

A Study to Assess the Prevalence of Non-suicidal Self Injury and Reasons for that Behaviour among Adults and their Coping

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: Non-Suicidal self-injury (NSSI) is both highly comorbid with suicidality among adolescents and a significant predictor of suicide attempts (SAs) in adolescents. A broad variety of different functions can underlie acts of Non-suicidal self-injury (NSSI).

Aims: To study prevalence and characteristics of Non-suicidal self-injury (NSSI) and functional purpose of that behaviour among Adults and their level of coping.

Study Design: Cross-sectional Analytical study.

Place and Duration of Study: The study is conducted in central medical university, Gujarat, India over a period of 30 days.

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Methodology: Study was conducted among students of Central Medical University. 195 participants were enrolled by consecutive random sampling. They were given a Google form to fill out Demographic details. The form also has an Inventory for NSSI (ISAS) to assess their NSSI behaviour and Brief Resilient Coping Scale (BRCS) to assess coping.

Results: Out of 195 participants, prevalence of NSSI behaviour is 49(25.12%). Among these 20(40.82%) are male & 29(59.18%) are female. Among sociodemographic data type of family is statistically significant (P value- 0.039). Mean age at which participants start self-harming is 16.6 ± 2.89 years. During NSSI behaviour 51.02% of participants always feel pain and 16.32% of participants do not feel pain. Prevalence of NSSI behaviour is higher in 3rd or higher birth order (33.33%) compare to 1st (28.31%) and 2nd (19.67%). The most common method of self-harm was cutting (65.3%), followed by banging (61.22%) or hitting self. The most common functional reason for self-harm was affect regulation followed by self-punishment. of participants who are having NSSI behaviour. In this study we found that there is a statistically significant difference between various resilience coping and NSSI behavior. (P- 0.0008).

Conclusion: The most common method of self-harm is cutting and functional purpose for this behavior is affect regulation. Individual with low resilient coping have higher chances of NSSI behavior and similarly high resilient coping is protective for NSSI behavior.

Keywords: Non-suicidal self injury; youth; coping.

1. INTRODUCTION

“Non-suicidal self-injury (NSSI) is defined as intentional, self-inflicted damage to the surface of the body without suicidal intent, which is not socially sanctioned” [1]. “This definition excludes accidental and indirect self-injurious behaviours (disordered eating or drug abuse), suicidal behaviours, also socially accepted behaviours like tattooing, piercing, or religious rituals. The most common methods endorsed are cutting, scratching, hitting or banging, carving, and scraping” [2].

“NSSI is being increasingly identified as an important mental health concern even in youth, NSSI is particularly present in mid-adolescence” [3]. “A study found that although 41.6% of adolescents reported a h/o NSSI, one study reported that 8.0% of youth aged 7 to 16 reported NSSI. who reported NSSI at least five times in the past year” [4,5].

“Suicide attempts are not always lethal and NSSI may be lethal” [6]. “NSSI is one of the strongest predictors of suicide and future suicide attempts” [7]. “NSSIs are thought to serve as a function, being used as a way to escape from pain and regulate emotion” [8].

“This prevalence, or at least the convention of NSSI, may increase with websites like YouTube. Studies investigating the pervasiveness of NSSI videos online revealed 2,140 videos in 2009 and over 5,000 in 2012. A Google search in 2009

revealed more than 15 million results, and almost 87 million in 2014” [9,10].

Self-harm is associated with stress and emotional dysregulation. Most of the studies focused on adolescents. So, this study intended to assess the behaviour and characteristics of non-suicidal self-harm in adults as stress was found to be high among them and which is the strongest predictor of suicide and future suicide attempts. So we can identify and early intervention can be done to prevent suicide.

In Adolescence, most common cause of death is Suicidal, and NSSI is a very strong predictor of Suicide [11]. Pearson’s correlation analysis revealed that mindfulness was significantly and positively associated with students’ perceived level of coping [15]. In Adolescence higher amount of successful suicidal attempts is being performed. This research will help to find the prevalence and characteristics of non-suicidal self-injury (NSSI) and the functional purpose of that behaviour among Adults and their level of coping.

NSSI in India:

“There is very less existing literature on self-harming behaviour in India. Though a small number of studies have investigated behaviours similar to NSSI, inferring the prevalence of NSSI using these studies may be difficult, as they use definitions that may not allow for distinctions between different kinds of self-injurious behaviour. 1-year prevalence of NSSI in India has been reported to vary between 31% and

34%. Bhola and colleagues (2017) point out, both studies used a very broad definition of NSSI. Therefore, the resulting one-year prevalence may be inflated. Evidence regarding gender differences is also conflicting, as one of the studies reported a lack of gender differences [12], whereas the other study reported a higher one-year prevalence of NSSI in females than in males. Consistent with the international literature, the age of onset of NSSI in India has been reported to be around 15.9 years. Given the small number of studies and their inconsistent findings, further research is necessary to understand NSSI in India" [14].

It has been evident in the available literature that self-harm behaviour was more commonly reported in India and their prevalence has been found out but the reason for their behaviour has been overlooked. As we are moving forward in the 20th century NSSI has been increasing among youth because of multiple reasons. As NSSI is a predictor of Suicide [11] it can be helpful to find out the reason as it can help to prevent future suicide attempts. Yet there have been few studies stating NSSI and Coping relations. The present study is focused on finding a correlation between NSSI and coping.

This study is conducted to determine the Prevalence & to identify the characteristics of NSSI and also to find the functional purpose of NSSI. We will also be able to assess the level of coping among adults and its association between coping and NSSI.

1.1 Objectives

1. To study the Prevalence of NSSI (Non-suicidal Self Injury).
2. To identify the characteristics of NSSI (Non-suicidal Self Injury).
3. To find the functional purpose of NSSI (Non-suicidal Self Injury).
4. To assess the level of coping among youth and its relation with NSSI (Non-suicidal Self Injury).

2. METHODOLOGY

The study is a cross-sectional study. The study is conducted by the Department of Psychiatry of Central medical university, Gujarat, India over a period of 30 days.

Inclusion criteria adopted for the present study were participants in an age group between 18

and 25 years, those who were well versed in English Language and who belong to university Campus. We Included students of Medica (Bachelor of Medicine and Bachelor of Surgery), Dental (Bachelor of Dental Surgery), Ayurveda (Bachelor of Ayurvedic and Medicine and Surgery), Physiotherapy (Bachelor of Physiotherapy), Nursing (Bachelor of Nursing Science) and Pharmacy (Bachelor of Pharmacy and Diploma of Pharmacy). Exclusion criteria adopted for the present study were those who did not wish to participate.

The sample size was calculated by using the sample size calculation formula for cross-sectional study with help of a sample size calculator. The formula is $n = \frac{NZ^2 P (1-P)}{d^2 (N-1) + Z^2 P (1-P)}$. In this formula "n" is Sample size (for finite population), "N" is the population size (400), "Z" is the statistic for level of confidence, "P" is expected proportion (0.2) and "d" is Precision (0.05). As per calculation required Sample size is 153.

Data were collected from study participants by using Google Forms. Before starting the survey, all participants were provided with details of the time taken to complete the survey, the nature of the survey and the information that fills in the survey implies the provision of informed consent by participants. A survey questionnaire was circulated using Google links. Identity of every participant was strictly kept anonymous.

A survey was conducted in the English language. In the survey, two scales are used for data collection:

- 1) NSSI (ISAS): The ISAS assesses 13 functions of NSSI, as well as the frequency of 12 NSSI behaviours. ISAS factors exhibited excellent internal consistency and expected correlations with both clinical constructs (e.g., borderline personality disorder, suicidality, depression, anxiety) and contextual variables (e.g., a tendency to self-injure alone). The ISAS may be useful in research and treatment contexts as a comprehensive measure of NSSI functions.
- 2) The Brief Resilient Coping Scale (BRCS): captures tendencies to cope with stress adaptively. The scale focuses on the tendency to effectively use coping strategies in flexible, committed ways to actively solve problems despite stressful

circumstances. It contains 4 items and each item contains a 5-point Likert scale response, ranging from 1=does not describe me at all to 5 describes me very well.

Data was then analyzed and the mean along with the standard deviation was calculated to find out the prevalence. The chi-square test was used to determine the level of significance. The level of Significance was set at 0.05.

3. RESULTS

In the present study 199 participants approach the study, and 4 participants denied giving consent hence 195 participants were studied. The mean age of participants is 21.65 (± 1.85) yrs.90 (46.15%) are Male while 105 (53.85%) are female. Among Participants, 155 (79.48%) belong to the Medical field while 40 (20.52%) belong to paramedical and other fields (such as Pharm D, MBA). 132 (67.69%) belong to a nuclear family whereas 63 (32.3%) belong to joint families.

175 (89.74%) belong to upper socioeconomic status, 17 (8.71%) belong to middle socioeconomic status and 3 (1.53%) of participants belong to lower socioeconomic

status according to Modified Prasad Classification. 113 (57.94%) of participants have 1st birth order, 61 (31.28%) of participants have 2nd birth order whereas 21 (10.78%) of participants are of the third birth order or (Table 1).

Out of 195 participants, 49 participants were having NSSI behavior, so the prevalence of NSSI behavior is 25.12%.

Among these 20 (40.82%) are male & 29 (59.18%) are female. Out of the participants doing NSSI, 41 (83.67%) belong to the medical field, and 8 (16.33%) belong to the paramedical field and other professions. Among individuals doing NSSI behavior 39 (79.59%) belong to a nuclear family while 10 (20.41%) are from a joint family. Of NSSI participants 40 (81.63%) are from the upper socioeconomic class while 7 (14.28%) are from the middle socioeconomic class and 2 (4.08%) are from low socioeconomic class. For birth order, among Participants with NSSI behavior, 30 (61.22)% are 1st birth order, 12 (24.48%) are 2nd birth order and 7 (14.28%) are 3 or >3 birth order. Among sociodemographic data type of family is statistically significant (P value- 0.039). All other demographic variables are not statistically significant.

Table 1. Association between Sociodemographic variables & NSSI

		Sociodemographic variables			Total	Chi-square	P value
		NSSI					
		Present	Absent				
Gender	Male	20	70	90	0.75	0.386	
	Female	29	76	105			
Education	Medical	41	114	155	0.703	0.401	
	Paramedical & Others	8	32	40			
Family	Nuclear	39	93	132	4.24	0.039*	
	Joint	10	53	63			
Socio-economic class	Upper	40	135	175	-	-	
	Middle	7	10	17			
	Lower	2	1	3			
Birth order	1 st	30	81	113	1.9	0.38	
	2 nd	12	49	61			
	≥ 3 rd	7	14	21			

(p-value<0.05 is statistically significant)

3.1 Non-Suicidal Self- Harming Behaviour

3.1.1 Characteristics of NSSI behavior

The mean age of starting self-harm is 16.6 (\pm 2.89) years. Among participants with NSSI behavior, 25 (51.02%) of participants always feel pain, 16 (32.63%) of participants sometimes feel pain and 8 (16.32%) participants do not feel pain at all while performing self-harming behavior. 34 (69.38%) of participants perform NSSI always when they are alone, 11 (22.44%) do it sometimes when they are alone and 4 (8.16%) perform it when they are with someone. 24 (48.97%) participants performed self-harm within 1 hour of their urge to do NSSI, 16 (32.65%) performed between 1-12 hours of the urge to do NSSI, and 9 (18.36%)

participants performed NSSI after 12 hours of their urge.

The most common method of self-harm is cutting (65.30%) followed by banging or hitting self (61.22%) while the least common method is swallowing a dangerous substance (18.36%) (Table 2). Among individuals with NSSI behavior, there is more than one self-harming behavior found (Chart 1).

3.2 Functional Purpose of NSSI Behaviour

In this study we found that, most common reason for self-harm was affect regulation (mean-4.14) followed by self-punishment (mean- 3.44). where the least common reason was revenge (mean- 1.16). (Table 3) (Chart 2).

Table 2. Prevalence of different methods of Self Harm

Self Harm	Numbers	Percentage
Cutting	32	65.30%
Banging or hitting self	30	61.22%
Pinching	28	57.14%
Interfere with wound healing	26	53.06%
pulling hair	24	48.97%
Biting	22	44.89%
severe scratching	19	38.77%
Rubbing skin with rough surface	15	30.61%
Sticking self with needles	14	28.57%
Burning	12	24.48%
Carving	11	22.44%
Swallowing dangerous substance	9	18.36%

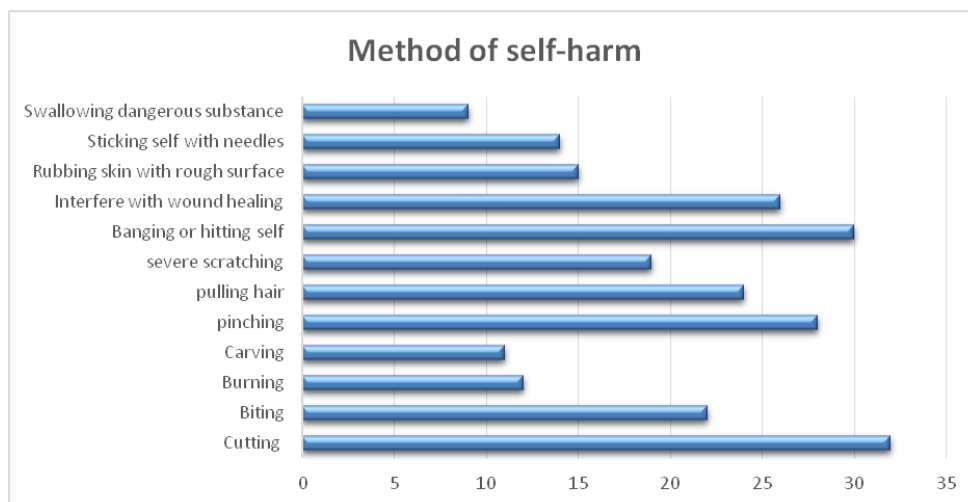


Chart 1. Prevalence of different methods of Self Harm

Table 3. Functional purpose of NSSI Behaviour

Functional purpose of NSSI	Mean Score
Affect Regulation	4.14
Interpersonal Boundaries	2.16
Self-Punishment	3.44
Self-Care	1.97
Anti-Dissociation/Feeling-Generation	2.77
Anti-Suicide	2.81
Sensation-Seeking	1.18
Peer-Bonding	1.2
Interpersonal Influence	1.75
Toughness	2.3
Marking Distress	3
Revenge	1.16
Autonomy	2

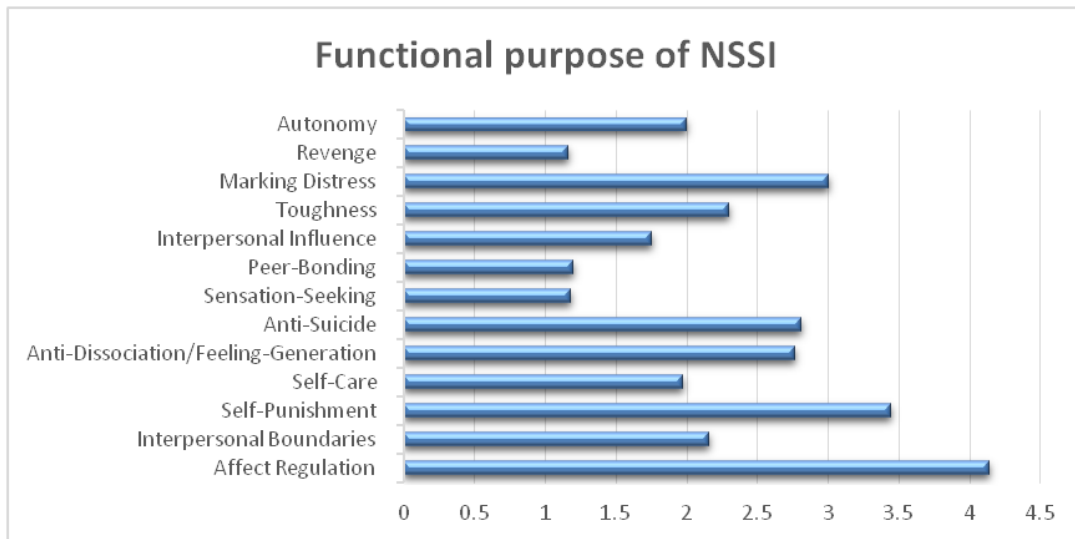


Chart 2. Functional purpose of NSSI Behavior

Table 4. Association between Coping and NSSI behaviour

	NSSI	NO NSSI	Total	Chi square	P- value
Low resilient coping	21	33	54		
Medium resilient coping	18	40	58		
High resilient coping	10	73	83		
Total	49	146	195	14.058	0.0008*

(p-value<0.05 is statistically significant)

3.3 Association between Coping and NSSI Behavior

In this study, we found that among 49 participants with NSSI behavior, 21 are having Low resilient coping, 18 are having medium resilient coping and 10 are having high resilient

coping, while for participants with non-NSSI behavior subsequent low, medium, and high resilient coping is 33,40 and 73. There is a statistically significant difference between various resilience coping and NSSI behavior (P- 0.0008). Chi-square value is 14.058 (Table 4).

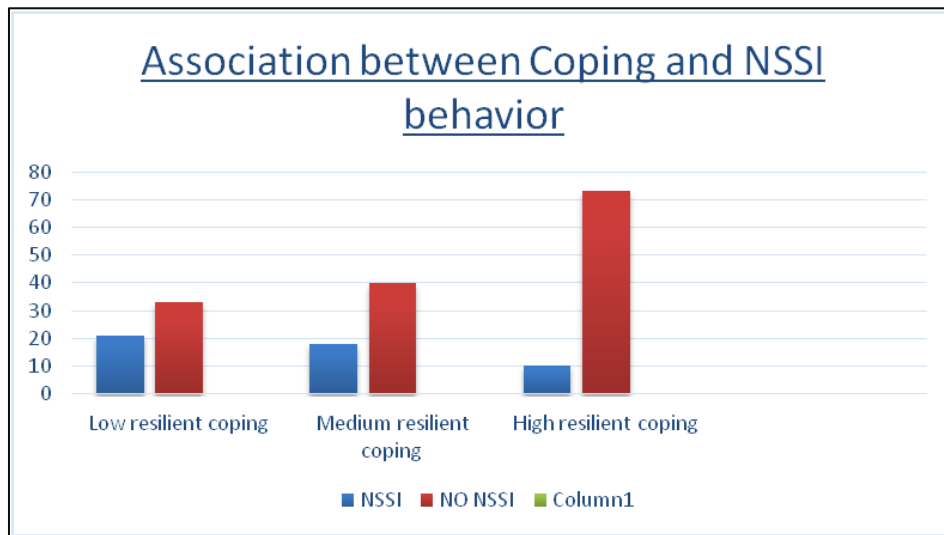


Chart 3. Comparison of NSSI and NO NSSI in association with Coping

4. DISCUSSION

The overall prevalence of NSSI in our study, considering the mean age of the students to be 21.65(±1.85)years which is similar to a study conducted by Ho Youn Park and Yoo Chang Kim, in which they find out mean age <33.9 years and more female dominant [12]. “Consistent with the international literature, the age of onset of NSSI in India has been reported to be around 15.9 years. We found that the onset of NSSI was at the mean age of 16.6 (±2.89) years. Evidence regarding gender differences is also conflicting, as one of the studies reported a lack of gender differences [13], whereas the other study reported a higher one-year prevalence of NSSI in females than in males”. In our study, we do not find statistically significant differences between males and females. NSSI behavior is more found in individuals belonging to nuclear family than joint family which is statistically significant, though further research is required to support this finding as no research is done to evaluate the effect of family type on NSSI behavior. All other demographic variables are not found statistically significant.

In this study, the highest prevalence of NSSI has been noted amongst Medical field students (83.67%) in comparison to other streams. Although this cannot be considered as standard out of 199 participants who took part in the study, 155 belonged to the medical field. No study was conducted to support this finding.

In this study, the Prevalence of NSSI behavior is higher in the 3rd or higher birth order(33.33%) compare to subsequently in the 1st birth order(28.31%) and 2nd birth order(19.67%). which is not statistically significant. No other similar study found for the same.

In our study, the most common method of self-harm was found to be cutting (65.3%), followed by banging (61.22%) or hitting self while the least common method was by swallowing a dangerous substance (18.36%).

We also found that the most common reason for self-harm was affect regulation followed by self-punishment whereas the least common reason was revenge, while in a study conducted by Amanda and Cathy, first-hand accounts included reasons such as self-validation, and self-harm to achieve a personal sense of mastery [16]. “In a study by Peter and Kholwa, Intrapersonal functions (66–81%), and especially those concerning emotion regulation were most commonly reported by individuals who engage in NSSI (63–78%)” [17].

In this study, we found that there is a statistically significant difference between various resilience coping and NSSI behavior. (P- 0.0008). Stating that individual with low resilient coping have higher chances of NSSI behavior and similarly individual with high resilient coping is protective for NSSI behavior. CZYZ and Glenn found out that when adolescents did not use adaptive coping they engage in NSSI (i.e. within-person), and youth who utilized more coping strategies in

general (i.e. between-person) had a lower probability of NSSI [18].

5. CONCLUSION

It has been concluded that NSSI behavior among youth has been growing. NSSI behavior is more common in the nuclear family than the Joint family The most common method of self-harm was found to be cutting followed by banging or hitting self. The most common functional purpose for this behavior is affect regulation. Coping help to control NSSI behavior as Individual with low resilient coping have higher chances of NSSI behavior and similarly individual with high resilient coping have a lower chance of NSSI behavior.

6. LIMITATIONS

- Cross sectional study design precludes any causal inferences.
- Subjective bias.
- All the participants are selected from one demographic region that restricting the generalizability of the data.

CONSENT

Prior informed consent was obtained through software 'google form' from the participants before collecting data for using data in future for analysis and publication.

ETHICAL APPROVAL

Prior permission of Sumandeep Vidyapeeth institutional ethics committee (SVIEC) was taken to start the study SVIEC/ON/MEDI/BNPG21/Dec22/216.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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