

The predictor of non-suicidal self-injury behavior among adolescents: a cross-sectional study

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ABSTRACT

Introduction: Non-Suicidal Self-Injury (NSSI) among adolescents is a prevalent issue in Indonesia. Comprehensive understanding of NSSI is essential for uncovering the factors that trigger and predispose adolescents to such behavior. This knowledge serves as a foundation for crafting targeted nursing interventions to address and mitigate NSSI among this vulnerable population. This study aimed to identify determinant factors contributing to the occurrence of Non-Suicidal Self-Injury behavior in adolescents.

Methods: The study employed a cross-sectional approach conducted between October and December 2023, with 570 respondents selected through simple random sampling. Socio-demographic, precipitating, and predisposing factors were measured using a checklist sheet. The Self-Harm Inventory (SHI) instrument was utilized to assess NSSI. Data analysis involved Pearson correlation and multiple regression to examine the relationships between variables.

Results: The study revealed significant relationships among five variables. Gender (p-value = 0.004), bullying (p-value = 0.002), disappointment (p-value = 0.001), sharing place (p-value = 0.002), and communication pattern (p-value = 0.010) were identified as factors associated with Non-Suicidal Self-Injury behavior in adolescents. On the other hand, personality (p-value = 0.174), environment (p-value = 0.260), coping mechanism (p-value = 0.458), and parenting style (p-value = 0.054) showed no association with Non-Suicidal Self-Injury behavior.

Conclusions: The findings underscore the significance of disappointment and the absence of a supportive environment in influencing NSSI. This highlights important considerations for healthcare professionals, educators, and policymakers. Strategies should encompass comprehensive approaches, early detection, and targeted interventions to foster supportive environments and address the complex nature of NSSI among adolescents.

keywords: adolescents, bullying, Indonesia, non-suicidal self-injury

Introduction

Adolescents go through puberty or sexual maturity involving changes or transitions in hormonal, cognitive, and psychosocial aspects (Apsari et al., 2021). According to Kaligis et al. (2021), adolescents become a vulnerable population to various mental health issues, and the most common ones in Indonesia are anxiety and Non-Suicidal

Self-Injury (NSSI). Furthermore, according to Apsari et al. (2021), NSSI is a form of behavior carried out to cope with emotional pressure or emotional pain by deliberately harming oneself without intending suicide. The most frequently employed methods of NSSI include self-cutting and self-hitting, but NSSI methods vary from cutting, burning, or stabbing (Zakaria and Theresa,



2020), to hitting, digging into scars, pulling hair, and even consuming toxic substances (Kusumadewi et al., 2019). Although NSSI is an unhealthy coping mechanism, some young individuals perceive NSSI as an objective way and can become addicted to repeating it (Alifiando, Pinilih and Amin, 2022).

The actual data on NSSI behavior are like an iceberg phenomenon, making it extremely challenging to identify (Apsari et al., 2021). This is because NSSI is considered a highly personal issue, leading to many cases going undetected, except for those receiving treatment for mental condition (Sivasankari et al., 2016). A prior meta-analysis revealed that, globally, 8.3% of adolescents engaged in episodic NSSI, while 20.3% reported repetitive NSSI (Xiao et al., 2022). However, there is currently no available report regarding the prevalence of NSSI in Indonesia. According to Piarulli et al. (2023), the prevalence of NSSI ranges from 13-28% in community-based samples and up to 80% in inpatient samples. Furthermore, previous studies showed that NSSI is more common in females (Zakaria and Theresa, 2020; Xiao et al., 2022; Piarulli et al., 2023; Putri and Dewi, 2023). The average onset age reported for NSSI behavior is between 12-19 years. Out of 100 participants, 38% had engaged in self-harm 5-10 times, and 28% had self-harmed 11-50 times (Hidayati, Fanani and Mulyani, 2021). NSSI behavior can occur in both the normal population and individuals with diagnosed mental health disorders. Some mental health disorders associated with NSSI behavior include borderline personality disorder, depressive disorders, bipolar disorder, and schizophrenia (Kusumadewi et al., 2019).

Some of the contributing factors to NSSI behavior include the inability to regulate emotions, issues with negative peer relationships such as bullying, and disharmony within family relationships (Zakaria and Theresa, 2020). Emotional dysregulation is a closely related factor to NSSI behavior (Mitchell et al., 2023). Various studies consistently show that individuals engaged in NSSI behavior have higher levels of emotional dysregulation compared to those who do not (Shafti et al., 2021). The exact mechanisms through which emotional dysregulation leads to NSSI behavior are still unknown, but there are several theories attempting to explain, including the experiential avoidance theory, where NSSI is seen as an attempt to escape from stressors (Shafti et al., 2021) and the urgency theory, which suggests that individuals are more prone to NSSI when experiencing negative affect (Piarulli et al., 2023).

The NSSI behavior creates a broad spectrum of losses, encompassing physical, psychological, economic, social, and academic aspects (Hidayati, Fanani and Mulyani, 2021). From a physical perspective, NSSI leads to wounds and bruises on the body, subsequently impacting the economic aspect due to the need for medical care expenses. On the social and psychological fronts, NSSI damages or severs social relationships and gives rise to feelings of shame. Academically, NSSI is directly proportional to lower academic performance. NSSI is carried out without an intent to commit suicide, but it serves as a significant risk factor for suicide attempts across various demographics, especially among adolescents, adolescent psychiatric patients, and students and adults (Apsari et al., 2021). Moreover, many NSSI cases lead to death, with individuals engaging in NSSI having a 1.68 times higher risk of suicide. Additionally, individuals engaging in NSSI cause considerable damage to body tissues, resulting in medical complications and even death (Elvira et al., 2021).

NSSI cannot be regarded as a trivial phenomenon, especially among vulnerable populations such as adolescents. Further studies on NSSI are crucial to understanding the precipitating and predisposing factors that lead adolescents to engage in NSSI, forming the basis for developing appropriate nursing interventions. Therefore, this study aimed to identify determinant factors contributing to the occurrence of NSSI behavior in adolescents.

Materials and Methods

Design

This study was an explanatory survey with a cross-sectional approach. Drawing upon a review of existing literature that has identified known factors related to NSSI, this study analyzes the relationships between socio-demographic factors (including gender, age, type of residence and living status) (Park, In and Hur, 2022), precipitating factors (including bullying, disappointment, sharing places, and communication patterns) (Baiden, Stewart and Fallon, 2017; Geng et al., 2023), and predisposition in adolescents with NSSI behavior, and subsequently identifies the most contributing factor (including personality, environmental influences, coping mechanisms, and parenting styles) (Khazaie et al., 2021; Rosario-Williams, Kaur and Miranda, 2021; Kataria et al., 2023).

Samples and Settings

The population in this study consists of 4000 high school and vocational school students in the Central Java Province of Indonesia. The sample size was 570 respondents, determined using the Raosoft sample size calculator (<https://www.raosoft.com/samplesize.htm>), considering a population of 4000 teenage students from high schools (SMA-SMK) in the city of Semarang, with a margin of error of 5% and a confidence level of 99%. The sampling technique employed was simple random sampling, with the criteria being active high school and vocational school students in Semarang, aged between 17 and 20 years old.

Research Instruments

The tools employed in this study include a checklist sheet created by the authors, which draws from existing information regarding factors associated with NSSI. Furthermore, the assessment of NSSI behavior in adolescents utilized a validated questionnaire, specifically the Self-Harm Inventory (SHI) instrument.

Checklist sheet

The checklist sheet is utilized to measure socio-demographic variables, including age, gender, type of residence, and domicile. Precipitating factors, consisting of bullying, disappointment, sharing places, and communication patterns, are measured using a checklist sheet with two options: none and unnone. Meanwhile, predisposing factors such as personality, environmental influences, coping mechanisms, and parenting styles are also measured using a checklist sheet with single-answer or dichotomous questions: none and unnone. However, validity and reliability testing were not conducted for this checklist sheet due to the inappropriate context for such assessments.

The Self-Harm Inventory (SHI)

The Indonesian version of the Self-Harm Inventory (SHI) instrument was employed to measure NSSI behavior in adolescents in this study. The SHI comprises 22 open-ended questions with a score range of 0 to 22, where a score of 1 indicates a 'Yes' response and a score of 0 indicates 'No.' A score of 0 signifies the absence of self-harm, a score of 1-5 indicates a risk of self-harm, a cutoff score > 5 is considered valid for mild self-harm, and a cutoff score > 11 indicates a tendency toward psychopathological conditions. This instrument has undergone validity and reliability testing by Kusumadewi (2017), where the results of content validity testing, according to expert consensus, yielded Aiken's validity index ranging from 0.83 to 0.97,

indicating good validity. The reliability testing resulted in a Cronbach's alpha value of 0.831, signifying excellent reliability. Therefore, it can be concluded that the Indonesian version of the Self-Harm Inventory is valid and reliable.

Data Collection

The data collection for this study was conducted from October to December 2023. The researcher obtained ethical approval from the Ethical Assessment Team of Regional Mental Hospital of Dr. Amino Gondohutomo from Central Java Province. Permission for the study was also sought from the Department of Education, Central Java Province. An online meeting was held with representatives of guidance counselors from high schools and vocational schools in the city of Semarang. The questionnaires were distributed through a Google Form link provided to the guidance counselors in each high school and vocational school. To maintain data confidentiality, the Google Forms utilized in this study adopt an anonymous response method, wherein respondents are not prompted to provide their names, emails, or any other confidential information. Moreover, access to data analysis and curation is restricted to authorized personnel by the author. Subsequently, the students from high schools and vocational schools in Semarang were invited to fill out the questionnaires after providing informed consent.

Ethical Consideration

Adolescents were provided with comprehensive information regarding the purpose of the study. Prior to completing the questionnaires, verbal and written consent was obtained from the respondents. Participants were guaranteed confidentiality and the freedom to participate in the study. The study obtained approval from the Ethics Review Board at the health research ethics committee of Dr. Amino Gondohutomo Regional Psychiatric Hospital (Ethic approval ID 420/10402), granted on September 19th, 2023.

Table 1. Characteristics of Respondents (n=570)

Variable	Category	n	%
Gender	Male	195	34.2
	Female	375	65.8
Age	Early Adolescence (10-12 years old)	0	0.00
	Middle Adolescence (13-15 years old)	148	26.0
	Late Adolescence (16-19 years old)	422	74.0
Type of Residence	House	553	97.0
	Rental/Boarding House	14	2.5
	Relative's House	3	0.5
Living status	Living with parents	522	91.6
	Living with relatives	41	7.2
	Living/Residing alone	7	1.2

Data analysis

The collected data were processed and analyzed using Statistical Package for the Social Sciences (SPSS) version 26. Univariate and multivariate analyses were conducted on the data. Socio-demographic data, precipitating factors, predisposition, and Non-Suicidal Self-Injury behavior were depicted with frequency distributions. Subsequently, relationships between socio-demographic variables, precipitating factors, and predisposition with NSSI behavior were examined using Pearson correlation. The results of these bivariate analyses were then subjected to multivariate analysis using multiple regression to identify the factors that most contribute to NSSI behavior, with a significance level set at 95%.

Results

The response rate for this study was 100% and 570 respondents' data were recruited for analysis. The analysis was focused on the specific study questions and objectives. The study focused on specific study questions, including "which socio-demographic factors, precipitating elements, and predispositions are associated to Non-Suicidal Self-Injury (NSSI) behavior?" To address this question, the authors provide the following findings.

Respondents' Characteristics

Table 1 illustrates the socio-demographic characteristics of adolescents, where the majority are aged 16-19 years, representing late adolescence. The adolescents are predominantly female, and the type of residence is living together with their parents.

Description of Precipitating Factors, Predisposition, and NSSI Behavior in Adolescents

Table 2 illustrates the description of the precipitating factors, predisposition, and NSSI behavior variables in adolescents. Regarding the precipitating factors for NSSI occurrence, 50.2% of adolescents have experienced

Table 2. Description of Study Variable

Precipitating Factors	Category	n	%
Bullying	Experienced Bullying	286	50.2
	None	284	49.8
Disappointment	Deep Disappointment	368	64.6
	None	202	35.4
Sharing Place	Has a Sharing Place	215	37.7
	None	355	62.3
Communication Pattern	Good Communication	334	58.6
	Poor Communication	236	41.4
Predisposing Factors	Category	n	%
Personality	Introverted	286	50.2
	Extroverted	284	49.8
Environment	Support NSSI	167	29.3
	Does not support NSSI	403	70.7
Coping Mechanism	Adaptive Coping	334	58.6
	Maladaptive Coping	236	41.4
Parenting Style	Democratic	375	65.8
	Authoritarian	195	34.2
Non-Suicidal Self-Injury		Mean=4.29, SD=3.67	
	None	11	1.9
	NSSI Risk	340	59.6
	Mild NSSI	190	33.3
	Psychopathological NSSI	29	5.1

bullying, 64.6% have deep-seated feelings of disappointment, and 62.3% lack a sharing place even though their communication patterns are considered good at 58.6%. Predisposing factors for NSSI behavior include 50.2% of adolescents having an introverted personality with an unsupportive environment for NSSI occurrence at 70.7%, adolescents employing adaptive coping mechanisms at 58.6%, and a democratic parenting style in the family at 65.8%. Meanwhile, the majority of adolescents are at risk of engaging in NSSI behavior, accounting for 59.6%.

Correlation among Variables

Table 3 describes the inter-correlation of variables, which was tested using Pearson correlation. It was found that only four variables had a relationship, so these variables were further tested by multiple regression analysis. The variables of personality (p-value = 0.174), environment (p-value = 0.260), coping mechanism (p-value = 0.458), and parenting style (p-value = 0.054)

Table 3. Inter-Correction of the Variables on Predictors of Non-Suicidal Self-Injury Behavior in Adolescents

	1	2	3	4	5	6	7	8	9	10
1. NSSI	1									
2. Gender	0.004*	1								
3. Bullying	0.002*	0.016*	1							
4. Disappointment	0.001*	<0.001*	<0.001*	1						
5. Sharing Place	0.002*	0.007*	<0.001*	<0.001*	1					
6. Communication Pattern	0.010*	0.011*	<0.001*	<0.001*	<0.001*	1				
7. Personality	0.174	0.419	<0.001*	0.051	0.003*	0.104	1			
8. Environment	0.260	0.359	0.015*	0.132	0.011*	0.071	<0.001*	1		
9. Coping Mechanism	0.458	0.343	0.007*	0.009*	<0.001*	0.011*	<0.001*	<0.001*	1	
10. Parenting Style	0.054	0.448	0.289	0.297	0.460	0.411	<0.001*	<0.001*	<0.001*	1

Note: *Significant with p-value <0.05

Table 4. Regression of Non-Suicidal Self-Injury Behavior, Gender, Bullying, Disappointment, Sharing Place, and Communication Pattern

Independent Variables	Dependent Variables: Non-Suicidal Self-Injury	
	Beta	p-Value
Gender	0.085	0.045
Bullying	0.310	0.002
Disappointment	0.203	0.003
Sharing Place	0.194	0.003
Communication Pattern	0.050	0.535

R²=0.55; Adjusted R²=0.40; (p<0.001)

showed no relationship with Non-Suicidal Self-Injury behavior in adolescents. The testing results of the five variables indicated a relationship, where gender (p-value = 0.004), bullying (p-value = 0.002), deep disappointment (p-value = 0.001), sharing place (p-value = 0.002), and communication pattern (p-value = 0.010) were found to be associated with Non-Suicidal Self-Injury behavior in adolescents.

Regression Analysis Results

Table 4 outlines the highest strengths in bullying (p-value = 0.002; Beta = 0.310), disappointment (p-value = 0.003; Beta = 0.203), and sharing place (p-value = 0.003; Beta = 0.194), indicating that these factors contribute significantly to the increase in Non-Suicidal Self-Injury (NSSI) behavior in adolescents. All independent variables collectively influence NSSI behavior in adolescents by 47% (R² = 0.55). The most significant predictor variable for NSSI behavior in adolescents is bullying (Beta = 0.310).

Discussions

The findings of this study indicate that NSSI behavior in adolescents is associated with various causative factors. Socio-demographic factors such as gender are related to NSSI behavior in adolescents. Precipitating factors, such as bullying, disappointment, and the absence of a sharing place, are significantly associated with the occurrence of NSSI behavior in adolescents. Adolescents who have experienced bullying emerge as the strongest predictor for the occurrence of NSSI behavior.

This study took place in Semarang city, predominantly inhabited by the Javanese ethnic group. Javanese culture, characterized by hierarchical parenting dynamics, presents challenges for educators and parents in catering to adolescents' need for autonomy in identity development. Study on parenting practices from Javanese adolescents' perspectives remains scarce. Previous study indicates that parental values instilled since childhood significantly influence Indonesian teenagers' identity development within

Javanese culture, with parental control remaining consistent throughout their upbringing (Hasanah *et al.*, 2019).

The results of this study indicate that NSSI behavior is more common among female adolescents. This aligns with several previous studies that suggest female adolescents tend to engage in NSSI (Yue *et al.*, 2023). Additionally, previous study has shown that females are twice as likely to report NSSI behavior compared to males. This condition is associated with higher psychological pressure and a lower ability to regulate emotions effectively among females (Lutz *et al.*, 2023). Similar findings were also demonstrated in a previous cohort study, which revealed that NSSI behavior is more prevalent in females across the sample, increasing since early adolescence, peaking in mid-adolescence (ages 16-17), and gradually declining thereafter (Wilkinson *et al.*, 2022). More specifically, previous study by Yue *et al.* (2023) added that gender moderates the relationship between childhood violence and NSSI behavior. Their study suggests that females who have experienced emotional violence have a higher risk of engaging in NSSI behavior.

Moreover, the findings of the study reveal that bullying emerges as the strongest significant predictor of non-suicidal self-injury (NSSI) behavior, compared to other variables, as demonstrated by regression analysis (Beta = 0.310; p-value = 0.002). Bullying emerges as a potent predictor of NSSI due to its detrimental effects on psychological well-being, intersections with adverse childhood experiences, and socio-environmental influences. Firstly, bullying inflicts psychological distress and emotional pain, creating a profound sense of helplessness and vulnerability in its victims. This persistent exposure to hostile behavior can lead individuals to resort to NSSI as a maladaptive coping mechanism to alleviate emotional distress and regain a sense of control over their lives (Karneli *et al.*, 2022; Tsuno, 2022; Hahn, 2023; Newman, Alexander and Rovers, 2023).

Furthermore, previous study showed that individuals who have experienced trauma in childhood, such as abuse and neglect, may be more prone to both bullying victimization and engaging in NSSI as a coping mechanism (Zhao *et al.*, 2023). Additionally, adolescents who engage in repetitive NSSI may have a heightened pain threshold, potentially reinforcing NSSI behaviors as a means of seeking relief from emotional pain (Liu *et al.*, 2022; Vishwanath and Praharaj, 2022). Additionally, the prevalence and severity of bullying incidents can be impacted by the geographical and socio-economic

characteristics of the areas where adolescents reside. Previous study indicates a comparable intervention rate across all bullying roles and contexts, urban and rural alike. Victimization and physical bullying perpetration are more prevalent in urban school settings, However, victims in rural environments tend to express greater distress compared to those in urban schools (Cabrera, Larrañaga and Yubero, [2022](#)).

Moreover, in today's technological landscape, bullying transcends physical boundaries to manifest in the digital realm, commonly referred to as cyberbullying. Cyberbullying entails individuals or groups repeatedly transmitting hostile or aggressive messages via internet platforms with the aim of inflicting harm or discomfort upon others (Yu *et al.*, [2020](#)). This phenomenon can contribute to predicting NSSI due to the fact that constant exposure to derogatory messages, threats, or harassment online can lead to profound psychological distress among victims, increasing their vulnerability to engaging in NSSI as a maladaptive coping mechanism (Sampasa-Kanyinga, Lalande and Colman, [2020](#); Gu, Fang and Yang, [2023](#)). Additionally, the public humiliation and shame associated with cyberbullying, often occurring in a highly visible online environment, amplify the psychological trauma experienced by victims, further increasing their susceptibility to engaging in NSSI as a means of coping with overwhelming emotional distress (Mahtani, Melvin and Hasking, 2018; Worsley, McIntyre and Corcoran, [2019](#)).

Several previous studies indicate that exposure to bullying behavior is a significant risk factor for the emergence of NSSI issues, regardless of genetic predisposition (Huang *et al.*, [2022](#); Serafini *et al.*, [2023](#); Wu *et al.*, [2021](#)). Other study also suggests that both victims of bullying and perpetrators are more likely to report NSSI behavior, although victims of bullying have a higher likelihood (Wu *et al.*, [2021](#)). Not only direct experiences of bullying are linked to NSSI behavior, but individuals who are victims of cyberbullying are also associated with NSSI behavior (Yu *et al.*, [2020](#); Wiguna *et al.*, [2021](#)), including engaging in activities in online games (Nursalam *et al.*, [2023](#)). Victims of cyberbullying are exposed to violence in online games and engage in verbal abuse or physical harassment, both directly and through social media chatting with others (Hidayat, Permatasari and Mani, [2022](#)).

Individuals who are victims of bullying may use NSSI behavior as a form of seeking help, stress relief, or even as a form of self-punishment (Huang *et al.*, [2022](#)). Bullying and NSSI behaviors may also be related to impulsivity, self-directed and other-directed anger,

seeking sensation relief, and self-punishment (Serafini *et al.*, [2023](#)). The results of this study, along with previous study, consistently show that bullying and NSSI are interconnected. Adolescents who are victims of bullying may engage in NSSI as a form of seeking help or self-punishment because they feel powerless to voice or resist the unpleasant behavior they experience.

In the next variable, the results of this study also indicate that NSSI behavior is associated with deep feelings of disappointment, manifested in self-critical behavior. Previous study shows that self-blaming behavior significantly moderates the relationship between stressors, depression, and NSSI. Self-critical behavior increases an individual's desire to self-punish, lowers positive self-perception, and motivates individuals to directly choose self-harm over other coping behaviors (Gao *et al.*, [2023](#)). Additionally, in another study, self-blaming behavior partially mediated the relationship between poor self-concept and NSSI behavior (Kruzan, Muehlenkamp and Claes, [2022](#)). Based on explanations from previous study findings, experiencing deep disappointment leads adolescents to excessively criticize themselves in a non-objective manner, potentially fostering a desire for self-punishment through engaging in NSSI behavior.

The results of this study also indicate that adolescents who do not have a place to share their stories are associated with NSSI behavior. This is supported by several previous study findings that align with the results of this study. Loneliness is described as a subjective sense of isolation concerning social interaction or a lack of contact with others (Huang *et al.*, [2023](#)). One of the main developmental tasks during adolescence is forming interpersonal relationships with peers, so adolescents with a history of NSSI tend to be more sensitive to social exclusion than their peers (Brown *et al.*, [2020](#)). Additionally, the experience of adolescent loneliness has a significant impact on cognition, emotions, and behavior, with previous study showing that feelings of loneliness are proportional to the tendency for NSSI behavior (Huang *et al.*, [2023](#)).

On the other hand, adolescents with a history of NSSI, based on previous study, are also more likely to keep their experiences to themselves due to feelings of shame and fear of being perceived as manipulative (Brown *et al.*, [2020](#)). Interpersonal interaction is crucial for adolescents, even a major developmental task, so the condition where adolescents do not have a place to share their current conditions and problems can lead to feelings of loneliness, emptiness, and the burden of psychological stress kept within oneself. Such conditions

may give rise to maladaptive coping mechanisms in dealing with stressors, including NSSI behavior.

Although some previous study results indicate that addressing bullying issues cannot be achieved solely by intervening with the perpetrators or victims, and requires a comprehensive approach involving various stakeholders (Yulia Rohmana, Estelina and Iskandar, 2020). nursing interventions can still be implemented at various stages, including preventive, promotive, curative, and rehabilitative approaches (Celdrán-Navarro *et al.*, 2023; Yosep, Hikmat and Mardhiyah, 2023). In the preventive and promotive stages, nurses need to raise awareness about the impact of bullying across various layers of society and engage in early detection. In the curative stage, providing a safe environment for victims and delivering mental health nursing care tailored to the patient's condition is essential. Meanwhile, in the rehabilitative stage, interventions such as behavioral therapy, counseling, relational skills training, and referrals to other professionals can be performed.

The implications of this study are significant across various domains. In clinical practice, healthcare professionals, particularly nurses and mental health practitioners, can benefit from the findings to enhance their understanding of factors associated with NSSI in adolescents. This knowledge informs improved assessment skills, early detection, and intervention strategies tailored to the identified risk factors. Public health initiatives stand to gain insights for awareness campaigns and community-based interventions that address socio-demographic factors, precipitating elements, and predisposition, ultimately aiming to reduce the prevalence of NSSI among adolescents.

In the education sector, school counselors and educators can use the study's results to design targeted prevention programs and offer support to at-risk students, fostering a more supportive and protective environment. Policymakers may consider incorporating the study's findings into mental health support policies in schools and communities, emphasizing comprehensive approaches to address NSSI. Additionally, the study lays the groundwork for future study, encouraging more in-depth investigations into specific risk and protective factors, as well as exploring the effectiveness of different interventions and prevention programs. Finally, the implications extend to professional training, where healthcare professionals, educators, and counselors dealing with adolescent mental health can incorporate these findings into their training curricula. Collectively, these implications

contribute to a comprehensive approach aimed at addressing and preventing NSSI among adolescents.

Despite the valuable insights gleaned from this study, it is important to acknowledge its limitations. The study's cross-sectional design provides a static view of the relationships between variables at a specific point, thereby constraining the ability to infer causality. Longitudinal studies would be more appropriate for exploring the temporal dynamics and causal pathways linking socio-demographic factors, precipitating elements, predisposition, and Non-Suicidal Self-Injury (NSSI) in adolescents. Future study employing mixed-methods approaches could offer a more nuanced understanding of the phenomenon. Additionally, the study's examination of factors associated with NSSI may not encompass all potential variables, thereby allowing for the possibility of other influential factors not addressed in this study.

Moreover, it is worth noting that this study did not include rural areas in Central Java Province, potentially limiting the generalizability of the findings to diverse geographical settings. Furthermore, the utilization of a self-administered questionnaire introduces a potential source of bias, as participants may interpret questions differently or may not accurately report their experiences. Lastly, another limitation of this study lies in the measurement of precipitating and predisposing variables such as bullying, disappointment, sharing place, communication patterns, personality traits, environment, coping mechanisms, and parenting styles using single-answer or dichotomous questions. This approach may not fully capture the complexity inherent in these constructs.

Conclusion

This study identifies key factors associated with Non-Suicidal Self-Injury (NSSI) among adolescents, including gender, bullying, profound disappointment, and the absence of a sharing space. Bullying emerges as a robust predictor of NSSI, emphasizing the need for targeted interventions. The study underscores the higher prevalence of NSSI among females and highlights the importance of addressing gender-specific factors in mental health strategies. The findings emphasize the role of disappointment and the lack of a supportive space in contributing to NSSI, providing insights for healthcare professionals, educators, and policymakers. Strategies should involve comprehensive approaches, early detection, and tailored interventions to create supportive environments and address the multifaceted nature of NSSI among adolescents.

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Conflict of Interest

There is no conflict of interest to disclose.

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