, social, and environmental factors in different populations and types of trauma. Longitudinal studies are key to understanding the temporal dynamics of the relationship between trauma and suicidal behavior, since some research indicates that the period immediately following a traumatic event does not always show an increase in suicide attempts (Benatov et al., 2024). Further investigations are needed to identify modifiable risk factors that may be targets of prevention and intervention programs. The mechanisms that link specific types of trauma to specific psychological mediators and, consequently, to suicidal behavior, still require further study. The development and evaluation of culturally sensitive interventions, tailored to specific populations, are also essential. Finally, research needs to address the ethical considerations involved in studying vulnerable populations at high risk of suicide.

## CONCLUSION

Evidence strongly indicates a significant relationship between acute traumatic episodes and subsequent suicide attempts. However, this relationship is not simple; several psychological factors (impulsivity, PTSD symptoms, depression, dissociation, psychological pain, hopelessness), social support, and environmental factors mediate this connection. While some studies point to a direct correlation between acute trauma and increased suicide risk, others underscore the importance of considering preexisting vulnerabilities, the evolving nature of the impact of trauma, and the possible protective role of social support and effective interventions. Future research should focus on longitudinal studies, diverse populations, and the identification of modifiable risk factors to improve suicide prevention strategies. A comprehensive understanding of this relationship requires consideration of the complex interplay between individual, psychological, social, and environmental factors that shape an individual's response to trauma and their subsequent risk of suicide attempt.



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