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Emotion Dysregulation as a Mediator of the Relationship Between Childhood Trauma and Self-Harm

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ABSTRACT

Objective: The present study aimed to investigate the mediating role of emotion dysregulation in the relationship between childhood trauma and self-harming behavior in adolescents and young adults.

Methods and Materials: This study employed a descriptive correlational design with a sample of 361 participants aged 15 to 25 from Taiwan, selected based on the Morgan and Krejcie sample size table. Data were collected using three standardized instruments: the Childhood Trauma Questionnaire–Short Form (CTQ-SF), the Difficulties in Emotion Regulation Scale (DERS), and the Deliberate Self-Harm Inventory (DSHI). Descriptive statistics, Pearson correlation analysis, and structural equation modeling (SEM) were performed using SPSS version 27 and AMOS version 21 to assess relationships among variables and examine the mediating role of emotion dysregulation.

Findings: Descriptive analyses revealed moderate to high levels of childhood trauma ($M = 62.87$, $SD = 14.46$), elevated emotion dysregulation ($M = 94.21$, $SD = 16.08$), and moderate self-harming behavior ($M = 9.38$, $SD = 4.73$). Pearson correlations showed significant positive relationships between childhood trauma and emotion dysregulation ($r = .61$, $p < .001$), childhood trauma and self-harm ($r = .48$, $p < .001$), and emotion dysregulation and self-harm ($r = .56$, $p < .001$). SEM indicated a good model fit ($\chi^2/df = 2.16$, $GFI = .94$, $CFI = .96$, $RMSEA = .056$). Path analysis demonstrated that emotion dysregulation significantly mediated the relationship between childhood trauma and self-harming behavior, with both direct ($\beta = .21$, $p = .003$) and indirect ($\beta = .29$, $p < .001$) effects observed.

Conclusion: These findings highlight the crucial role of emotion dysregulation as a psychological mechanism linking childhood trauma to self-harm. Targeting emotional regulation skills may serve as a vital component in the prevention and intervention strategies for trauma-exposed youth exhibiting self-injurious behavior.

Keywords: *Childhood trauma, Emotion dysregulation, Self-harm, Adolescents*

1. Introduction

Childhood trauma is a significant predictor of numerous adverse psychological outcomes across the lifespan, with one of the most troubling being self-harming behaviors. These experiences, which encompass emotional, physical, and sexual abuse, as well as various forms of neglect, often leave enduring psychological scars that increase vulnerability to self-injury, suicidality, and other forms of maladaptive coping mechanisms (Ebrahim et al., 2021; Lei et al., 2024). A growing body of literature supports the notion that childhood trauma contributes to deficits in emotional regulation, which in turn exacerbate risk for self-harming behaviors (Ashrafi et al., 2021; Shahmoradi et al., 2021). However, the psychological mechanisms underlying this association remain underexplored, particularly in youth populations.

Non-suicidal self-injury (NSSI), or deliberate self-harm without suicidal intent, is increasingly recognized as a coping mechanism used by individuals to manage overwhelming emotions or dissociative states, particularly among those with trauma histories (Choi & Kweon, 2023; Dodd et al., 2022). Adolescents and young adults represent a particularly vulnerable group, as developmental transitions often heighten emotional reactivity and impulsivity, especially when early trauma disrupts the development of secure attachment and emotion regulation skills (Ray et al., 2021; Stagaki et al., 2021). Recent findings indicate that childhood trauma may not only initiate emotional distress but also impair the ability to regulate such distress effectively, thus increasing the likelihood of maladaptive responses such as self-harm (Ferração & Elklit, 2020; Siegel & Lahav, 2021). In this regard, emotion dysregulation serves as a plausible intermediary between early adverse experiences and subsequent self-injurious behavior.

Several types of childhood trauma have been independently associated with increased risk of self-harm. Emotional abuse, for example, has been shown to have particularly deleterious effects on identity formation and self-worth, both of which are critical during adolescence (Çağlar et al., 2021; Maepa & Ntshalintshali, 2020). Sexual abuse, likewise, is strongly linked with self-harm, often through mechanisms such as dissociation, shame, and body alienation (Dhyatmika et al., 2024; Weihmann, 2022). Physical abuse and neglect may foster perceptions of the world as unsafe and the self as unworthy, reinforcing harmful behavioral patterns (Kuznetsova et al., 2022; Ravishankar & Sathiyaseelan, 2022). The multidimensional

nature of childhood trauma requires a nuanced analytic approach that accounts for both direct and indirect pathways to self-harming behaviors. Understanding how these experiences interact with internal psychological processes, such as emotional regulation, is key to informing intervention strategies.

Emotion dysregulation is broadly defined as difficulties in monitoring, evaluating, and modifying emotional reactions in adaptive ways. It encompasses a range of deficits, including impulse control problems, limited access to effective regulation strategies, and poor emotional clarity (Ashrafi et al., 2021; Shahmoradi et al., 2021). Individuals who have experienced trauma early in life may struggle with these regulatory processes, as chronic exposure to threat during formative years can disrupt the neurobiological systems responsible for emotional regulation (Dodd et al., 2022; Stagaki et al., 2021). Research has shown that individuals with poor emotion regulation skills are more likely to engage in self-harm as a means of reducing emotional arousal or achieving relief from distressing internal states (Dhyatmika et al., 2024; Williams, 2019). In this context, self-harm becomes not merely a behavioral outcome but a maladaptive coping strategy rooted in early emotional dysfunction.

Empirical investigations have increasingly highlighted the mediating role of emotion regulation in the trauma–self-harm link. For instance, Ashrafi et al. (2021) found that emotion dysregulation significantly mediated the relationship between insecure attachment, childhood trauma, and self-harming behaviors in adolescents (Ashrafi et al., 2021). Similarly, Shahmoradi et al. (2021) demonstrated that childhood trauma predicted self-harming behaviors through the dual mediating effects of emotion dysregulation and self-criticism (Shahmoradi et al., 2021). These findings point to emotion dysregulation as a core process by which early traumatic experiences may translate into harmful behavioral patterns, especially in adolescent populations who are still in the process of developing stable coping mechanisms.

Further supporting this view, Choi and Kweon (2023) identified mentalization—a cognitive aspect of emotion regulation—as a key mediator between attachment trauma and self-injury in female adolescents (Choi & Kweon, 2023). Their work underscores the importance of integrating both emotional and cognitive regulation components when examining self-harm in trauma-exposed individuals. Lei et al. (2024) also applied network analysis to uncover how depressive symptoms and trauma history are interconnected with non-suicidal self-injury, finding that emotion

dysregulation emerged as a central node linking various psychopathological symptoms (Lei et al., 2024). These studies highlight the necessity of adopting complex statistical models to better capture the nuanced interrelations among trauma, emotional processes, and behavioral outcomes.

The burden of self-harm is particularly pronounced in populations exposed to chronic stress and systemic adversity. For instance, individuals with histories of child labor or incarceration often report elevated levels of self-injury and emotion regulation problems (TaşÖren & Gül, 2022; Torgah, 2024). In their qualitative study, Torgah (2024) described how adverse childhood experiences among survivors of child labor continued to shape their emotional functioning well into adulthood, often manifesting as poor self-regulatory skills and destructive coping mechanisms (Torgah, 2024). Likewise, incarcerated men with childhood abuse histories displayed higher rates of self-harm, with psychological symptoms acting as both mediators and outcomes of trauma exposure (TaşÖren & Gül, 2022). These findings emphasize the need for trauma-informed care frameworks that specifically address emotional regulation skills.

Gender and cultural context also play crucial roles in how trauma and emotion dysregulation contribute to self-harming behavior. Female adolescents appear particularly vulnerable to the effects of childhood trauma on emotional functioning, with research indicating higher rates of internalizing symptoms and self-harm in this demographic (fard et al., 2023; Younas et al., 2023). A study by fard et al. (2023) found that among female adolescents, childhood trauma, along with cognitive distortions and reduced cognitive flexibility, significantly predicted self-harming behaviors (fard et al., 2023). Similarly, Younas et al. (2023) reported that clinical and non-clinical adult females with trauma histories demonstrated significantly higher levels of self-harm compared to controls, and this relationship was mediated by emotional dysregulation and depression severity (Younas et al., 2023). These insights call attention to the intersectionality of gender, culture, and trauma in the psychological development of young individuals.

Biological and psychiatric vulnerabilities may further compound the trauma–self-harm relationship. Research has shown that individuals with bipolar disorder, for example, who have experienced childhood trauma, are at greater risk for engaging in self-injury (Janiri et al., 2024). Janiri et al. (2024) found that in youth with bipolar spectrum disorders, trauma exposure was significantly associated with increased

self-harm and suicidality, independent of mood symptom severity (Janiri et al., 2024). Similarly, Liu et al. (2024) demonstrated that adolescents with major depressive disorder who reported trauma histories were more likely to engage in self-harm and meet criteria for complex PTSD, further emphasizing the role of emotion dysregulation as a central pathway (Liu et al., 2024). These findings reveal how trauma interacts with psychiatric symptomatology to shape maladaptive behavioral trajectories.

The impact of digital trauma—particularly online sexual abuse—on emotion regulation and self-harm is also gaining attention. Dulawan and Bance (2024) studied survivors of online sexual exploitation in the Philippines and found significant psychological sequelae, including dissociation, anxiety, and self-harming tendencies, all closely linked to impaired emotional regulation (Dulawan & Bance, 2024). Such findings underscore how modern forms of trauma may have similar psychological footprints to more traditional abuse experiences. Furthermore, the COVID-19 pandemic introduced new layers of emotional stress, particularly for individuals with preexisting trauma. Siegel and Lahav (2021) found that individuals with childhood abuse histories displayed more distress during the pandemic due to underlying emotion regulation deficits (Siegel & Lahav, 2021). This study aims to investigate the mediating role of emotion dysregulation in the relationship between childhood trauma and self-harm, contributing to a more nuanced understanding of this developmental trajectory.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a descriptive correlational design to investigate the mediating role of emotion dysregulation in the relationship between childhood trauma and self-harm. The statistical population consisted of adolescents and young adults residing in Taiwan. A total of 361 participants were selected using a stratified random sampling method, with the sample size determined based on the Morgan and Krejcie sample size table to ensure sufficient statistical power for the analyses. Participants voluntarily completed a battery of self-report questionnaires, including the Deliberate Self-Harm Inventory (DSHI), the Childhood Trauma Questionnaire–Short Form (CTQ-SF), and the Difficulties in Emotion Regulation Scale (DERS). Inclusion criteria consisted of being aged between 15 and 25 years, fluent in Mandarin, and willing to provide informed consent. The study was conducted in accordance with ethical

standards, and all participants were assured of confidentiality and anonymity throughout the research process.

2.2. Measures

2.2.1. Self-Harm

To measure the dependent variable of self-harming behaviors, the present study used the Deliberate Self-Harm Inventory (DSHI), developed by Gratz in 2001. The DSHI is a 17-item self-report instrument designed to assess the frequency and type of deliberate self-injurious behaviors without suicidal intent. Respondents indicate whether they have ever engaged in specific self-harming behaviors (e.g., cutting, burning, carving) and, if so, how often, when it last occurred, and whether medical treatment was required. Each behavior is scored dichotomously (yes/no), and cumulative frequency scores can be calculated for severity analysis. The DSHI has demonstrated high internal consistency (Cronbach's alpha above 0.80) and strong test-retest reliability. Its construct and convergent validity have been confirmed across clinical and non-clinical populations in various studies, making it a widely accepted tool for measuring non-suicidal self-injury (Hartas, 2024; Iveson et al., 2024; Janiri et al., 2024).

2.2.2. Childhood Trauma

Childhood trauma was assessed using the Childhood Trauma Questionnaire – Short Form (CTQ-SF), developed by Bernstein and Fink in 1998. This 28-item self-report inventory evaluates experiences of abuse and neglect during childhood and adolescence. It consists of five subscales: Emotional Abuse, Physical Abuse, Sexual Abuse, Emotional Neglect, and Physical Neglect, with each subscale containing five items. Three additional items function as a minimization/denial scale to detect potential underreporting. Each item is rated on a 5-point Likert scale ranging from 1 (never true) to 5 (very often true), with higher scores indicating more severe trauma exposure. The CTQ-SF has been extensively validated, showing high internal consistency (subscale alphas typically above 0.80), excellent test-retest reliability, and strong construct and criterion validity across diverse populations and cultural contexts (Iveson et al., 2024; Janiri et al., 2024; Younas et al., 2023).

2.2.3. Emotion Dysregulation

To evaluate emotion dysregulation, the Difficulties in Emotion Regulation Scale (DERS) was employed. Developed by Gratz and Roemer in 2004, the DERS is a 36-item self-report measure assessing multiple aspects of emotion regulation difficulties. It comprises six subscales: Nonacceptance of Emotional Responses, Difficulties Engaging in Goal-Directed Behavior, Impulse Control Difficulties, Lack of Emotional Awareness, Limited Access to Emotion Regulation Strategies, and Lack of Emotional Clarity. Items are rated on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always), with higher scores indicating greater difficulties in emotion regulation. The DERS has demonstrated excellent internal consistency (overall Cronbach's alpha > 0.90), strong test-retest reliability, and robust construct and convergent validity in both clinical and non-clinical samples. Its multidimensional structure makes it a reliable tool for capturing the complexity of emotion dysregulation (Kun et al., 2022; Shahmoradi et al., 2021).

2.3. Data Analysis

Data analysis was performed in two stages using SPSS version 27 and AMOS version 21. Initially, descriptive statistics were calculated to assess the central tendencies and variability of the variables. Pearson correlation coefficients were then computed to examine the bivariate relationships between the dependent variable (self-harm) and the independent variables (childhood trauma and emotion dysregulation). Subsequently, structural equation modeling (SEM) was conducted using AMOS-21 to test the hypothesized mediation model, in which emotion dysregulation mediates the effect of childhood trauma on self-harming behaviors. Model fit was evaluated using standard indices, including the chi-square test, Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). Significance of the mediation paths was further assessed using bootstrap procedures with 2,000 resamples to ensure the robustness of indirect effect estimates.

3. Findings and Results

The sample consisted of 449 participants from India. Among them, 262 participants (58.35%) identified as female and 187 participants (41.65%) as male. In terms of age

distribution, 143 participants (31.84%) were between 16 and 18 years old, 176 participants (39.20%) were between 19 and 21 years old, and 130 participants (28.95%) were aged 22 to 25. Regarding educational status, 192 participants (42.76%) were in secondary school, 168 participants (37.42%) were

enrolled in undergraduate programs, and 89 participants (19.82%) were pursuing postgraduate education. These demographic characteristics reflect a diverse sample of adolescents and young adults across educational levels and age groups.

Table 1

Descriptive Statistics for Study Variables (N = 361)

Variable	Mean (M)	Standard Deviation (SD)
Childhood Trauma	62.87	14.46
Emotion Dysregulation	94.21	16.08
Self-Harming Behavior	9.38	4.73

The descriptive statistics presented in Table 1 indicate that the participants reported moderate to high levels of childhood trauma (M = 62.87, SD = 14.46), relatively elevated levels of emotion dysregulation (M = 94.21, SD = 16.08), and a moderate level of self-harming behavior (M = 9.38, SD = 4.73). The variability in responses suggests a broad range of emotional and behavioral outcomes across the sample.

Prior to conducting the main analyses, assumptions for Pearson correlation and Structural Equation Modeling (SEM) were examined and met. The data showed normal distribution as indicated by skewness values ranging from -

0.412 to 0.298 and kurtosis values ranging from -0.621 to 0.457, all within the acceptable range of ± 1 . Multicollinearity was not a concern, as variance inflation factor (VIF) values ranged from 1.12 to 1.36, below the critical value of 5. Linearity and homoscedasticity were assessed using scatterplots, which revealed no significant deviations. Additionally, Mahalanobis distance values were used to detect multivariate outliers; no cases exceeded the critical chi-square value ($\chi^2 = 16.27$, $df = 3$, $p < .001$), confirming the absence of extreme outliers. These results confirmed that the data met all necessary assumptions for subsequent parametric analyses.

Table 2

Pearson Correlation Coefficients Between Variables (N = 361)

Variable	1	2	3
1. Childhood Trauma	—		
2. Emotion Dysregulation	.61** (p < .001)	—	
3. Self-Harming Behavior	.48** (p < .001)	.56** (p < .001)	—

As shown in Table 2, childhood trauma was significantly positively correlated with emotion dysregulation ($r = .61$, $p < .001$) and self-harming behavior ($r = .48$, $p < .001$). Moreover, emotion dysregulation was also positively

correlated with self-harming behavior ($r = .56$, $p < .001$). These results support the preliminary assumptions of significant interrelations among the core variables of the study.

Table 3

Goodness-of-Fit Indices for the Structural Equation Model

Fit Index	Value	Recommended Criteria
χ^2 (Chi-Square)	114.37	—
df (Degrees of Freedom)	53	—
χ^2/df	2.16	< 3.00
GFI	0.94	> 0.90
AGFI	0.91	> 0.90
CFI	0.96	> 0.95
TLI	0.95	> 0.95
RMSEA	0.056	< 0.08

The structural equation model demonstrated a good fit with the data as shown in Table 3. The chi-square statistic was 114.37 with 53 degrees of freedom, yielding a χ^2/df ratio of 2.16, which is within the acceptable threshold. Other

indices such as the GFI (.94), AGFI (.91), CFI (.96), and TLI (.95) were all above the recommended cutoff values of 0.90 or 0.95. Additionally, the RMSEA was 0.056, indicating a good model fit according to conventional standards.

Table 4

Standardized and Unstandardized Path Coefficients (N = 361)

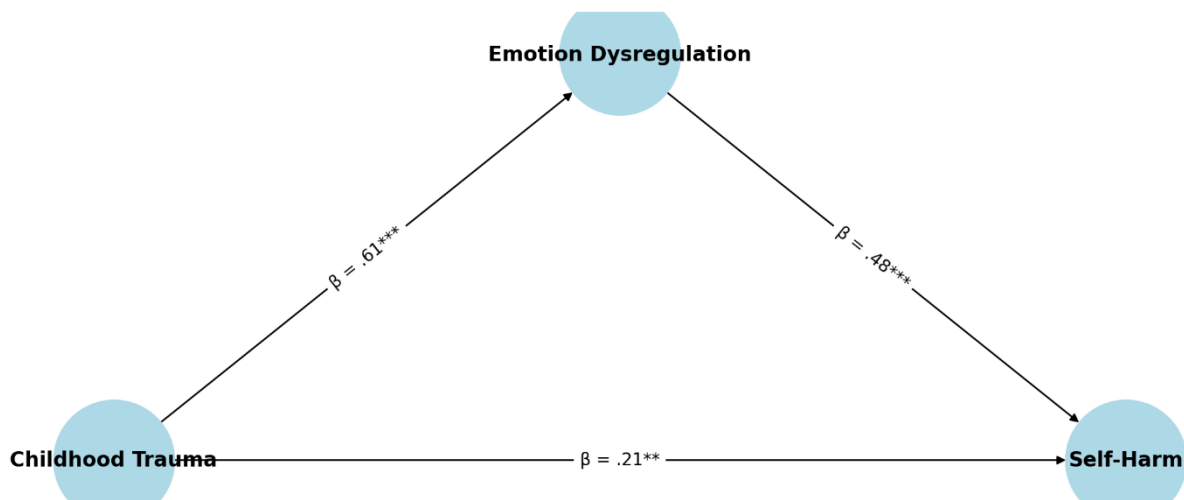
Path	B	S.E	Beta	p
Childhood Trauma → Emotion Dysregulation	0.62	0.05	.61	< .001
Emotion Dysregulation → Self-Harm	0.39	0.04	.48	< .001
Childhood Trauma → Self-Harm (Direct)	0.18	0.06	.21	.003
Childhood Trauma → Self-Harm (Indirect)	0.24	0.03	.29	< .001
Childhood Trauma → Self-Harm (Total)	0.42	0.05	.50	< .001

The path coefficients summarized in Table 4 provide evidence for both direct and indirect effects of childhood trauma on self-harming behavior. Childhood trauma had a significant direct effect on emotion dysregulation ($B = 0.62$, $\beta = .61$, $p < .001$) and a moderate direct effect on self-harm ($B = 0.18$, $\beta = .21$, $p = .003$). Emotion dysregulation significantly predicted self-harming behavior ($B = 0.39$, $\beta =$

$.48$, $p < .001$). The indirect effect of childhood trauma on self-harm through emotion dysregulation was also significant ($B = 0.24$, $\beta = .29$, $p < .001$). The total effect of childhood trauma on self-harm was substantial ($B = 0.42$, $\beta = .50$, $p < .001$), indicating that the mediation pathway via emotion dysregulation is a major contributor to the outcome.

Figure 1

Standardized Total, Direct, and Indirect Effects in the Structural Model



4. Discussion and Conclusion

The present study aimed to explore the mediating role of emotion dysregulation in the relationship between childhood trauma and self-harming behaviors in adolescents and young adults from Taiwan. The results of Pearson correlation analysis revealed significant positive relationships between childhood trauma and both emotion dysregulation and self-harm. Likewise, emotion dysregulation was significantly correlated with self-harming behavior. Furthermore, the

structural equation modeling (SEM) analysis confirmed the hypothesized model, indicating that emotion dysregulation significantly mediated the relationship between childhood trauma and self-harm. These findings provide strong empirical support for the theoretical proposition that early traumatic experiences disrupt emotional regulatory systems, thereby increasing vulnerability to maladaptive coping behaviors such as self-injury.

The significant positive correlation between childhood trauma and self-harming behavior aligns with the extensive body of literature emphasizing the long-term psychological impact of adverse childhood experiences. The current findings mirror those of Ashrafi et al. (2021), who reported a direct and robust link between various forms of childhood trauma and self-harming tendencies among adolescents (Ashrafi et al., 2021). Similarly, Çağlar et al. (2021) found that female university students with a history of childhood trauma exhibited higher rates of self-harming behavior, alongside increased symptoms of depression and dissociation (Çağlar et al., 2021). These results affirm that traumatic experiences in early developmental periods can lead to internal psychological distress that persists into later stages of life and increases susceptibility to self-destructive behaviors. Notably, the types of trauma reported in the current study—including emotional abuse, physical neglect, and sexual abuse—have also been identified as particularly damaging in prior studies (Dhyatmika et al., 2024; Ebrahim et al., 2021; Kuznetsova et al., 2022).

Emotion dysregulation also showed a strong positive association with both childhood trauma and self-harming behavior, serving as a significant mediator between the two. This finding aligns with previous research emphasizing emotion dysregulation as a core transdiagnostic mechanism through which early trauma leads to psychological maladaptation (Shahmoradi et al., 2021; Siegel & Lahav, 2021). The mediating effect found in this study supports the theoretical framework proposed by Dodd et al. (2022), who argued that it is not merely the experience of trauma but the inability to regulate emotional responses to it that leads to severe outcomes like self-harm (Dodd et al., 2022). In this context, our findings are consistent with those of Stagaki et al. (2021), who demonstrated that emotion dysregulation and difficulties with mentalizing mediated the impact of childhood trauma on both self-harm and suicidality (Stagaki et al., 2021). The present study adds to this literature by confirming that such mechanisms hold true in a Taiwanese adolescent and young adult population, thereby extending the cross-cultural applicability of this psychological model.

Our results are also in line with the findings of Choi and Kweon (2023), who identified emotion-focused cognitive mechanisms as mediators in the relationship between attachment trauma and self-injury in female adolescents (Choi & Kweon, 2023). Moreover, Lei et al. (2024) employed network analysis to show that childhood trauma, depression, and self-injury were interconnected through central emotional nodes, particularly those relating to

dysregulation (Lei et al., 2024). These findings reinforce the notion that emotion regulation is a critical factor that links trauma to behavioral manifestations such as self-harm, and it should be prioritized in clinical assessments and therapeutic interventions.

Additional support for the mediating role of emotion dysregulation comes from studies conducted in clinical populations. Liu et al. (2024) found that adolescents diagnosed with major depression and exposed to early trauma were more likely to engage in self-harm, with complex PTSD symptoms—closely related to emotion dysregulation—acting as a mediating factor (Liu et al., 2024). Similarly, Janiri et al. (2024) found that among youths with bipolar disorder, childhood trauma was significantly associated with increased self-harm, independent of mood symptoms (Janiri et al., 2024). These findings suggest that emotion dysregulation may operate independently or synergistically with other psychiatric symptoms to influence self-injurious outcomes. Our findings corroborate this by showing that even in a non-clinical community sample, emotional dysfunction plays a central mediating role.

Trauma stemming from newer and less conventional contexts, such as digital abuse, also appears to influence emotional processing in ways that increase the likelihood of self-harm. Dulawan and Bance (2024) explored the psychological consequences of online sexual exploitation and found significant associations with emotion dysregulation, dissociation, and self-injury (Dulawan & Bance, 2024). Similarly, Ravishankar and Sathiyaseelan (2022) highlighted how early psychological trauma affects one's self-concept and emotional responsiveness, leading to maladaptive behaviors such as self-harm (Ravishankar & Sathiyaseelan, 2022). These emerging findings from diverse trauma contexts emphasize the pervasive impact of disrupted emotional regulation systems.

This study also supports previous literature demonstrating gender-specific and context-specific vulnerabilities. For example, research by fard et al. (2023) confirmed that female adolescents with trauma histories and cognitive distortions were at a higher risk of self-harm, largely due to poor emotional regulation skills (fard et al., 2023). Younas et al. (2023) also found that individuals with clinical depression who reported early trauma showed significantly higher emotion regulation deficits and increased engagement in self-harming behavior (Younas et al., 2023). The current study's sample, drawn from a non-Western setting, mirrors these results and provides valuable

cross-cultural validation. Additionally, Maepa and Ntshalintshali (2020) found that adverse family structures and early trauma in Swaziland were associated with increased risk-taking behavior, including self-harm, again implicating emotion regulation as a key pathway (Maepa & Ntshalintshali, 2020).

Even among adult populations, the long-term effects of early trauma on emotion regulation and behavior remain salient. Ferrajão and Elklit (2020) demonstrated that different types of trauma influence world assumptions and psychological distress through regulatory pathways (Ferrajão & Elklit, 2020). Williams (2019) provided personal reflections linking childhood trauma to professional and emotional dysfunctions later in life, emphasizing the persistent impact of unaddressed emotional dysregulation (Williams, 2019). Warrier and Baron-Cohen (2019) even linked childhood trauma and self-harm to genetic predispositions, indicating that neurodevelopmental and psychological pathways may intersect in complex ways (Warrier & Baron-Cohen, 2019).

Furthermore, broader societal and ecological factors may exacerbate emotional vulnerabilities in trauma-exposed populations. Torgah (2024) illustrated how survivors of child labor in Ghana continued to struggle with emotional regulation and self-harm well into adulthood, further supporting the cross-cultural consistency of these findings (Torgah, 2024). TaşÖren and Gül (2022) similarly found that incarcerated men with childhood abuse histories were more likely to report frequent drug use and self-harm, with psychological symptoms serving as important discriminating factors (TaşÖren & GÜL, 2022). These findings reinforce the importance of examining structural, ecological, and cultural variables alongside individual psychological processes when studying self-harm in trauma-affected populations.

5. Limitations & Suggestions

Despite the valuable insights gained from this study, several limitations should be acknowledged. First, the cross-sectional nature of the research design restricts the ability to make causal inferences regarding the relationships among childhood trauma, emotion dysregulation, and self-harming behavior. Although the structural equation model supports mediation, longitudinal studies are needed to confirm these temporal dynamics. Second, all data were collected through self-report instruments, which may be subject to recall bias, social desirability bias, and underreporting, especially

concerning sensitive topics like trauma and self-injury. Third, while the study involved a substantial sample size, the findings are limited to Taiwanese adolescents and young adults, and cultural factors may influence the expression and regulation of emotion, as well as the interpretation of trauma. Thus, generalizability to other populations may be limited. Finally, the study did not control for psychiatric diagnoses or other confounding variables such as family history of mental illness or socioeconomic status, which could influence the observed relationships.

Future research should employ longitudinal designs to better understand how emotion dysregulation develops over time in the aftermath of childhood trauma and how it eventually leads to self-harming behavior. Incorporating neurobiological or psychophysiological measures of emotion regulation could also provide a more comprehensive picture of the mechanisms involved. Studies should consider gender differences more explicitly, given evidence of differential vulnerability, and explore the role of protective factors such as social support, resilience, and emotion-focused coping skills. Additionally, expanding research into underrepresented and diverse cultural contexts will enrich our understanding of how sociocultural values influence the trauma-regulation-self-harm pathway. Future studies may also benefit from integrating qualitative approaches to capture the lived emotional experiences of trauma survivors.

These findings highlight the importance of early assessment and intervention for emotion dysregulation in individuals with a history of childhood trauma. Clinicians working with adolescents and young adults should be particularly attuned to signs of emotional instability and self-harm, even in the absence of formal psychiatric diagnoses. Integrating trauma-informed care models into school, community, and healthcare settings may help identify at-risk youth and provide them with the tools to manage emotional distress more adaptively. Emotion regulation skills training should be a core component of therapeutic interventions for trauma survivors, especially in adolescence when emotion regulation systems are still developing. Lastly, public mental health policies should prioritize prevention programs that address both childhood trauma and the development of emotional competencies to reduce the incidence of self-harming behavior.

Educators and mental health professionals can also play a key role in supporting families by offering workshops and resources that address the psychological impacts of social media use. Schools can integrate digital literacy into their

curricula, helping students understand the potential emotional and social consequences of excessive online engagement. Moreover, mental health professionals can work with families to identify patterns of digital use that may be detrimental to adolescents' well-being and provide strategies for fostering a healthy balance between online and offline activities.

Lastly, community-based programs can help bridge the gap between digital engagement and real-world socialization by providing adolescents with opportunities to participate in offline activities that promote mental health, such as sports, arts, and volunteer work. By fostering resilience and providing adequate support, families, educators, and mental health professionals can mitigate the negative impacts of social media while empowering adolescents to make informed decisions about their digital lives.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contributed to this article.

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