



Research Article

Risk Factors for Self-mutilation Behaviors in Adolescents: An Integrative Review

Rommel Candeia de Albuquerque¹, Geyslane Pereira Melo de Albuquerque², Carla Novaes de Carvalho³, Zahra Asgari^{4*}

Abstract

Adolescence is characterized by physical, cognitive, emotional, social, and behavioral changes capable of resulting in the development of a healthy and autonomous individual, as well as contributing to self-injurious behavior. This review aimed to analyze the 11 available papers on risk factors for self-mutilation in adolescents. Integrative review performed in MEDLINE and LILACS databases using primary studies published between 2018 and 2023, in Portuguese, English, and Spanish with the descriptors "Self-destructive Behavior"; "Adolescent"; and "Risk Factors" combined with the Boolean operator AND. After analyzing the data, two main themes emerged. The first theme, referred to as "intrapersonal risk factors," encompassed a range of categories including depression, anxiety, post-traumatic stress disorder, attention deficit hyperactivity disorder, substance/alcohol abuse, disruptive, impulse and conduct control disorders, cyclothymic-hypersensitive temperament, impulsivity, avoidance/coping-focused on affect, and emotional dysregulation. The second theme, labeled as "interpersonal risk factors," consisted of categories such as bullying, parental neglect, parental psychopathology, social exclusion, peers with people with self-destructive behavior, hetero-aggressiveness, and sexual and gender minority populations. The findings of this review highlight the importance of increased awareness, early detection, and targeted interventions for self-mutilation. This study lays the ground for future research and interventions in mental health. Future studies could further explore psychological factors, societal influences, effective treatments, and prevention methods for self-mutilation. By expanding upon current knowledge, clinicians and researchers can better support individuals struggling with self-harm, leading to improved outcomes and reduced harm.

Keywords: Self-mutilation behavior, Adolescent, Risk factors, Integrative review

¹. Resident in Psychiatry. Psychiatrist department. University of Pernambuco. Brazil.
Email: rommel_albuquerque@outlook.com

². PhD in Nursing, Adjunct Professor at Faculty of Nursing Nossa Senhora of Graças the University of Pernambuco (FENSG/UPE), Recife, Pernambuco, Brazil.
Email: geyslane.pmalbuquerque@upe.br

³. Master in Neurology. Psychiatrist department. Recife Hall. Brazil.
Email: novaes.carla2018@gmail.com

⁴. Ph.D in Counseling, Department of Counseling, Faculty of Education and Psychology, University of Isfahan, Isfahan, Iran.

* Corresponding Author: Zahra Asgari.
Email: za.asgari@edu.ui.ac.ir



Introduction

World Health Organization ([World Health Organization, 2014](#)) defines adolescence as the period between 10 and 19 years of age. However, adolescence exceeds age limitations, since it is defined as a period marked by physical, cognitive, behavioral, and subjective transformations. Such changes may influence, positively or not, how adolescents will face the existing conflicts, favoring the emergence of maladaptive behaviors ([de Sene Moreira et al., 2020](#)).

One of the challenges encountered in the approach to self-mutilation begins with the diversity in classifications and terminologies for the act, making it difficult to reach a consensus in the literature, such as self-mutilation, self-injury, self-harm, self-injurious behavior without suicidal intent, suicidal behavior, parasuicide, and others ([Ferreira et al., 2023](#); [Santo & Dell'Aglio, 2022](#); [Santos et al., 2007](#)). These behaviors are defined as any intentional behavior involving direct aggression to the body without the conscious intention of suicide, not the result of substance use, and not accepted in the culture itself, as would be the case with tattoos or piercings, given their aesthetic objectives ([Menezes & Faro, 2023](#); [Walsh, 2012](#)). It is often triggered after intense feelings of anger, irritation, anxiety, sadness, or a subjective sense of loss of control, usually presenting as superficial cuts, scratches, burns, bumps against objects, or bites ([Nasution, 2023](#)).

Several theoretical frameworks have been used to understand the development of self-mutilation behaviors in adolescents. One common framework is the stress-coping model, which suggests that individuals engage in self-mutilation as a means to cope with overwhelming emotions or distressing situations. According to this model, self-mutilation serves as a maladaptive coping mechanism that provides temporary relief from emotional pain ([Singtakaew & Chaimongkol, 2021](#)).

Another theoretical framework that has been used is the social learning theory, which posits that individuals learn self-mutilation behaviors through observation and imitation of others, particularly peers or family members who engage in self-harming behaviors. This theory emphasizes the role of social influences in the development of self-mutilation behaviors ([Heilbron & Prinstein, 2008](#)).

Additionally, the biopsychosocial model considers biological, psychological, and social factors that contribute to the development of self-mutilation behaviors. Biological factors such as genetic predispositions or neurotransmitter imbalances may interact with psychological factors such as emotion regulation difficulties or impulsivity, as well as social factors such as trauma exposure or peer relationships, to increase the risk of engaging in self-harm ([Askew & Byrne, 2009](#)).

Results of one study ([Junior et al., 2023](#)) showed that most adolescents who perform self-injury are female (80.3%), between 13 and 14 years of age (50.9%), frequently self-mutilate with sharp objects (88.5%), in the regions of the arms, hands, and wrists (94.1%). Among the main motivations, family quarrels (83.6%), and 50.8 percent did not refer for follow-up with a mental health professional. A meta-analysis ([Lim et al., 2019](#)) of studies published between 1989 and 2018 aimed at estimating the overall lifespan and 12-month prevalence of suicidal behavior, deliberate self-injury, and non-suicidal self-injury in children and adolescents showed alarming results. That is, in 686-672 children and adolescents who were evaluated, 19.5 percent had a prevalence of non-suicidal self-mutilation and 14.2 percent, deliberate self-injury.

A nationwide survey was conducted in rural regions of China, involving 15,623 adolescents. To gather data, a multi-stage sampling method was utilized. The survey revealed that around 29 percent of these adolescents reported engaging in non-suicidal self-injury (NSSI) at least once within the previous year ([Tang et al., 2018](#)). In 11 US states, the Centers for Disease Control and Prevention Youth Risk Behavior Surveillance System surveyed the frequency of NSSI among 64,671 adolescents. The results showed that the percentage of boys reporting purposefully hurting themselves without wanting to die ranged from 6.4% to 14.8%. The percentage for girls varied from 17.7% to 30.8%. Depression, suicidal thoughts, plans, and attempts, sexual minority status, being electronically bullied, smoking; and substance use were associated with NSSI ([Monto et al., 2018](#)).

Previous research in the field of adolescent self-mutilation behaviors focused on understanding the prevalence, characteristics, and consequences of such behaviors. Studies have shown that self-mutilation behaviors can be linked to underlying mental health issues such as depression, anxiety, and trauma. Additionally, research has indicated that there may be gender differences in the prevalence and methods of

self-mutilation among adolescents. However, there is a lack of comprehensive understanding of the specific risk factors that contribute to self-mutilation behaviors among adolescents.

This gap presents a significant deficiency in the current literature, as it hinders the development of effective prevention and intervention strategies. It is important to address this gap to support adolescents who engage in self-mutilation behaviors and to prevent further harm. By conducting an integrative review of the scientific evidence on risk factors for self-mutilation among adolescents, this study aims to provide a comprehensive overview of the factors that may contribute to these behaviors. Ultimately, by identifying and understanding the potential risk factors for self-mutilation among adolescents, this research can inform the development of targeted interventions and support services that can help prevent and address self-mutilation behaviors in this vulnerable population.

Method

This is an integrative review study developed in five phases including 1) Identification of the problem and elaboration of the guiding question; 2) Search and selection of publications; 3) Data evaluation; 4) Data analysis; 5) Presentation of results ([Santos et al., 2007](#)).

Search Strategy

The data was collected using an instrument recognized by researchers who have articles in the literature, the studies were published in top-tier journals with JCR. Initially, for the elaboration of the research question guiding the study, the PICO (patient, intervention, comparison, outcomes) strategy was used. The use of this strategy is considered facilitating in the model in the construction of the research question of the review methods. It enables the identification of the descriptors that collaborate in the location of primary articles published in the databases ([Danski et al., 2017](#)). Therefore, the research question was "What are the risk factors for self-mutilation in adolescence?". The first element of the strategy (P) consists of the target audience; the second (I), is risk factors, the third (C) is comparison, and the fourth element (O), is self-harm. It should be noted that, depending on the type of review, there is no obligation to use all elements. In this review, the third element of the PICO strategy was not used because no comparison was made, so there was no analysis of the adolescents after self-mutilation.

The search for primary studies took place from March to April 2023, in the following databases: Medical Literature Analysis and Retrieval System Online (MEDLINE) and Latin American and Caribbean Health Sciences Literature (LILACS).

The following descriptors were used based on the electronic listing of the Health Sciences Descriptors (DeCS) of the Virtual Health Library (VHL): "Self-Destructive Behavior"; "Adolescent"; and "Risk Factors" and MeSH Database: "Self-Injurious Behavior"; "Adolescent"; and "Risk Factors" in a systematized and combined way, crossed with the Boolean operator "AND" with combinations in triads.

Inclusion Criteria

Studies were included if they (a) were original studies, case series, and case reports on risk factors for self-harm; (b) reported data about adolescents aged 10 to 19 years, and (c) published between 2018 and 2023 in Portuguese, English, and Spanish.

Exclusion Criteria

Studies were excluded if they were systematic reviews, integrative reviews, narrative reviews, response letters, editorials, theses, dissertations, books, manuals, and monographs. All studies with a sample group other than adolescents were excluded.

Data Extraction/ Synthesis

An analytical framework was built for data collection that made it possible to gather and synthesize the key information of the studies. The data collection instrument included the following information: title, author(s)/year of publication/country, objective, method, main results regarding risk factors for self-mutilation in adolescents, and the level of evidence-based on Joanna Briggs Institute ([Joanna Briggs](#)

[Institute, 2014](#)). The JBI organizes the studies in a pyramidal way so that the base corresponds to level five (expert opinion); then level four, with descriptive observational studies; level three, analytical observational; level two, quasi-experimental, and level one experimental. The levels are subdivided into letters so that all methodologies are covered, for example, level 1 is (1a), systematic reviews (SR) of randomized controlled trials (RCTs); (1b), ECR RS and other drawings; (1c), RCT, and (1d) pseudo RCTs ([Santos et al., 2007](#)). Subsequently, the studies were re-read to perform the descriptive analysis directed by the guiding question of the research, presenting the synthesis of each selected study and the comparisons between the similarities and differences of the findings.

Accuracy and validity

To ensure the accuracy of the search, the search strategy was developed using a combination of relevant keywords and controlled vocabulary terms. The study was conducted in two major databases that are well-known for their comprehensive coverage of the health sciences literature. The inclusion and exclusion criteria were clearly defined to ensure that only relevant studies were included in the review. Furthermore, the data extraction and synthesis process followed a structured approach, which included extracting key information from the selected studies and organizing it systematically. The level of evidence for each study was also assessed using a standardized classification system, which can help in evaluating the quality and reliability of the findings. Overall, these methodological approaches helped in validating the search process and ensuring that the review is based on accurate and relevant evidence.

Results

The initial electronic search generated 362 references, and the manual search found no further studies. After removing two duplicate studies, 360 references remained. In the next stage, 254 articles were excluded because they did not meet the inclusion criteria. At this stage, of the remaining 106 articles, 95 studies did not present adequate data related to the objective of the study. Finally, 11 articles were included in the review (N = 11; see flow diagram Figure 1).

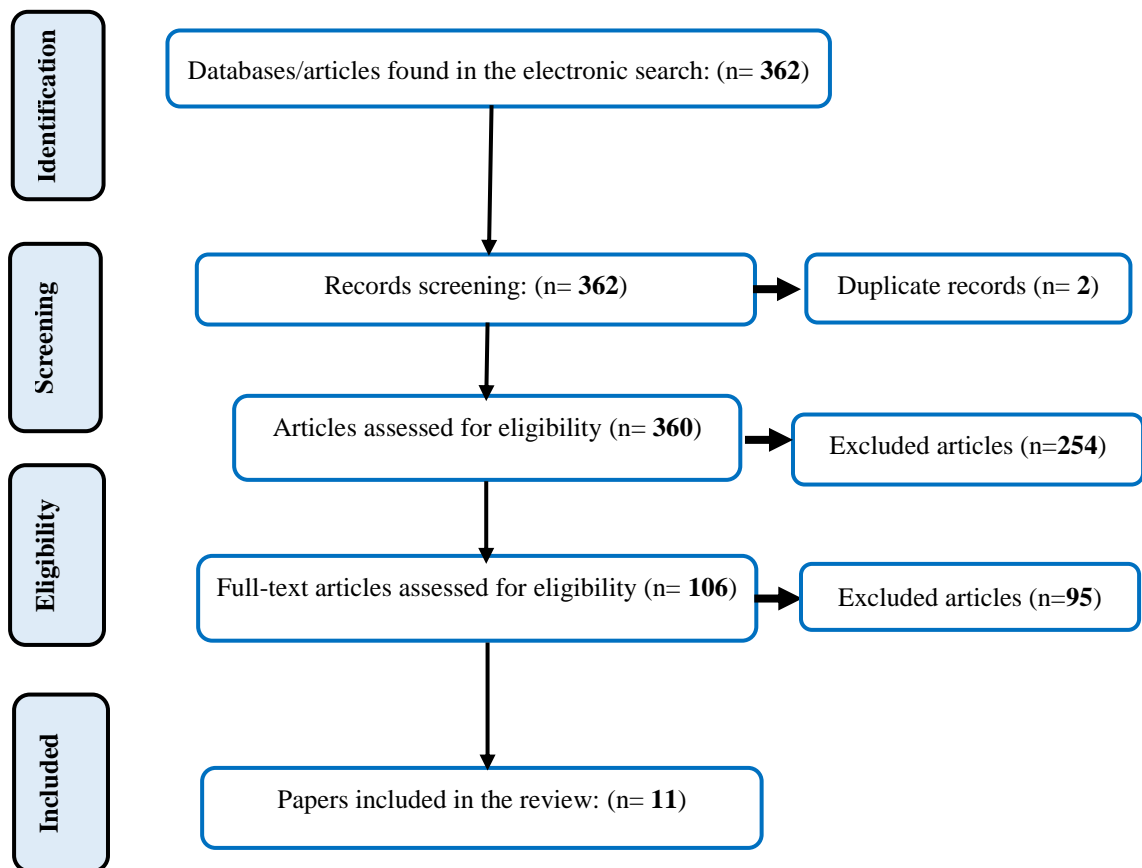


Figure 1. Flow Diagram**Studies Characteristics**

Table 1 provides descriptive characteristics of the included studies. All studies were international with quantitative (90,9%), qualitative (9%), longitudinal (9%), and case report (9%) approaches, with a higher prevalence in China (36.3%), Brazil (18.1%), Australia, Italy, Hungary, Vietnam, and Spain with only 1 (9%) publication. The number of samples in each study varied from one to 22,628 participants.

Table 1. Studies Characteristic

N	Reference	Approach	N	Country	Results
1	(Menezes & Faro, 2023)	Transverse	494	Brazil	- Physical abuse - Traumatic events in childhood
2	(Santo & Dell'Aglio, 2022)	Qualitative	4	Brazil	- Familial mental illness - History of previous domestic violence; feelings of guilt, shame, hopelessness, and emptiness - Social isolation and difficulty expressing oneself emotionally
3	(Wang et al., 2020)	Longitudinal	913	China	- Feeling of loneliness - Depression - Recent stressful events - Problematic behaviors
4	(Nguyen et al., 2020)	Transverse	648	Vietnam	- Cyberbullying - Low parental acceptance
5	(Del Brío Ibáñez & ME, 2019)	Case Report	1	Spain	- Difficulties in school social relationships - Social exclusion
6	(Wan et al., 2019)	Transverse	3381	China	- Adverse childhood experiences - Low social support
7	(Li et al., 2019)	Transverse	22628	China	- Low number of friends (<6)
8	(Li et al., 2019)	Transverse	1810	China	- LGBTQIA+ - Adverse childhood experiences - Bullying - Use of alcohol and tobacco
9	(Balázs et al., 2018)	Transverse	52	Hungary	- Affective and psychotic disorders - Substance abuse - ADHD**
10	(Masi et al., 2018)	Transverse	89	Italy	- Cyclothymic - Hypersensitive temperament
11	(Stanford et al., 2018)	Transverse	1521	Australia	- Anxiety - Impulsiveness - Poor coping strategies

*ALNS – Non-Suicidal Self-Injury

** ADHD – Attention Deficit Hyperactivity Disorder

Main Themes

Considering the research aim, two themes (Intrapersonal and Interpersonal self-mutilation risk factors) were extracted from the 11 articles (Figure 2).

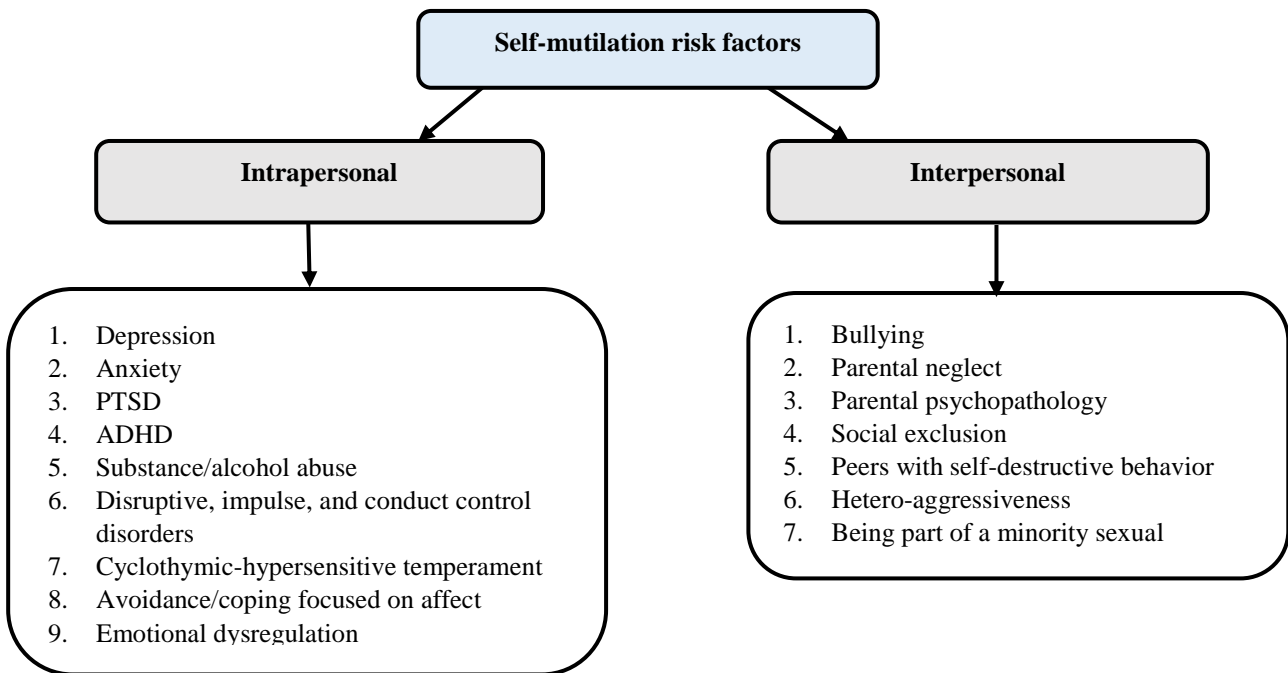


Figure 2. Thematic Map of the Main Themes (self-mutilation risk factors)

Theme 1: Intrapersonal self-mutilation risk factors

Some of the commonly recognized risk factors for intrapersonal self-mutilation include:

1. **Depression:** Regarding the association between psychiatric disorders and the practice of self-mutilation, three studies highlighting depressive symptoms were in focus, followed by anxiety symptoms (Masi et al., 2018; Stanford et al., 2018; Wang et al., 2020). Considered a multifactorial disease and a serious public health problem, depression affects millions of people worldwide, and one of the most severe outcomes may be suicidal ideas or behaviors (Menezes & Faro, 2023).
2. **Anxiety:** Some adolescents who experience high levels of anxiety may turn to self-mutilation as an unhealthy way to cope with their distress and regain a sense of control over their emotions. Having anxiety can greatly affect their self-perception and self-esteem, making them even more prone to engaging in self-mutilating behaviors. Additionally, these adolescents often struggle to express their emotional distress effectively or seek appropriate support, which can lead them to resort to self-mutilation as a way to externalize their inner turmoil (Stanford et al., 2018).
3. **Post-traumatic stress disorder (PTSD):** PTSD is characterized by intrusive and distressing memories or flashbacks of the traumatic event, avoidance of reminders of the trauma, negative changes in mood and cognition, and heightened arousal and reactivity. Li et al. (2019), Menezes and Faro (2023), Santo et al. (2022), Wan et al. (2019), and Wang et al. (2020) have shown that individuals with PTSD may engage in self-harming behaviors as a way to cope with distressing emotions and memories associated with their traumatic experiences.
4. **Attention deficit hyperactivity disorder (ADHD):** ADHD is characterized by ongoing patterns of inattention, hyperactivity, and impulsivity that can significantly influence one's daily functioning and overall well-being. While the primary symptoms of ADHD are related to attention and hyperactivity, Balázs et al (2018) and Stanford et al. (2018) have also shown a potential link between ADHD and self-mutilation in adolescents. Impulsivity is marked by the appreciation of immediate rewards and difficulties in inhibiting some behaviors or adjusting them to environmental demands (Santo & Dell'Aglio, 2022).
5. **Substance/alcohol abuse:** When individuals engage in substance abuse, such as alcohol or drugs, their inhibitions and judgment are often impaired, leading to impulsive and risky behaviors. These substances can also have mood-altering effects, exacerbating feelings of depression, anxiety, or emotional distress,

which may contribute to self-harming tendencies. Moreover, substance abuse can increase feelings of isolation, alienation, and low self-esteem, making adolescents more prone to resort to self-mutilation as a coping mechanism or a way to gain a sense of control over their emotions ([Balázs et al., 2018](#); [Li et al., 2019](#)).

6. *Disruptive, impulse, and conduct control disorders*: These disorders involve difficulties in regulating emotions and behaviors, leading individuals to engage in impulsive and disruptive actions without considering the consequences. Adolescents diagnosed with these disorders are more likely to engage in self-harming behaviors as a means to cope with intense emotions, release tension, or seek control over their lives. The impulsive nature of these disorders contributes to the immediate gratification and temporary relief that self-mutilation provides ([Masi et al., 2018](#); [Stanford et al., 2018](#)).
7. *Cyclothymic-hypersensitive temperament (in cases of mood disorders)*: Adolescents with this temperament tend to experience mood swings characterized by intense lows and highs, but not to the extent of full-blown depressive or manic episodes. They may be more prone to impulsive behaviors, have difficulty regulating their emotions, and exhibit heightened sensitivity to stressors. The combination of these factors can lead to increased vulnerability and a greater likelihood of engaging in self-harming behaviors as a coping mechanism ([Masi et al., 2018](#)).
8. *Avoidance/coping focused on affect*: Adolescents who struggle to effectively deal with their emotions and find healthy ways to cope with distress often resort to self-mutilation as a means of relieving their emotional pain or attempting to regain a sense of control over their lives. By avoiding or suppressing their emotions, they may not address the underlying issues causing their distress. This avoidance can lead to a buildup of emotions and an overwhelming sense of helplessness, which may result in self-mutilation as a maladaptive coping mechanism ([Santo & Dell'Aglio, 2022](#); [Wang et al., 2020](#)).
9. *Emotional dysregulation*: Among the analyzed studies, emotional dysregulation was presented as a mediator between exposure to maltreatment and the frequency of self-injury ([Del Brío Ibáñez & ME, 2019](#); [Li et al., 2019](#); [Nguyen et al., 2020](#); [Wan et al., 2019](#); [Wang et al., 2020](#)). Dysregulation is characterized by the difficulty of managing the intensity of emotions and coping with adverse events, or manifesting as exaggerations.

Theme 2: Interpersonal self-mutilation risk factors

Some of the commonly recognized risk factors for intrapersonal self-mutilation include:

1. *Bullying*: Bullying was highlighted in several studies analyzed ([Del Brío Ibáñez & ME, 2019](#); [Li et al., 2019](#); [Neto & Pelizzari, 2021](#); [Wan et al., 2019](#)).
2. Aggressors regularly understand bullying as intimidating, sometimes violent, intentional practices. They commonly happen in the school environment with the aim of humiliating, and inflicting physical and emotional harm ([Menezes & Faro, 2023](#)). However, with technological advances and the greater diffusion of the internet and social networks among young people, cyberbullying has also become common ([Del Brío Ibáñez & ME, 2019](#)).
3. *Parental neglect*: Actions of neglect and maltreatment in childhood were considered another predictor of self-injurious behaviors in adolescence in other studies analyzed ([Balázs et al., 2018](#); [Gromatsky et al., 2017](#); [Li et al., 2019](#); [Liu et al., 2017](#)). Such traits, when viewed together, may indicate negligent parental behavior, demonstrating the importance of social support for the prevention of self-mutilation ([Nguyen et al., 2020](#)).
4. *Parental psychopathology*: Parental psychopathology can create a dysfunctional family environment characterized by conflict, chaos, and inconsistent parenting practices, further exacerbating the risk of self-mutilation among adolescents ([Santo & Dell'Aglio, 2022](#)).
5. *Social exclusion*: Social exclusion creates a sense of isolation, loneliness, and low self-esteem, ultimately leading to feelings of distress and the desire to cope with emotional pain through self-mutilation ([Del Brío Ibáñez & ME, 2019](#); [Li et al., 2019](#); [Santo & Dell'Aglio, 2022](#); [Wang et al., 2020](#)).
6. *Peers with self-destructive behavior*: Concerning social relationships in the school environment and the influence of self-injurious practices as a risk factor for inducing new cases in other adolescents, some studies have identified a significant correlation between self-injury and having friends with negative

characteristics (running away from home, use of psychoactive substances and self-destructive behavior). These factors may exist due to the typical tendency of this stage of development to associate with certain social groups as they build their identity ([Auerbach et al., 2021](#); [Liu et al., 2017](#); [Tatnell et al., 2017](#); [Wang et al., 2020](#)).

7. *Hetero-aggressiveness*: In the context of adolescents, hetero-aggressiveness can manifest as discrimination, or verbal and physical violence towards individuals who are perceived as different in terms of their race, ethnicity, sexual orientation, or other identity factors. Adolescents who experience or engage in hetero-aggressive behaviors may internalize feelings of shame, worthlessness, and isolation, leading to a heightened risk of engaging in self-harming behaviors as a coping mechanism ([Menezes & Faro, 2023](#); [Santo & Dell'Aglio, 2022](#)).
8. *Sexual and gender minority population*: Findings showed a higher number of self-mutilations among people considered sexual minorities ([Balázs et al., 2018](#); [Li et al., 2019](#)). The social conservatism and prejudice may contribute to an increased vulnerability among the LGBTQIA+ population. The fear of violence and abuse experienced by this group can lead to social isolation, which in turn may contribute to self-injurious behavior ([Santo & Dell'Aglio, 2022](#)). Surprisingly, the studies found no evidence of self-mutilation in young people with borderline personality disorder, which cannot be generalized since this practice is constantly carried out by these young people.

Discussion

In order to the diversity of risk factors identified in this review, we decided to categorize them according to the Nock and Prinstein model. This model separates the risk factors into two main domains: Intrapersonal and Interpersonal, providing a more comprehensive framework for análisis ([Nock & Prinstein, 2004](#)).

Intrapersonal Risk Factors

The following risk factors were categorized as follows: sleep disorders, depression, anxiety, PTSD, ADHD, binge eating, purgative behavior, substance abuse, disruptive behavior, impulse control, and conduct control disorders, cyclothymic-hypersensitive temperament (in cases of mood disorders), impulsivity, high neuroticism, greater openness to new experiences, avoidance/coping focused on affection, emotional dysregulation, and being part of a minority sexual orientation.

One of the studies reviewed focused on a cross-sectional study carried out in Singapore, involving 108 adolescents. This study revealed a high prevalence (75%) of self-mutilation among the participants, with emotional dysregulation identified as a mediator linking exposure to maltreatment and the frequency of self-injury ([Peh et al., 2017](#)). Emotional dysregulation is defined by challenges in managing intense emotions and dealing with difficult situations, often leading to emotional outbursts or emotional numbness.

Impulsivity, identified as a risk factor in the current study, could be linked to emotional dysregulation. It is characterized by a preference for immediate rewards, challenges in controlling certain behaviors, and difficulty adapting them to the demands of the environment.

In relation to the link between psychiatric disorders and self-mutilation, seven studies emphasized depressive symptoms, while three focused on anxiety symptoms ([Balázs et al., 2018](#); [Stanford et al., 2018](#); [Wang et al., 2020](#)). Depression, recognized as a complex illness and a significant public health concern, impacts around 350 million individuals globally, with one of its most severe consequences, committing suicide.

A cross-sectional study conducted in Taiwan with 140 students revealed a significant link between depression and self-mutilation. This supports the findings of a previous Chinese study involving 913 adolescents, which reported that 31.5% of self-injurious behavior was driven by feelings of loneliness and problematic behavior ([Wang et al., 2020](#)). Similarly, a cohort study with 1943 Australian adolescents also found a strong connection between self-injury and depression and anxiety, indicating a potential need for stress relief as a motivating factor.

Key findings from the analysis of articles revealed that eating disorders and substance abuse were identified as potential risk factors for self-mutilation in adolescents. A study involving 7,326 elementary and

high school students in the USA showed a correlation between binge eating, purging, and substance abuse with the highest incidence of self-mutilation.

Alcohol consumption in adolescence may also serve as a means of expressing curiosity and exploring new sensations during the biopsychosocial development phase. However, excessive use of alcohol is seen as a catalyst for risky behaviors, such as increased impulsivity, leading to self-harm, aggression towards others, and even suicide.

Interpersonal Risk Factors

This category includes risk factors such as bullying, low parental acceptance, parental psychopathology, social exclusion, exposure to adverse events in childhood, recent stressful events, having close contact with people with self-destructive behavior, unstable interpersonal relationships, and hetero-aggressiveness.

The impact of adverse events in childhood on the phenomenon of self-mutilation in adolescence is evident. One study analyzed 351,372 children in Western Australia with follow-up until adolescence. It has been identified that child maltreatment increases the risk of adolescent hospital admissions for self-mutilation ([Hu et al., 2017](#)).

In this sense, it is important to highlight a cross-sectional study carried out with a sample of the general German population identified that 65% of people with a history of self-mutilation had a history of maltreatment in childhood, in which abuse and emotional neglect are directly associated with self-mutilation. These findings emphasize the importance of health professionals and educators identifying early signs of children and adolescents in situations of violence.

Bullying was highlighted in several studies analyzed ([Del Brío Ibáñez & ME, 2019](#); [Li et al., 2019](#); [Nguyen et al., 2020](#)). Bullying is understood as intimidating, sometimes violent, intentional practices by aggressors regularly. They commonly happen in the school environment with the aim of humiliating, inflicting physical and emotional damage.

However, with technological advancement and the greater diffusion of the internet and social networks among young people, cyberbullying has also become a reality in the twenty-first century. Accordingly, a study conducted in Vietnam examined the associations between cyberbullying, parental attitudes, self-harm, and suicide with 648 adolescent schoolchildren identifying cyberbullying as an independent risk factor for self-injurious behavior ([Nguyen et al., 2020](#)). From these findings, it can be inferred that, because it is a new phenomenon, institutions may not yet be prepared to develop effective coping mechanisms.

About the parenting relationship, a study conducted in the USA with 550 adolescents, when investigating the behavioral characteristics of the parents and their influence on non-suicidal self-injury, identified that adolescents with parents with substance use disorder and ADHD symptoms, high self-criticism and low conscientiousness and agreeableness were associated with a higher prevalence of self-mutilation and with the findings of Hawton and colleagues which identified family adversities and dysfunctional parenting with self-injurious behavior ([Hawton et al., 2012](#)).

Actions of neglect and maltreatment in childhood were considered predictors of self-injurious behavior in adolescence in other studies analyzed ([Hu et al., 2017](#); [Li et al., 2019](#); [Tatnell et al., 2017](#); [Wang et al., 2020](#)). Such traits, when viewed together, may indicate negligent parental behavior, demonstrating the importance of social support for the prevention of self-mutilation.

Concerning social relationships in the school environment and the influence of self-injury practices as a risk factor for inducing new cases in other adolescents, Çimen and colleagues identified a significant correlation between self-mutilation and having friends with negative characteristics (running away from home, use of psychoactive substances, and self-destructive behaviors). The authors suggest that these factors may exist due to the typical tendency of this phase of development, of association with certain social groups during their identity construction ([Cimen et al., 2017](#)).

In this sense, Prinstein assessed that adolescents with self-mutilatory behavior have a high perception of self-destructive behaviors and depressive affections from friends, and this perception is positively associated with an increase in self-mutilatory behavior of the adolescent in question ([Prinstein et al., 2010](#)).

Consequently, both intrapersonal and interpersonal factors are mostly subject to intervention, whether in the field of early approach to psychiatric conditions and family contexts, or in the field of prevention in communities and schools.

Limitations and strengths

The findings of this study are specifically limited to self-mutilation behaviors among adolescents. It is important to note that distinct outcomes might arise if individuals from different age groups were included in the analysis. Despite these limitations, this study provides valuable insight into the risk factors associated with self-mutilation behaviors in adolescents. By recognizing and understanding these risk factors, mental health professionals can develop more targeted and effective interventions to prevent and address self-mutilation behaviors in this vulnerable population.

Conclusion

The present review revealed the interest of the scientific community in seeking further study of the theme in various parts of the world because it is considered a serious public health problem capable of triggering long-term consequences. Understanding these risk factors can help to develop interventions and support systems to address and mitigate the risk of self-mutilation in adolescents.

Conflict of Interests

The authors report no conflict of interest in current research.

References

- Askew, M., & Byrne, M. W. (2009). Biopsychosocial Approach to Treating Self-Injurious Behaviors: An Adolescent Case Study. *Journal of Child and Adolescent Psychiatric Nursing*, 22(3), 115-119. <https://doi.org/10.1111/j.1744-6171.2009.00186.x>
- Auerbach, R. P., Pagliaccio, D., Allison, G. O., Alqueza, K. L., & Alonso, M. F. (2021). Neural correlates associated with suicide and nonsuicidal self-injury in youth. *Biological psychiatry*, 89(2), 119-133. <https://doi.org/10.1016/j.biopsych.2020.06.002>
- Balázs, J., Györi, D., Horváth, L. O., Mészáros, G., & Szentiványi, D. (2018). Attention-deficit hyperactivity disorder and nonsuicidal self-injury in a clinical sample of adolescents: the role of comorbidities and gender. *BMC psychiatry*, 18, 1-10. <https://doi.org/10.1186/s12888-018-1620-3>
- Çimen, İ. D., Coşkun, A., & Etiler, N. (2017). Non-suicidal self-injury behaviors/features and relationship with adolescents/daily life activities and mental status. *The Turkish journal of pediatrics*, 59(2), 113-121. <https://doi.org/10.24953/turkjped.2017.02.002>
- Danski, M. T. R., Oliveira, G., Pedrolo, E., Lind, J., & Johann, D. A. (2017). Importance of evidence-based practice in nurse's work processes. *Cienc Cuid Saude*, 16(2), 1-6. <https://doi.org/10.4025/ciencucuidsaude.v16i2.36304>
- De Sene Moreira, É., do Vale, R. R. M., Caixeta, C. C., & Teixeira, R. A. G. (2020). Automutilação em adolescentes: revisão integrativa da literatura/Self-mutilation among adolescents: an integrative review of the literature. *Ciencia & saude coletiva*, 25(10), 3945-3955. <https://doi.org/10.1590/1413-812320202510.31362018>
- Del Brío Ibáñez, P., & ME, V. F. (2019). Adolescent with non-suicidal self-harm in a psychosocial adversity environment. *Archivos Argentinos de Pediatría*, 117(5), e485-e488. <https://doi.org/10.5546/aap.2019.e485>
- Ferreira, B. B., da Silva Bandeira, B. E., de Assis Fonseca, M. N., & dos Santos Freitas, G. C. (2023). Autolesão não suicida em crianças e adolescentes com TDAH: revisão narrativa da literatura. *Brazilian Journal of Health Review*, 6(3), 12626-12641. <https://doi.org/10.34119/bjhrv6n3-329>
- Gromatsky, M. A., Waszczuk, M. A., Perlman, G., Salis, K. L., Klein, D. N., & Kotov, R. (2017). The role of parental psychopathology and personality in adolescent non-suicidal self-injury. *Journal of psychiatric research*, 85, 15-23. <https://doi.org/10.1016/j.jpsychires.2016.10.013>

- Hawton, K., Saunders, K. E., & O'Connor, R. C. (2012). Self-harm and suicide in adolescents. *The lancet*, 379(9834), 2373-2382. [https://doi.org/10.1016/S0140-6736\(12\)60322-5](https://doi.org/10.1016/S0140-6736(12)60322-5)
- Heilbron, N., & Prinstein, M. J. (2008). Peer influence and adolescent nonsuicidal self-injury: A theoretical review of mechanisms and moderators. *Applied and preventive psychology*, 12(4), 169-177. <https://doi.org/10.1016/j.appsy.2008.05.004>
- Hu, N., Taylor, C. L., Li, J., & Glauert, R. A. (2017). The impact of child maltreatment on the risk of deliberate self-harm among adolescents: A population-wide cohort study using linked administrative records. *Child abuse & neglect*, 67, 322-337. <https://doi.org/201710.1016/j.chiabu.2017.03.012>
- Joanna Briggs Institute. (2014). The Joanna Briggs Institute Levels of Evidence and Grades of Recommendation Working Party*. *Supporting Document for the Joanna Briggs Institute Levels of Evidence and Grades of Recommendation*. Austrália: Joanna Briggs Institute, 2019-2005.
- Junior, A. P., de Lima, C. H., dos Santos Mendonça, T. C., Damaciano, H. T., da Silva Teixeira, I. P., & de Oliveira, V. L. d. S. (2023). CARACTERIZAÇÃO DA CONDUTA AUTOLESIVA EM ADOLESCENTES: um estudo descritivo. *Psicologia e Saúde em debate*, 9(2), 355-370. <https://doi.org/10.21203/rs.3.rs-2289558/v1>
- Li, D., Yang, R., Wan, Y., Tao, F., Fang, J., & Zhang, S. (2019). Interaction of health literacy and problematic mobile phone use and their impact on non-suicidal self-injury among Chinese adolescents. *International journal of environmental research and public health*, 16(13), 2366. <https://doi.org/10.3390/ijerph16132366>
- Li, X., Zheng, H., Tucker, W., Xu, W., Wen, X., Lin, Y., Jia, Z., Yuan, Z., & Yang, W. (2019). Research on relationships between sexual identity, adverse childhood experiences and non-suicidal self-injury among rural high school students in less developed areas of China. *International journal of environmental research and public health*, 16(17), 3158. <https://doi.org/10.3390/ijerph16173158>
- Lim, K.-S., Wong, C. H., McIntyre, R. S., Wang, J., Zhang, Z., Tran, B. X., Tan, W., Ho, C. S., & Ho, R. C. (2019). Global lifetime and 12-month prevalence of suicidal behavior, deliberate self-harm and non-suicidal self-injury in children and adolescents between 1989 and 2018: a meta-analysis. *International journal of environmental research and public health*, 16(22), 4581. <https://doi.org/10.3390/ijerph16224581>
- Liu, X., Chen, H., Bo, Q.-G., Fan, F., & Jia, C.-X. (2017). Poor sleep quality and nightmares are associated with non-suicidal self-injury in adolescents. *European Child & Adolescent Psychiatry*, 26, 271-279. <https://doi.org/10.1007/s00787-016-0885-7>
- Masi, G., Milone, A., Montesanto, A. R., Valente, E., & Pisano, S. (2018). Non suicidal self-injury in referred adolescents with mood disorders and its association with cyclothymic-hypersensitive temperament. *Journal of affective disorders*, 227, 477-482. <https://doi.org/10.1016/j.jad.2017.11.049>
- Menezes, M. S., & Faro, A. (2023). Avaliação da relação entre eventos traumáticos infantis e comportamentos autolesivos em adolescentes. *Psicologia: Ciência e Profissão*, 43, e247126. <https://doi.org/10.1590/1982-3703003247126>
- Monto, M. A., McRee, N., & Deryck, F. S. (2018). Nonsuicidal self-injury among a representative sample of US adolescents, 2015. *American journal of public health*, 108(8), 1042-1048. <https://doi.org/10.2105/AJPH.2018.304470>
- Nasution, E. S. (2023). Dynamics of Self-Injury Behavior in Adolescents from a Broken Home Family. *Nusantara Science and Technology Proceedings*, 1-7. <https://doi.org/10.11594/nstp.2023.3501>
- Neto, N. G. d. T. N., & Pelizzari, J. V. (2021). Análise da relação entre o abuso de álcool e comportamento suicida em jovens atendidos pelo caps ad de cascavel/pr. *FAG JOURNAL OF HEALTH (FJH)*, 3(1), 44-48. <https://doi.org/10.35984/fjh.v3i1.300>
- Nguyen, H. T. L., Nakamura, K., Seino, K., & Vo, V. T. (2020). Relationships among cyberbullying, parental attitudes, self-harm and suicidal behavior among adolescents: results from a school-based survey in Vietnam. *BMC public health*, 20, 1-9. <https://doi.org/10.1186/s12889-020-08500-3>
- Nock, M. K., & Prinstein, M. J. (2004). A functional approach to the assessment of self-mutilative behavior. *Journal of consulting and clinical psychology*, 72(5), 885. <https://doi.org/10.1037/0022-006X.72.5.885>

- Peh, C. X., Shahwan, S., Fauziana, R., Mahesh, M. V., Sambasivam, R., Zhang, Y., Ong, S. H., Chong, S. A., & Subramaniam, M. (2017). Emotion dysregulation as a mechanism linking child maltreatment exposure and self-harm behaviors in adolescents. *Child abuse & neglect*, 67, 383-390. <https://doi.org/10.1016/j.chiabu.2017.03.013>
- Prinstein, M. J., Heilbron, N., Guerry, J. D., Franklin, J. C., Rancourt, D., Simon, V., & Spirito, A. (2010). Peer influence and nonsuicidal self injury: Longitudinal results in community and clinically-referred adolescent samples. *Journal of abnormal child psychology*, 38, 669-682. <https://doi.org/10.1007/s10802-010-9423-0>
- Santo, M. A. d. S., & Dell'Aglio, D. D. (2022). Self-injury in adolescence from the bioecological perspective of human development. *Psicologia: teoria e prática*, 24(1), 1-24. <https://doi.org/10.1590/S0104-11692007000300023>
- Santos, C. M. d. C., Pimenta, C. A. d. M., & Nobre, M. R. C. (2007). The PICO strategy for the research question construction and evidence search. *Revista latino-americana de enfermagem*, 15, 508-511. <https://doi.org/10.24879/201800120010092>
- Singtakaew, A., & Chaimongkol, N. (2021). Deliberate self-harm among adolescents: A structural equation modelling analysis. *International journal of mental health nursing*, 30(6), 1649-1663. <https://doi.org/10.1111/inm.12918>
- Stanford, S., Jones, M. P., & Hudson, J. L. (2018). Appreciating complexity in adolescent self-harm risk factors: psychological profiling in a longitudinal community sample. *Journal of youth and adolescence*, 47, 916-931. <https://doi.org/10.1007/s10964-017-0721-5>
- Tang, J., Li, G., Chen, B., Huang, Z., Zhang, Y., Chang, H., Wu, C., Ma, X., Wang, J., & Yu, Y. (2018). Prevalence of and risk factors for non-suicidal self-injury in rural China: results from a nationwide survey in China. *Journal of affective disorders*, 226, 188-195. <https://doi.org/10.1016/j.jad.2017.09.051>
- Tatnell, R., Hasking, P., Newman, L., Taffe, J., & Martin, G. (2017). Attachment, emotion regulation, childhood abuse and assault: examining predictors of NSSI among adolescents. *Archives of suicide research*, 21(4), 610-620. <https://doi.org/10.1080/13811118.2016.1246267>
- Walsh, B. W. (2012). *Treating self-injury: A practical guide*. Guilford Press.
- Wan, Y., Chen, R., Ma, S., McFeeters, D., Sun, Y., Hao, J., & Tao, F. (2019). Associations of adverse childhood experiences and social support with self-injurious behaviour and suicidality in adolescents. *The British Journal of Psychiatry*, 214(3), 146-152. <https://doi.org/10.1192/bjp.2018.263>
- Wang, H., Wang, Q., Liu, X., Gao, Y., & Chen, Z. (2020). Prospective interpersonal and intrapersonal predictors of initiation and cessation of non-suicidal self-injury among Chinese adolescents. *International journal of environmental research and public health*, 17(24), 9454. <https://doi.org/10.3390/ijerph17249454>
- World Health Organization. (2014). *Health for the World's Adolescents A second chance in the second decade*. Department of Maternal, Newborn, Child and Adolescent Health. https://apps.who.int/adolescent/seconddecade/files/1612_MNCAH_HWA_Executive_Summary.pdf.