

Cybervictimization and Non-Suicidal Self-Injury Among Chinese College Students: an Exploration Through the Lens of Experiential Avoidance Model

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Purpose: Non-suicidal self-injury (NSSI) is a growing public health concern among college students, with cybervictimization (CV) emerging as a significant contributing factor. Grounded in the experiential avoidance theory, this study investigates the mediating roles of cognitive fusion and negative emotions in the relationship between CV and NSSI, providing new insights into these key variables.

Methods: A convenience sample of 457 undergraduate students (29% male; mean age 18.36±0.66 years) from two universities in Fujian Province participated in this study. Data were collected using the Cyberbullying Victimization Scale, Cognitive Fusion Questionnaire, Positive and Negative Affect Schedule, and Non-Suicidal Self-Injury Scale. Descriptive statistics and Pearson correlation analysis were conducted using SPSS 25.0, while the mediating effects were analyzed using Process 3.5.

Results: (1) Significant positive correlations were found among CV, cognitive fusion, negative emotions, and NSSI ($p < 0.01$). (2) CV was directly associated with NSSI ($\beta = 0.22, p < 0.001$) and positively predicted both cognitive fusion ($\beta = 0.17, p < 0.001$) and negative emotions ($\beta = 0.15, p < 0.01$). Additionally, cognitive fusion ($\beta = 0.16, p < 0.01$) and negative emotions ($\beta = 0.11, p < 0.05$) significantly predicted NSSI. (3) Mediation analyses revealed that cognitive fusion and negative emotions mediated the CV-NSSI relationship through three pathways: CV→cognitive fusion→NSSI (mediation effect = 0.026), CV→negative emotions→NSSI (mediation effect = 0.02), and CV→cognitive fusion→negative emotions→NSSI (mediation effect = 0.01).

Conclusion: The study confirms that CV influences NSSI indirectly through cognitive fusion and negative emotions, supporting the experiential avoidance model. These findings underscore the importance of addressing cognitive and emotional processes in interventions aimed at reducing NSSI among college students.

Keywords: cybervictimization, non-suicidal self-injury, cognitive fusion, negative emotions

Introduction

Non-suicidal self-injury (NSSI) is typically defined as a deliberate, repetitive, and direct behavior aimed causing harm to one's own body without suicidal intent.¹ These actions, which are socially unacceptable and unrecognized, include behaviors such as cutting, scratching, burning, and hitting oneself.² NSSI is particularly prevalent among adolescents and is increasingly recognized as a significant public health concern.³ Taliaferro et al, in one of the largest adolescent epidemiological studies in the United States ($n = 61,767$), reported an annual prevalence of non-suicidal self-injury (NSSI) of approximately 7.3%.⁴ International studies suggest that around 23% of adolescents have engaged in NSSI at least once in their lifetime.⁵ A meta-analysis of 43 studies, encompassing 253,264 participants, estimated the prevalence of NSSI among Chinese adolescents at 21.9% (95% CI: 17.9–26.0%).⁶ Separately, research by Chen Runsen and Qu

Deyang, published in *The Lancet*, found that 24.7% of Chinese youth reported engaging in self-injury.⁷ In China, epidemiological research consistently shows a higher prevalence of NSSI among adolescents compared to Western countries.⁸

Over the past decade, significant progress has been made in understanding NSSI through research focused on the biological mechanisms,⁹ such as the functioning of the hypothalamic-pituitary-adrenal (HPA) axis and exosomes,^{10,11} as well as the identification of associated risk factors and biomarkers.^{12,13} These studies have substantially deepened our understanding of NSSI. The behavior has been linked to various adverse factors, including familial alcohol and drug abuse, exposure to violence, suicidal ideation,¹⁴ and psychological challenges such as difficulties in emotional expression, impaired emotional regulation, a heightened sense of urgency, and increased impulsivity.^{15–17} Although many individuals who engage in NSSI do not intend to commit suicide, their risk of future suicidal behavior is significantly elevated.¹⁸ Research has identified a 7.7% comorbidity rate between self-injury and suicide, further underscoring NSSI as a critical predictor of suicide risk.¹⁹ Additionally, recent studies have observed an increase in NSSI incidents among college students, highlighting the urgent need to address this behavior as a serious mental health concern within this population.^{20,21}

The proliferation of digital media and online interactions among university students in China has complexly intertwined with the phenomenon of non-suicidal self-injury (NSSI).²² According to the latest statistics, China's internet user base has reached 1.092 billion, with young users aged 10–29 comprising nearly 30% of this total (Data from the 53rd Statistical Report on Internet Development in China). This young demographic's active participation in the digital world directly impacts their mental health status. Cybervictimization (CV), a prominent issue of the digital age, has particularly severe effects on adolescents and young adults. Research by Huang et al²³ indicates that 64.32% of Chinese students aged 15 to 25 have experienced cyberbullying, while 25.98% admit to having bullied others online, such as expressing hostility on social media and in online gaming environments. Furthermore, a study by Zhu et al^{24,25} highlights that the prevalence of cyberbullying places China fourth globally, with a victimization rate of 44.5%.

CV represents a distressing experience of deliberate and repeated harassment encountered through electronic or digital media, where victims often find it challenging to protect themselves.^{26–28} Research indicates that approximately 10–45% of adolescents have experienced such harassment.²⁹ Victims may face various effects, including anxiety, depression, substance misuse, physical symptoms, self-harm, and in extreme cases, suicidal behavior.³⁰ Among these impacts, NSSI has garnered significant attention in recent years.³¹ Although the link between CV and NSSI has been established, the theoretical underpinnings of this relationship have not been fully explored. This theoretical gap limits a comprehensive understanding of and effective interventions for self-harming behaviors among adolescents.

The introduction of the Experiential Avoidance Model (EAM) offers a promising framework for investigating the origins of NSSI.^{32,33} EAM suggests that individuals who resist confronting their experiences of cyber victimization may tend to engage in NSSI as a means to escape or alleviate the unpleasant emotions and psychological distress that arise.³² Based on this perspective, the current study aims to explore how CV facilitates NSSI behaviors through the lens of EAM.

Theoretical Background and Hypotheses

Experiential Avoidance Model

In this study, NSSI is conceptualized not simply as an individual issue, but as a phenomenon intricately linked to societal conditions and online interactions.³⁴ EAM serves as the primary theoretical framework, offering insights into why adolescents and university students might engage in NSSI as a coping mechanism.³³ According to the EAM, when individuals face distressing internal experiences, such as negative emotions or traumatic memories, and lack effective emotion regulation strategies, they may resort to avoiding these unpleasant experiences to alleviate emotional distress.³⁵ In the context of cybervictimization, this avoidance behavior becomes particularly salient, with individuals potentially turning to NSSI as a means of temporarily escaping the intense negative emotions triggered by cybervictimization. Although this strategy may provide short-term psychological relief, it fails to address the underlying issues and may lead to more severe psychological and behavioral consequences. This study aims to explore the psychological mechanisms through which CV influences NSSI, using the EAM as a theoretical lens. The findings are intended to inform the development of more effective intervention strategies. By shedding light on the underlying processes, this research not

only fills a significant gap in the current literature but also provides crucial scientific insights that could guide future mental health interventions, with substantial practical implications.

Cognitive Fusion as a Mediator

Cognitive fusion is a concept that is often associated with acceptance and commitment therapy (ACT), a form of psychotherapy.³⁶ It refers to a state where one's behavior is excessively governed by their thoughts, causing them to become ensnared by their own cognitions and lose touch with the present reality.³⁷ Recent research has delved deeply into the intricate relationship between cyberbullying and cognitive fusion.³⁸ Findings indicate that victims of cyberbullying, especially those closely aligned with their online identities or affiliated groups, experience heightened psychological distress, with their odds of suffering from depression being nearly threefold compared to non-victims.³⁹ Acts of cyberbullying can propel individuals into a deeper state of cognitive fusion, where they may internalize and endorse more negative information.²⁶ This leads to potential entanglement with thoughts like "I appear foolish" and "this pain will never cease", viewing these notions as truths, characteristic of cognitive fusion. Consequently, this amplified sense of identity fusion intensifies their emotional vulnerability to online threats, establishing a vicious cycle of increased susceptibility and exacerbated emotional responses to cyberbullying incidents.

The Experiential Avoidance Model (EAM) provides additional theoretical support for understanding the relationship between cognitive fusion and NSSI. According to the EAM, when individuals face distressing internal experiences, such as negative emotions or traumatic memories, and lack effective emotion regulation strategies, they may resort to avoiding these unpleasant experiences to temporarily alleviate emotional distress. For victims of cyberbullying, cognitive fusion may lead them to over-identify with these painful emotional experiences,⁴⁰ driving them to engage in behaviors like NSSI to escape these emotions rather than confront and process them. The EAM explains why such individuals are more prone to falling into this behavioral pattern, particularly when confronted with overwhelming negative thoughts.

Negative Emotions as a Mediator

Research has documented that tension-inducing stimuli, such as cybervictimization, can lead to negative emotions, including anxiety, anger, and depression. Individuals who lacking effective emotional regulation strategies often struggle to manage these emotions.⁴¹ Consequently, they might employ maladaptive methods to alleviate their feelings, leading to problematic behaviors. Empirical studies have also reported that individuals might resort to external aggression or self-harm as coping mechanisms when faced with these emotions.⁴² Moreover, persistent negative emotions can further predispose individuals to psychological disorders, such as anxiety, depression, and affective disturbances.⁴³

Drawing from the EAM, it is postulated that negative emotions triggered by distressing events can readily pave the way for NSSI.³⁶ Such acts of self-injury serve as a form of negative reinforcement, alleviating these distressing emotions. Experiencing cybervictimization represents a profound stressor. The combination of this triggering event and the ensuing surge of negative emotions frequently emerges as a significant driver behind NSSI in adolescents.⁴⁴

Cognitive Fusion and Negative Emotions as a Mediator

Cybervictimization (CV) can influence non-suicidal self-injury (NSSI) both directly or indirectly through various factors. The EAM underscores the role of emotional regulation in explaining the relationship between cognitive fusion, negative emotions, and NSSI in adolescents who have experienced online bullying.³³ According to the experiential avoidance perspective on self-injury, individuals lacking robust emotional coping strategies might resort to avoidance behaviors, such as self-injury, to quickly alleviate the negative feelings triggered by distressing stimuli.³²

When adolescents face distressing events like online bullying, they may struggle to find resolution due to their limited personal resources or experience. This struggle can lead to cognitive fusion, where they become entangled in negative automatic thoughts, which, in turn, can precipitate or intensify adverse emotional responses. Given that cybervictimization is inherently distressing, it often exacerbates negative emotions. The EAM posits that individuals are likely to engage in behaviors aimed at mitigating these negative emotions, with self-injury being one potential method to escape or lessen the emotional pain.^{33,45}

Existing research highlights a link between cognitive fusion and heightened negative emotions. Individuals with a strong tendency toward cognitive fusion are more prone to associate stimuli with distressing experience, leading to negative emotional states.^{26,40} The EAM suggests that these stimuli-induced negative emotions may drive individuals to engage in self-injury as a means of escape. Drawing from these insights, it is plausible that CV influences NSSI through the interplay of cognitive fusion and negative emotions.

Based on previous inferences and evidence, CV exacerbates the experience of negative emotions through cognitive fusion, thereby increasing the likelihood of NSSI. Accordingly, this study aims to test a sequential mediation model. Drawing on the EAM, we propose the following hypotheses: First, Hypothesis 1 (H1) posits that there is a direct positive correlation between CV and NSSI, suggesting that adolescents who experience CV are more likely to engage in self-injurious behaviors as a means of coping with ongoing cyber-related stress and emotional distress. Second, Hypothesis 2 (H2) suggests that cognitive fusion mediates the relationship between CV and NSSI, indicating that CV influences NSSI through cognitive fusion. Additionally, Hypothesis 3 (H3) proposes that negative emotions mediate the relationship between CV and NSSI, with CV-induced negative emotions being a significant factor in the occurrence of NSSI. Finally, Hypothesis 4 (H4) posits that CV influences NSSI through the combined mediating effects of cognitive fusion and negative emotions, wherein CV first triggers cognitive fusion, which then intensifies negative emotions, ultimately leading to NSSI.

The Current Study

While numerous empirical studies indicate a connection between cybervictimization (CV) and non-suicidal self-injury (NSSI),^{31,46,47} they often lack depth. Specifically, there's a noticeable research gap concerning the intricate interplay between CV, NSSI, cognitive fusion, and negative emotions. This study is therefore propelled by two primary objectives. First, we aspire to unravel the underlying mechanisms linking CV to NSSI, offering insights crucial for NSSI prevention. Second, in light of previous studies and their findings, we intend to ascertain whether cognitive fusion and negative emotions serve as parallel or multiple mediators.

Drawing from the EAM and extant empirical data, our propositions are as follows: (a) CV has a direct, positive correlation with NSSI; (b) Both cognitive fusion and negative emotions individually mediate this relationship; and (c) In tandem, cognitive fusion and negative emotions act as chain-mediators. All these assumptions are graphically represented in [Figure 1](#).

Methods

Participants and Procedures

This study employed a convenience sampling method to recruit 475 college students from 10 classes across two universities in Fujian Province for an online questionnaire survey. The inclusion criteria for participants were: enrollment

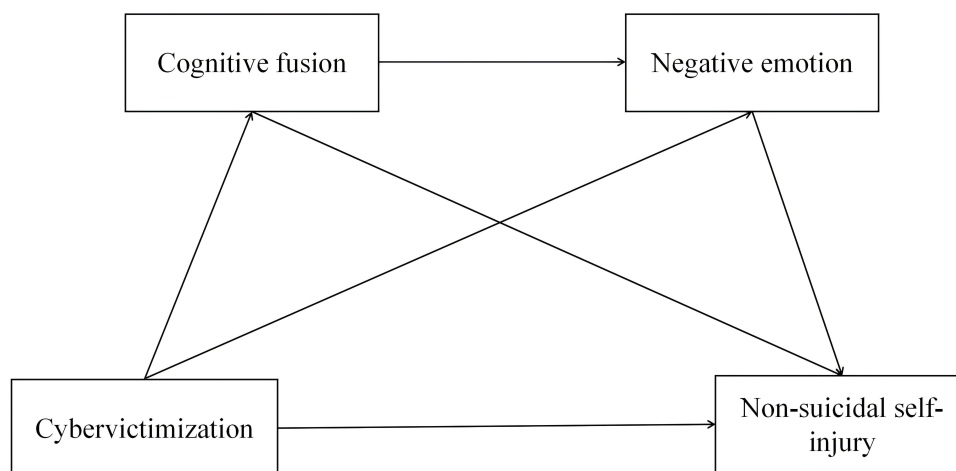


Figure 1 Chain mediation model.

as a full-time student at one of the selected universities, being in the first to third year of study, and a willingness to voluntarily participate in the survey. The universities and classes were chosen based on their availability and accessibility to the researchers. After excluding invalid questionnaires such as regular filling and incomplete answers, 457 questionnaires were effectively collected (with a recovery rate of 96.21%). The average age of all participants was 18.36 years old ($SD=0.66$), ranging from 16 to 20 years old, with 132 males and 325 females.

Before participating in the online survey, all participants are instructed and informed that their participation is voluntary, and their privacy will be protected. This study was reviewed and approved by the Ethics Committee of Fujian Polytechnic Normal University (FJRT2022-019). All procedures were conducted in accordance with governmental regulations, laboratory policies, and the 1964 Helsinki Declaration.

Measurements in This Study

CV was evaluated using the cyberbullying victimization scale based on Willard's research.⁴⁸ This scale measures the frequency of online bullying experienced by participants during their use of the internet in the past six months, and includes a total of six items. All items are rated on a 4-point Likert scale from 1 (never before) to 4 (greater than five times). The higher the score, the more severe the degree of online bullying an individual has suffered. In this survey, the Cronbach's alpha value was 0.7.

The Cognitive Fusion Questionnaire (CFQ) was developed by Gillanders et al in 2010, and the Chinese revised version was used in this study.⁴⁹ This scale, designed as a unidimensional measure, comprises a total of 9 items. It utilizes the Likert 7-point scoring system, where scores range from 1 (indicating "obvious non-conformity") to 7 (signifying "obvious conformity"). The higher the score, the more obvious the cognitive fusion tendency of the subjects. Previous studies have shown that this scale has good reliability in both the general population and psychiatric patients.^{37,50} In this study, we detected a high Cronbach's alpha coefficient (0.90).

In the present study, Negative emotions were measured using PANAS (Positive Affect, Negative Affect Scales) from Watson et al.⁵¹ The main survey focuses on the psychological satisfaction level of the general population, consisting of a set of yes/no questions describing the feelings of "the past few weeks", with a total of 10 items (such as "I feel restless in the past few weeks"). Participants who answered "no" to positive emotional items or "yes" to negative emotional items score "1" for negative emotions. The higher the score, the more negative an individual's negative emotions are. In this study, the Cronbach's alpha value was 0.60.

NSSI was assessed using an 10-item Non Suicidal Self Injury Scale which displayed adaptive reliability and validity in previous studies.⁵²⁻⁵⁴ The scale was used to assess the frequency of intentional harm to oneself by adolescents but without suicidal intent during the past three months. Each item was evaluated using a 4-point Likert scale, where 1 corresponds to "never" and 4 signifies "5 times or more". High scores from the scale indicated the presence of more frequent non suicidal self injury behaviors. The Cronbach's alpha of the scale was 0.7 in this study.

Statistical Analysis

Data management and analysis were conducted using SPSS (version 25) and the PROCESS macro developed by Hayes (version 3.5). Firstly, descriptive statistics, partial correlation analysis, and internal consistency reliability analysis were performed using SPSS. Secondly, mediation effects were analyzed using the PROCESS macro (model 6),⁵⁵ with the significance of these effects tested using the bias-corrected percentile Bootstrap method (with a bootstrap sample size of 5000). Using gender and age as control variables, we examined the chain mediating effects of cognitive fusion and negative emotions on the relationship between cybervictimization and non-suicidal self-injury. If the 95% confidence interval of the bootstrap does not include 0, it indicates that the mediating effects are statistically significant.

Results

Common Method Bias Test

Given that this study collected data through self-report measures, there is a potential concern regarding common method bias. To mitigate this bias, we followed the recommendations of scholars by implementing measures such as ensuring

anonymity during data collection.⁵⁶ To further enhance the rigor of the study, Harman's single-factor test was conducted prior to data analysis to statistically control for common method bias.⁵⁷ The results showed that 8 principal components had eigenvalues greater than 1, and the first principal component explained a variance of 20.96%, which was below the 40% critical criterion. This indicates that there is no significant common method bias in the data collected in this self-report study.

Analysis of Descriptive Statistics and Correlations

Table 1 presents the average values, standard deviations, and Pearson correlation coefficients for the study variables. The results indicate significant positive correlations among CV, NSSI, cognitive fusion, and negative emotions, making the variables suitable for further mediation analysis. Additionally, gender was significantly correlated with both CV and NSSI, so these demographic variables were controlled for in subsequent analyses.

Analysis of Covariance

To control for the potential confounding effects of gender and age on the relationship between CV and NSSI, an analysis of covariance (ANCOVA) was performed. The analysis showed that gender and age did not have a significant effect on NSSI, while CV had a significant effect. The detailed results are presented in Table 2. Based on these findings, we proceeded with the mediation analysis, which also controlled for gender and age.

Mediating Effects of Cognitive Fusion and Negative Emotions Between CV and NSSI

Gender (female=0, male=1) and age were controlled for in PROCESS, and Model 6 was selected. The results of the chain mediation model were developed as shown in Table 3.

Regression analysis results show that CV positively and significantly predicted negative emotions ($\beta=0.15$, $p<0.01$) and cognitive fusion ($\beta=0.17$, $p<0.001$) and NSSI ($\beta=0.22$, $p<0.001$), supporting hypothesis H1. Cognitive fusion positively predicted NSSI ($\beta=0.16$, $p<0.01$) and negative emotions ($\beta=0.38$, $p<0.001$). Negative emotions significantly and positively predicted NSSI ($\beta=0.11$, $p<0.05$) (see Figure 2).

Further analysis of the mediating effect, as indicated in Table 3, revealed that the Bootstrap 95% confidence interval for the cumulative indirect effects of cognitive fusion and negative emotions in the impact of cognitive vulnerability

Table 1 Descriptive Statistics and Correlations for All Variables (n=457)

	M	SD	1	2	3	4	5	6
1 Gender ^a	—	—	1					
2 Age	18.36	0.66	-0.08	1				
3 Cybervictimization	0.77	1.50	-0.26**	0.04	1			
4 Non-suicidal self-injury	10.48	1.43	-0.11*	0.02	0.24**	1		
5 Cognitive Fusion	27.27	8.63	-0.01	0.01	0.16**	0.23**	1	
6 Negative Emotion	0.58	0.94	0.02	0.04	0.19**	0.21**	0.40**	1

Notes: Gender^a is the dummy variable, Female = 0, Male = 1; * $p<0.05$, ** $p<0.01$.

Abbreviation: SD, Standard Deviations;

Table 2 ANCOVA Results for NSSI

Variables	F	p	Partial Eta Squared
Cybervictimization	9.18	<0.001	0.171
Gender ^a	2.54	0.112	0.006
Age	0.03	0.855	0.000

Notes: Gender^a is the dummy variable, Female = 0, Male = 1.

Abbreviation: NSSI, non-suicidal self-injury.

Table 3 The Regression Equation of Chain Mediation

Regression Equation (n=457)		Fitting Index			Coefficient and Significance	
Outcome variables	Predictor variables	R	R ²	F	β	t
Non-suicidal self-injury	Gender	0.24	0.06	9.51***	-0.05	-1.10
	Age				0.01	0.14
	Cybervictimization				0.22	4.74***
Cognitive Fusion	Gender	0.17	0.03	4.40**	0.03	0.73
	Age				0.00	0.08
	Cybervictimization				0.17	3.62***
Negative Emotions	Gender	0.43	0.18	25.14***	0.07	1.56
	Age				0.03	0.80
	Cybervictimization				0.15	3.25**
	Cognitive Fusion				0.38	8.75***
Non-suicidal self-injury	Gender	0.33	0.11	10.82***	-0.07	-1.43
	Age				0.00	0.04
	Cybervictimization				0.17	3.66***
	Cognitive Fusion				0.16	3.17**
	Negative Emotion				0.11	2.27*

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; All variables in the model (excluding gender and age) were standardized and included in the regression equation.

(CV) on non-suicidal self-injury (NSSI) ranged from 0.02 to 0.08, excluded 0. This indicates that cognitive fusion and negative emotions mediate the relationship between CV and NSSI. The mediation analysis, presented in Table 4 and Figure 2, shows that the mediation effect value of 0.048, accounting for 22.53% of the total effect of CV on NSSI.

Specifically, the mediation effect comprises indirect effects through three pathways. First, the mediating effect of cognitive fusion between CV and NSSI among college students was significant (mediating effect value of 0.026, $p < 0.01$, 95% CI = [0.01, 0.05]), supporting hypothesis H2. Second, there was a significant mediating effect of negative emotions between CV and NSSI (mediating effect value of 0.02, $p < 0.01$, 95% CI = [0.00, 0.04]), supporting hypothesis H3. Finally, the chain mediating effect of cognitive fusion and negative emotions between CV and NSSI was significant (mediating effect value of 0.01, $p < 0.01$, 95% CI = [0.00, 0.02]), supporting hypothesis H4.

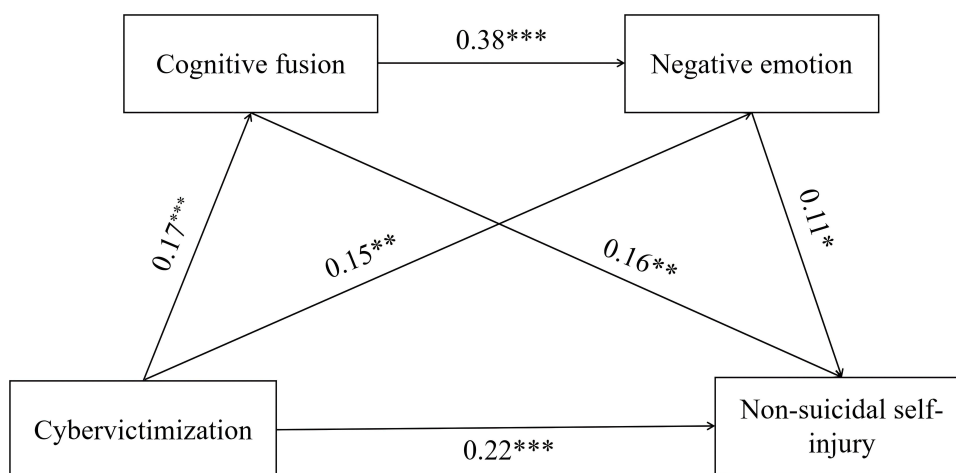


Figure 2 Pathway coefficients of chain mediation model.
Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4 Bootstrap Analysis of the Mediation Effect Test

	Effect	Boot SE	BootLLCI	BootULCI	Relative Mediation Effect
Total Indirect effect	0.05	0.01	0.02	0.08	22.53%
CV→cognitive fusion→NSSI;	0.03	0.01	0.01	0.05	12.03%
CV→negative emotions→NSSI	0.02	0.01	0.00	0.04	7.23%
CV→cognitive fusion→negative emotions→NSSI	0.01	0.001	0.00	0.02	3.26%

Abbreviations: CV, cybervictimization; NSSI, non-suicidal self-injury.

Discussion

In this study, we found that cybervictimization (CV) has a significant positive predictive effect on non-suicidal self-injury (NSSI), with a chain mediation effect observed between cognitive fusion and negative emotions. Specifically, university students who experience cybervictimization are more likely to exhibit cognitive fusion, which subsequently leads to increased negative emotions, making them more prone to engaging in NSSI. This finding partially explains the underlying mechanism through which CV influences NSSI.

CV and NSSI

This study demonstrates a significant positive correlation between CV and NSSI, indicating that CV directly contributes to the occurrence of NSSI. Adolescents who experience cyberbullying often endure intense emotional distress and psychological pressure, and in the absence of effective coping mechanisms, they may turn to self-injury as a way to alleviate their suffering. This finding supports our initial hypothesis (H1) and is consistent with existing literature. For example, Lin et al³¹ suggested that CV indirectly influences NSSI behaviors by weakening the protective role of self-esteem, with peer attachment acting as a moderating factor that can either mitigate or exacerbate the effects of cybervictimization on NSSI. Zhu et al⁴⁷ also provided evidence that anxiety symptoms mediate the link between CV and NSSI, with self-control moderating this relationship by reducing the negative effects of cybervictimization. Similarly, Wang et al⁵⁸ found that negative emotions mediate the relationship between CV and NSSI, while protective factors such as family support or school connectedness can buffer against this negative impact. Additionally, Liu et al⁵⁹ indicated that depressive symptoms mediate the CV-NSSI relationship, with school connectedness serving as a buffer to lessen the negative impact of CV. These studies collectively underscore the complexity and pervasiveness of CV's impact on NSSI, further validating our hypothesis that CV increases the likelihood of NSSI.

Independent Mediating Effect of Cognitive Fusion and Negative Emotions

This study elucidates the independent mediating roles of cognitive fusion and negative emotions between CV and NSSI, thereby supporting Hypotheses H2 and H3.

CV heightens the risk of NSSI by increasing levels of cognitive fusion, a phenomenon often marked by psychological inflexibility.⁶⁰ Existing literature underscores a strong association between psychological inflexibility and both psychopathology and negative health outcomes.⁶¹ The Experiential Avoidance Model (EAM) provides a robust theoretical framework for understanding this process. According to the EAM, the issues stem not from the content of cognition itself but from the maladaptive relationship individuals develop with their cognitive processes, leading to problematic behaviors.⁶²

During episodes of cognitive fusion, individuals tend to overly identify with their thoughts, perceiving them as accurate reflections of reality, and act upon them without critically evaluating their validity. This is particularly concerning in the context of college students, who, with their capacity for abstract reasoning,⁶³ may confuse the rhetoric of online bullying with tangible reality, falling into harmful automatic thought patterns. Cyberbullying frequently elicits a range of negative emotions in victims, from shame and isolation to profound helplessness. Persistent psychological distress can lead victims to develop negative self-concepts, such as "I am a failure" or "No one values me", deeply affecting their self-perception. These negative emotions and harmful self-concepts may drive victims to adopt maladaptive coping mechanisms, such as self-injury. The EAM helps to explain this behavior, aligning with our study's findings

that some victims may resort to self-injury as a means to deflect or alleviate the emotional and psychological burdens they face.

Moreover, negative emotions independently mediate the relationship between CV and NSSI, corroborating Hypothesis H3 and aligning with earlier research findings.^{58,64} Individuals frequently encounter negative stimuli in their daily lives, particularly in interpersonal relationships, where experiences such as online bullying, abuse, or neglect serve as significant stressors. These stressors not only generate negative emotions but also intensify feelings of hurt, potentially leading to maladaptive self-harm behaviors.

Building on the EAM, our research suggests that NSSI often originates in situations that evoke strong negative emotions. In such instances, individuals might use self-injury as a means to escape or alleviate their distress. The immediate effect often includes a reduction in negative feelings and a temporary sense of relief, highlighting that self-injury can be a tactic for emotional regulation.⁶⁵ However, while NSSI may offer short-term respite from emotional pain, it is not a sustainable solution for managing emotional challenges. Prior research indicates that, over time, NSSI and negative emotions can form a feedback loop: if NSSI effectively diminishes the adverse emotions stemming from sustained cyberbullying, these emotions and NSSI can become intertwined.⁶⁶ This cycle can propel individuals toward self-harm whenever they confront negative emotions.

The Chain Mediating Effects of Cognitive Fusion and Negative Emotions

This study corroborates hypothesis 4, emphasizing the sequential mediating roles of cognitive fusion and negative emotions between CV and NSSI. Such findings underscore the intrinsic link between cognitive fusion and negative emotions, aligning with prior research.⁴⁰ Essentially, CV amplifies the propensity for self-harm, a consequence intensified by the interplay of cognitive fusion and negative emotions. This insight not only sheds light on the mechanisms through which CV influences adolescent self-harm but also reinforces the empirical foundation of the EAM.³³ To elaborate, college students subjected to cyberbullying tend to experience cognitive fusion, leading to heightened negative emotions and a subsequent increase in NSSI occurrences. A deeper cognitive fusion correlates with more pervasive negative emotions, while diminished fusion suggests the presence of positive feelings—a notion mirrored in Plonsker et al, findings.⁶⁷ From the EAM's vantage point, individuals recently subjected to online bullying grapple with the adverse stimulus and lean towards evading unsettling internal experiences. These experiences might encompass negative automated thoughts or a cascade of emotions stemming from such thinking. Given the lack of conventional outlets for release, individuals may resort to NSSI as a fleeting escape from their internal turmoil.

Implications

This study advances our understanding of the relationship between CV and NSSI through the lens of the experiential avoidance model. By identifying cognitive fusion and negative emotions as key mediators in this relationship, the research underscores the significance of experiential avoidance processes in explaining how CV leads to NSSI. According to the EAM, individuals who experience distressing thoughts and emotions may engage in behaviors, such as NSSI, as a maladaptive attempt to avoid or escape these internal experiences. The study contributes to the theoretical literature by demonstrating that cognitive fusion—where individuals become entangled with their thoughts—and heightened negative emotions can serve as a chain of mediators, intensifying the risk of NSSI in the context of CV. This finding emphasizes the importance of addressing both cognitive and emotional factors within this theoretical framework to effectively mitigate the harmful effects of cyber victimization on mental health.

From a practical standpoint, the study underscores the necessity for innovative educational strategies to mitigate the impact of CV on NSSI. Educational programs should prioritize the development of advanced emotion regulation techniques, such as biofeedback and virtual reality simulations, to provide students with interactive and immersive methods for managing their emotional responses to CV. Incorporating narrative therapy and digital storytelling into the curriculum can offer students constructive ways to reframe their experiences, thereby reducing the risk of cognitive fusion and subsequent NSSI. Moreover, expanding cyber safety education to include comprehensive digital citizenship programs will promote a positive online culture and encourage ethical online interactions.

To enhance support systems within educational institutions, the study recommends the implementation of peer mentoring programs where trained students can provide emotional support and guidance. This approach can foster a supportive community and improve empathy and understanding of mental health challenges among peers. Additionally, expanding training for educators and student leaders to include modules on advanced psychological first aid and emotional intelligence will better equip them to respond effectively to mental health crises. The adoption of digital platforms for anonymous feedback is also suggested, allowing institutions to dynamically adjust their strategies based on real-time student input and ongoing research. These platforms ensure that support services remain responsive and effective, ultimately contributing to the overall well-being and academic success of students.

Limitations

This study has several limitations that should be considered when interpreting the findings. First, the reliance on self-reported data for all variables may introduce recall bias, potentially affecting the accuracy of the responses. Although no significant methodological biases were identified in this study, future research should incorporate multiple data sources, such as observational or physiological measures, to enhance the robustness and replicability of the results. Second, the cross-sectional design of this study limits the ability to draw definitive causal inferences between the variables. The relationships among CV, cognitive fusion, negative emotions, and NSSI may be bidirectional, complicating the interpretation of causality. Longitudinal research is required to elucidate these causal pathways and confirm the directionality of these relationships. Lastly, the findings are based exclusively on a sample of Chinese university students, which may limit their generalizability. It is crucial for future studies to validate these results using samples from more diverse populations and cultural contexts.

Conclusion

The present study investigated the association between cybervictimization (CV) and non-suicidal self-injury (NSSI) among college students through the construction of a chain-mediated model. This research has significant practical implications for addressing the prevalent issue of self-injurious behaviors among college students by identifying specific cognitive and emotional processes that can be targeted in prevention and intervention strategies. Specifically, the findings suggest that interventions aimed at reducing cognitive fusion and managing negative emotions could effectively mitigate the risk of NSSI in students experiencing cybervictimization.

Furthermore, the study contributes to the theoretical enrichment of the Experiential Avoidance Model (EAM) by demonstrating the roles of cognitive fusion and negative emotions as key mediators in the CV-NSSI relationship. The identification of a significant chained mediating pathway enhances our understanding of the complex, intrinsic interactions between CV and NSSI. This deeper understanding informs the development of more targeted and effective NSSI prevention and intervention strategies, which are critical for reducing the incidence of self-injurious behaviors in the college student population.

Data Sharing Statement

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate

The study was approved by the Ethics Committee of Fujian Polytechnic Normal University and all methods were complied with the Declaration of Helsinki. Additionally, adult participants, parents, school officials, and principals granted their informed consent. Participants were assured of the anonymity and confidentiality of their questionnaire responses, with the data being utilized exclusively for academic research purposes. All methods were carried out in accordance with relevant guidelines and regulations.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors declare no competing interests.

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