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Research Paper

An Exploration of Emotional Regulation, Adult Attachment, Aggression Orientation, Trauma Symptoms, and Non-Suicidal Self-Injurious Behaviour among Young Adult Students

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ABSTRACT

The study assessed the occurrence, method, and intent of non-suicidal self-injury among young adults in Kolkata and its association with emotion regulation, attachment patterns, aggression orientation, and trauma symptoms. The current study consisted of a sample of 204 individuals, within the range of 18-26 years, currently enrolled in any full-time educational course, who were selected via multistage sampling. The level of engagement in non-suicidal self-injurious behaviour was assessed using the Functional Assessment of Self-Mutilation (FASM) questionnaire. For assessing the abovementioned correlational variables Difficulties in Emotion Regulation Scale (DERS), Revised Adult Attachment Scale (RAAS), Aggression Orientation Scale (AOS), and Trauma Symptoms Checklist-40 (TSC-40) were used respectively. It was found that among these 204 participants, 118 individuals had never engaged in non-suicidal self-injurious (NSSI) behaviour in their lifetime, while 67 individuals had engaged in some significant kind of NSSI behaviour in the past year. Results from the quantitative analyses revealed significant positive correlations between NSSI behaviour and difficulties in emotional regulation, particular domains of adult attachment, certain aspects of aggression orientation, and trauma symptoms in general. Significant differences were also found across variables of difficulties in emotional regulation, specific domains of adult attachment, aggression orientation, and trauma symptoms, among the two groups. The variables were also explored as prospective predictors of NSSI behaviour. The findings of the study provide us with an impetus to explore the occurrence of NSSID, exploration of associated variables and efficacious psychotherapeutic interventions in the future.

Keywords: *Non-suicidal Self-Injury Disorder, Emotional Regulation, Attachment, Aggression Orientation, Trauma Symptoms*

In the collectivistic context of India and the predominant shame culture, stigma is associated with numerous phenomena. Non-suicidal self-injury (NSSI) is not a new phenomenon. However, the nomenclature and terminology has been varied ranging from deliberate self-harm (DSH), self-injurious behaviour (SIB), and self-mutilation. NSSI early

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was solely conceptualised as a part or symptom of borderline personality disorder. DSH was considered solely to be a plea for attention, or a reflection of emotional instability. Hence, DSH and engagers in DSH was also seen from a lens of prejudice and animosity.

According to the eleventh revision of the International Classification of Diseases for Mortality and Morbidity (ICD-11, 2019), non-suicidal self-injury is classified as MB23. E. "Intentional, self-inflicted injury to the body; most commonly cutting, scraping, burning, biting, or hitting with the expectation that the injury will lead to only minor physical harm". The internalized shame in the engagers of NSSI is also reflected in the body parts chosen to self-harm, the intent, and actions engaged in hiding it, and not revealing it to anyone. This internalized shame is somewhat like the shame associated with binge-eating disorder, bulimia, or even conditions like hair-pulling disorder (trichotillomania). There are certain commonalities between these conditions that we can notice if taken a closer look. The age of onset of all these conditions is around the early adolescent years from 12-14. All these conditions are found more prevalent among young girls than boys in a significant ratio. A study on a clinical sample across different contexts (Gatta et al., 2016) also showed a marked difference in the prevalence of NSSI by gender with a female: male ratio of 3:1. Also, it was found that NSSI was far more common among individuals not identifying with heteronormativity. This result also conforms with various study findings conducted in Europe. It can be argued that behind the manifestation of these conditions there is an element of impulsivity and inadequately developed emotional regulation strategies.

There are three primary types or methods to engage in self-injury. NSSI has been proposed as one of them. The other two types include; suicidal threats or gestures, (for instance; behaviour through which individuals lead others to believe they intend to die from the behaviour when they have no intention of doing so), and self-injurious thoughts (for instance; having thoughts of engaging in self-injurious behaviour but not acting upon such thoughts (Nock & Prinstein, 2004). Within the umbrella of NSSI behaviour, there are a wide variety of potentially dangerous acts, including skin-cutting, carving, digging (parasitosis), pricking, scratching, or burning; head-banging or hitting, castration, facial mutilation, or genital mutilation, auto-cannibalism, teeth-extraction, hair-pulling (trichotillomania), and wound aggravation (Briere and Gil,1998; Favazza,1998). When it comes to the methods applied, 70-90% of self-injuring subjects reported that they had cut themselves, 21-44% reported having banged their head or hit themselves, and 15-35% reported having burned themselves (Nock et al., 2010). Socially sanctioned forms of body modification, such as tattoos, and body piercings for self-adornment are excluded from the definition of NSSI (Whitlock et al.,2014). A study (Lurigio et al., 2023) has thrown light on the fact that though NSSI has been a part of many religious or cultural rituals. Hence, applying tattoo art from the point of view of self-adornment or aesthetics which is well-thought of, well-planned, and not an act of impulse does not qualify as NSSI. In India, it is a common practice, especially among the rural or suburban context to make these sorts of religious rituals, vernacularly called ‘sankalpa’, or ‘manat’ etc among different communities and faith. The concept of these religious rituals is to offer some sort of sacrifice or bloodshed as a gratitude or a promise in case one’s wish or prayer to God is attended.

The only Indian community-based study on NSSI by Kharsati and Bhola (2014) reported a lifetime prevalence of almost 31% in a sample of emerging adults. Within the existing limited data, the lifetime prevalence of NSSI in India may be higher than the international average. The global lifetime prevalence was found to be close to 14.2%. When it comes to the intent or function of engagement in NSSI, a meta-analysis of the prevalence of different functions

of NSSI (Taylor and Jomar, 2018) reported that intrapersonal functions (66-81%), especially those concerning emotional regulation were most reported by individuals who engage in NSSI (63-78%). In comparison, interpersonal functions (eg: expressing distress) were less common (33-56%).

A study reported a high correlation between NSSI and difficulty in regulating emotions and difficulty with interpersonal relationships. A review of over 25 studies, revealed various forms of childhood maltreatment, which includes various forms of abuse; child sexual abuse (CSA), physical abuse and emotional abuse. Different studies abroad have highlighted the relation of ER and NSSI (Andover & Morris, 2014), indicating its relevance. Insecure attachment style has been identified as a risk factor for both NSSI and behavioural problems, and behavioural problems seem to be associated with NSSI (Cassels et al., 2019).

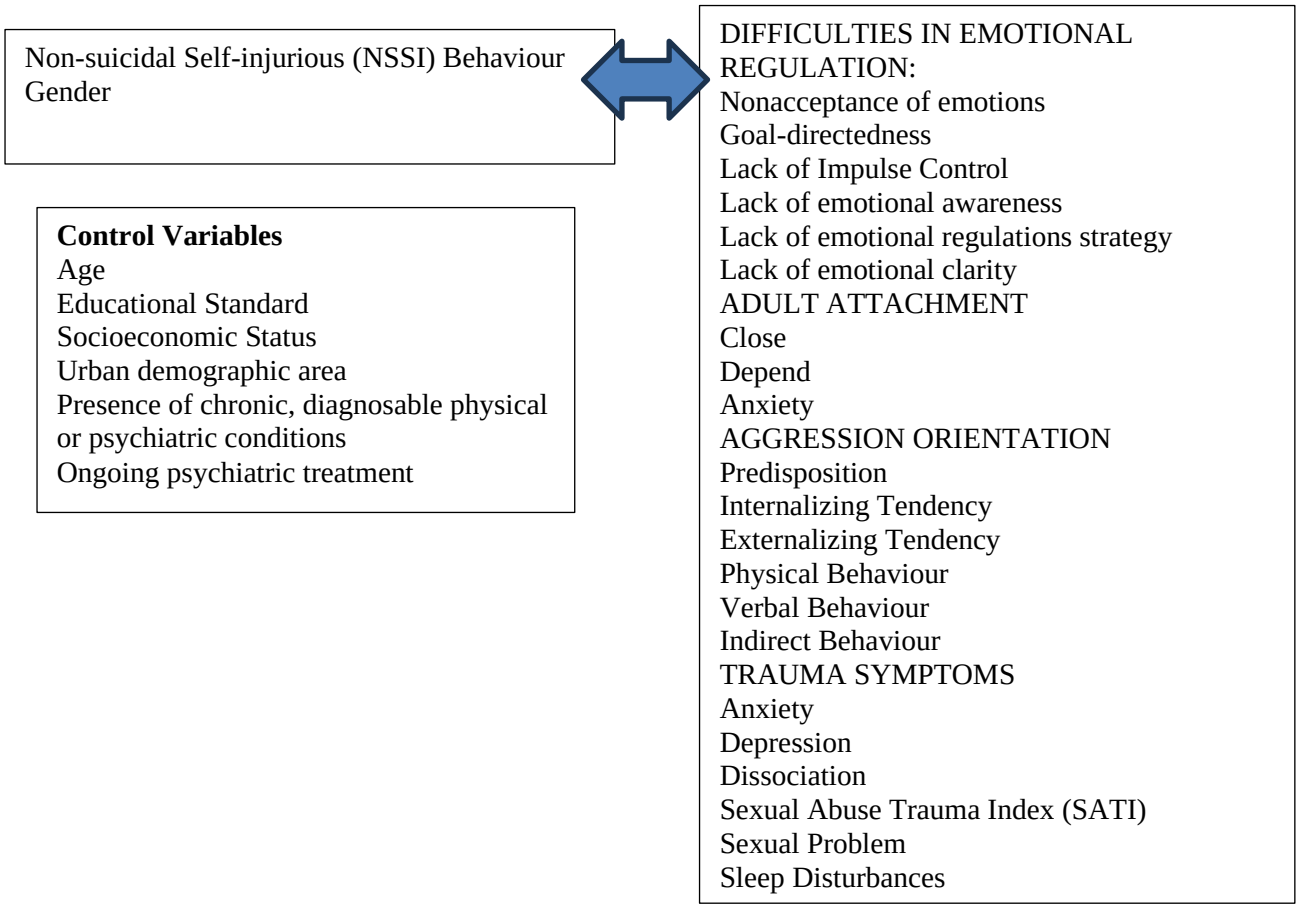
NSSI can surely be conceptualized as a manifestation of internalized aggression. So, a presence of difficulties in emotional regulation, some kind of insecure attachment style, history of childhood trauma or maltreatment, and manifestation of aggression have all been found in the underlying psychopathology behind NSSI. A similar study conducted in the Indian context (Kharsati and Bhola, 2014; Gandhi et al., 2015), based on the mediation analyses indicated that peer trust had a significant indirect negative effect on NSSI via identity synthesis and confusion. A lack of identity synthesis partially mediated the positive association between peer alienation and NSSI. In a similar study in a Mexican population (Marín-Tejeda et al., 2021) the ones who reported a higher frequency of NSSI episodes were also found to give higher reports of interpersonal trauma, depression, anxiety, and behavioural disorders. Another study (Ford & Gomez., 2015) in addition found association with dissociative conditions and post-traumatic stress disorder (PTSD).

METHOD

Objectives

- To explore the occurrence, method, and intent of NSSI among a sample of young adult students residing in Kolkata
- To assess the relationship between difficulties in emotional regulation, adult attachment, aggression orientation and trauma symptoms among a sample of young adult students of Kolkata engaging in NSSI behaviour
- To assess whether there is any significant difference between young adult students engaging in NSSI behaviour and young adult students not engaging in NSSI behaviour, with respect to the variables; difficulties in emotional regulation, adult attachment, aggression orientation, and trauma symptoms.
- To assess whether any combination of the respective variables; difficulties in emotional regulation, adult attachment, aggression orientation, and trauma symptoms could be a significant predictor of non-suicidal self-injurious behaviour.

Design of the Study:



Sample Characteristics –

Source of Sample: The sample of young adult college students within the age range of 18-26 years belonging to middle socioeconomic status studying in colleges and universities of the metropolitan area of Kolkata enrolled in regular graduate, post-graduate or super-speciality courses were selected based on multistage sampling technique.

Sampling Technique: Three geographic zones; north, south, and central were randomly selected from the total five geographical zones of Kolkata. Though there are not an equal number of educational institutions in all these zones, a somewhat equal number of data was gathered after procuring permission from the authorities of these respective zones' selective colleges and universities. A sample was selected from four colleges/ universities of about 204 individuals. Data was collected in total from four colleges and universities (about 50 from each institution). The proportion of individuals who engaged in NSSI behaviour was determined using the Functional Assessment of Self-Mutilation (FASM) questionnaire.

Inclusion criteria –

To select the total sample (N), these basic inclusion criteria were maintained. All the participants were between the age of 18-26, studying in colleges and universities with fair understanding of English language, belonging to middle socioeconomic status assessed using the Kuppuswamy Socioeconomic Scale, residing in urban area of Kolkata, and young adult students who qualify for the cut-off in section A based on the severity of method they use for self-mutilation of the Functional Assessment of Self-Mutilation (FASM) Questionnaire and

the level of severity. Individuals who have selected at least one method from the moderate severity of self-mutilation and have engaged on multiple occasions were selected for the NSSI category (n_1).

Exclusion Criteria –
Young adult students suffering from physical condition like fibromyalgia, Crohn's disease, severe diabetes or any terminal illness, traumatic brain injury or any neuropsychological injury or condition, or individuals with dependence on any substance were excluded. Individuals who experienced any recent episode of accident, sudden death of a loved one or any other source of acute psychological trauma, who scored above the cut-off in Brief Psychiatric Rating Scale (BPRS), having active suicidal ideation or intent or recent history of suicide attempt (within a month of the data collection procedure) assessed by FASM and needing emergency intervention, belonging to a family of divorced parents or separated families, were excluded. Since the review indicate the plausible overlap between engagement in non-suicidal self-injurious behaviour and the presence of symptoms of depression, anxiety, or somatic symptoms. Only individuals who had elevated scores in SCL-90-R based on other domains apart from depression, anxiety, or somatization were excluded. However, for the sample of young adult students not engaging in NSSI behaviour, any individual with an elevated SCL score were excluded.

Tools Used –
Measures

- Sociodemographic Data Sheet
- Informed Consent

Screening Tools:

- Kuppuswamy Socioeconomic Scale (KSES) (updated 2020)
- Brief Psychiatric Rating Scale (BPRS) (Overall and Gorham, 1962)
- Symptom Checklist-90-Revised (SCL-90-R) (Derogatis, 1994)

Measures for the Study Variables:

- Functional Assessment of Self-Mutilation Questionnaire (FASM) (Lloyd et al, 1997)
- Difficulties in Emotional Regulation Scale (DERS) (Gratz & Roemer, 2004)
- Revised Adult Attachment Scale (RAAS) (Collins et al, 1996)
- Aggression Orientation Scale (AOS) (Basu, 2005)
- Trauma Symptom Checklist-40 (TSC) (Briere & Runtz, 1989)

Procedure:
For the data collection procedure, permission was sought from the authorities of various colleges and universities from the three randomly selected geographical zones: North, South and Central of Kolkata. The study was conducted on 204 young adult students chosen from four colleges and universities (about 50 each) using multistage sampling technique. The participants were taken up after the procurement of informed consent. The data sheet which consists of the Functional Assessment of Self-Mutilation (FASM) to assess the engagement in NSSI behaviour and the screening tools SCL-90-R, BPRS, and the scales to assess the other variables was administered. The young adult students who were found to have active suicidal ideation, diagnosable chronic physical or psychiatric conditions, or under treatment were excluded in the first stage itself with the help of the screening tools. Though NSSI is rarely

conducted with suicidal intent; to rule out any risk or possibility of harm these young adult students were given contacts of low-cost and student-friendly helpline numbers and government counselling centers or psychiatric units. Based on whether they qualified the criteria for NSSI behaviour, young adult students were either assigned to the sample of young adult students engaging in NSSI behaviour for further observation, and the remainder of the sample was retained to be considered as the control group of young adult students not engaging in NSSI behaviour for comparison based on the dependent variables.

RESULTS

Table 1.1: Description of distribution of Sociodemographic variables in the whole sample of young adult students of Kolkata

Sl No:	Sociodemographic Variable	Levels/ Categories	Frequency	Percentage
1	Gender	Male	23	11.3
		Female	181	88.7
2	Education	10+2 pass	56	27.5
		Graduate	118	57.8
		Postgraduate	29	14.2
		Super speciality/ Higher studies	1	0.5
	Age Range	18-19	38	18.6
		20-21	145	71.1
		22-23	20	9.8
		24-25	1	0.5
4	Relationship Status	Single	187	91.7
		Committed	14	6.9
		Casual	3	1.5
5	Socioeconomic Status	Middle Middle	117	57.4
		Upper Middle	12	5.9
		Lower Middle	75	36.8
6	Engagement in NSSI	None	137	67.2
		Engagement in the Past Year	67	32.8

Table 1.1 reveals that out of the 204 individuals, 23 individuals were of the male gender, whereas 181 were of the female gender comprising 88.7% of the total sample. 118 individuals, i.e. 57.8% of the total sample were graduates, 56 (27.5%) had just passed from school, while 29 (14.2%) had last pursued their post-graduate degree. Majority of the sample was found to lie between the age range of 18-21. 91.7% of the total sample were single with respect to relationship status, while only 6.9% were committed, and 1.5% were in a casual relationship. All the individuals belonged to the socioeconomic status. With respect to engagement in NSSI behaviour, 137 of the individuals (67.2%) have not engaged in NSSI behaviour in the past year, while 67 (32.8%) were found to engage in NSSI behaviour in the past year.

Table 1.2: Description of distribution of Sociodemographic variables in the sample of young adult individuals engaging in self-harm

Sl No:	Sociodemographic Variable	Levels/ Categories	Frequency	Percentage
1	Gender	Male	7	10.447
		Female	60	89.553
2	Education	10+2 pass	28	41.5
		Graduate	28	41.5
		Postgraduate	7	10.3
		Super speciality/ Higher studies	4	6.45
3	Age Range	18-19	9	13.5
		20-21	29	43.5
		22-23	21	32
		24-25	8	11
4	Relationship Status	Single	63	94
		Committed	4	6
5	Socioeconomic Status	Middle Middle	42	62.7
		Upper Middle	2	3
		Lower Middle	23	34.3
6	History of Suicidal Ideation	No	15	22.38
		Yes	62	77.611

Table 1.2 reveals the distribution of certain variables in the sample of young adult students engaging in NSSI behaviour in the past year, majority of 89.553% constituted of individuals of the female genders, while the rest were male. 41.5% of the sample had their school degree as the last degree attained, 41.5% were gradate, while 10.3% of them were post-graduates, and 6.45% had a super specialty degree. 94% (63) of the sample were single with respect to relationship status, while only the meagre rest were in a committed relationship. Majority of the sample belonged to the middle-middle socioeconomic status. 15 of the 67 individuals (22.38%) had contemplated ending their lives sometime in the past.

Table 2.1: Description of the occurrence, method, most frequently sought methods, intent, and function of non-suicidal self-injurious (NSSI) behaviour among young adult students

NSSI Behavior	Description	Frequency	Percentage (%)
Number of Methods Used	One	13	19.4
	Two	31	46.3
	Three	13	19.4
	Four	5	7.5
	Five	4	6
	Six	1	1.5
Kind of Method	Cutting or carving on skin	29	43.16
	Picking at a wound	24	35.71
	Hitting self	19	29.19
	Picking areas of the body to the point of drawing blood	14	21.42

NSSI Behavior	Description	Frequency	Percentage (%)
	Inserting objects under the skin or nails	12	18.32
	Burning skin	28	27.63
	Pulling out one's own hair	14	21.42
Pain Severity	None	0	0
	Mild	42	62.7
	Moderate	24	35.8
	Severe	1	1.5
Function or Intent	**Statement Examples**		
Automatic Positive Reinforcement	To feel relaxed To feel something, even if it was pain	43	64.28
Automatic Negative Reinforcement	To stop bad feelings To relieve feeling numb or empty	42	62.422
Social Positive Reinforcement	To get control of a situation To get other people to act differently or change To try to get a reaction from someone, even if it's negative To get your parents to understand or notice you	48	71.739
Social Negative Reinforcement	To avoid doing something unpleasant you don't want to do To avoid school, work, or other activities	33	50

Table 2.1 reveals that among the young adult students engaging in NSSI behaviour, only 19.4% of the sample resorted to only one method of engagement in NSSI behaviour, 46.3% of the sample resorted to two methods of NSSI behaviour, only 19.4% of the sample resorted to three methods of NSSI behaviour simultaneously, while only 5 (7.5%) individuals resorted to five and six methods of NSSI behaviour simultaneously. In terms of pain severity, 62.7% of the sample reported experiencing mild level of pain, 35.8% experienced moderate level of pain, while only one person experienced severe level of pain. It was also found that most individuals who engaged in NSSI behaviour did so from multiple sources of intent or function at the same time. The most common sources of intent were social positive reinforcement, closely followed by both automatic positive reinforcement and automatic negative reinforcement. So, it can be inferred that it was the most common for a sample of young adult students to engage in NSSI behaviour for some perceived change or betterment in their context, surroundings, or interpersonal relationship. It was also common for individuals to engage in NSSI behaviour for some sort of automatic positive consequence internal in nature, for instance to feel relaxed, to feel something even if it is pain. It was almost equally likely for individuals to engage in NSSI behaviour to stop bad feelings, or to relieve feeling numb, and similar sort of intent.

Table 3.1: Correlation between the dependent variables in the sample of young adult students engaging in NSSI behaviour (parametric- Pearson product-moment correlation)

	DERSNA	DERSGOA	DERSIMP	DERSAWR	DERSSTR	DERSCLA	DERSTOT	RAASCLO	RAASDEP	RAASANX	AOSPR	AOSIT	AOSET	AOSPE	AOSVE	AOSIE	TSCANX	TSCDEPR	TSCDISS	TSCSATI	TSCSEP	TSCSLDI	TSCTOT
DERSNA	1																						
DERSGOA	.50**	1																					
DERSIMP	.57**	.55**	1																				
DERSAWR	-.01	-.070	.076	1																			
DERSSTR	.56**	.61**	.67**	.1	1																		
DERSCLA	.35**	.26**	.35**	.55**	.48**	1																	
DERSTOT	.73**	.67**	.77**	.39**	.81**	.63**	1																
RAASCLO	-.051	-.035	.11	-.003	.08	.24**	-.13	1															
RAASDEP	.16*	-.029	.29**	.03	.03	.01	.11	.49**	1														
RAASANX	.35**	.15*	.44**	.03	.23**	.17*	.32**	.43**	.81**	1													
AOSPR	.39**	.36**	.37**	.05	.49**	.35**	.49**	-.13	-.16*	.06	1												
AOSIT	.052	.13	.14*	.01	.27**	.38**	.02	.81**	.12	.18*	.22**	1											
AOSET	.16*	.21**	.33**	.06	.41**	.41**	.21**	.61**	.08	.17*	.40**	.76**	1										
AOSPE	.32**	.21**	.35**	.05	.34**	.32**	.30**	.35**	.23**	.30**	.47**	.48**	.59**	1									
AOSVE	-.013	.12	.10	-.04	.18*	.27**	-.04	.67**	.05	.11	.27**	.79**	.70**	.52**	1								
AOSIE	.22**	.27**	.17*	-.13	.29**	.20**	.19**	.19**	-.01	.16*	.59**	.40**	.42**	.44**	.49**	1							
TSCANX	.31**	.39**	.34**	.002	.52**	.46**	.39**	.28**	-.06	.12	.40**	.51**	.49**	.40**	.41**	.38**	1						

TSC DEPR	.39**	.44**	.34**	.01	.51**	.39**	.50**	-.05	-.11	.12	.47**	.23**	.25**	.25**	.14*	.35**	.77**	1				
TSC DISS	.42**	.43**	.44**	.07	.59**	.44**	.57**	.04	.03	.21**	.45**	.26**	.29**	.37**	.22**	.35**	.74**	.78**	1			
TSC SATI	.41**	.39**	.44**	.08	.53**	.45**	.55**	.01	-.01	.20**	.40**	.24**	.22**	.33**	.14*	.25**	.73**	.80**	.89**	1		
TSC SEP	.29**	.31**	.46**	.02	.47**	.35**	.45**	.06	.01	.17*	.33**	.23**	.29**	.36**	.17*	.30**	.57**	.63**	.63**	.69**	1	
TSC SLDI	.26**	.37**	.25**	-.03	.44**	.28**	.38**	-.02	-.11	.09	.36**	.18**	.16*	.14*	.10	.27**	.69**	.81**	.70**	.74**	.47**	1
TSC TOT	.42**	.46**	.49**	.01	.58**	.43**	.56**	.01	-.04	.19**	.48**	.27**	.31**	.35**	.18**	.36**	.85**	.93**	.90**	.91**	.74**	.84**

****. Correlation is significant at the 0.01 level (2-tailed).**

***. Correlation is significant at the 0.05 level (2-tailed).**

Table 3.1: The Correlation Matrix reveals that the Lack of Emotional Clarity of DERS is the only domain positively correlated with the Close domain of adult attachment. The Depend domain of adult attachment is positively correlated with the Non acceptance of Emotions, and Lack of Impulse Control domain of DERS. The Anxious domain of adult attachment was found to be positively correlated with all domains of Difficulties in Emotional Regulation, apart from Lack of Emotional Awareness. The predisposition domain of aggression Orientation was found to be positively correlated with all domains of Difficulties in Emotional Regulation, apart from Lack of Emotional Awareness and the DERS total domain. The internalizing tendency aspect of Aggression Orientation is positively correlated with the domain of Lack of Impulse Control, Lack of Emotional Regulation strategies, and the Lack of Emotional Clarity domain of DERS, and the Close and Anxiety domain of Adult Attachment. The Externalizing Tendency and the Indirect Behaviour domain of aggression orientation were found to be positively correlated with all the domains of DERS apart from Lack of Emotional Awareness, and the Close domain of Adult Attachment. The Physical Behaviour domain of Aggression Orientation was found to be positively correlated with all domains of DERS, and all three domains of Adult Attachment as well. The Verbal Behaviour domain of Aggression Orientation was positively correlated with the Lack of Emotional Clarity, and Lack of Emotional Regulation strategies domain of DERS, and only the Close domain of Adult Attachment. All the domains of trauma symptoms were significantly positively correlated with all the domains of DERS apart from Lack of Emotional Awareness. The trauma symptoms domains of dissociation, sexual abuse trauma index (SATI), sexual problem, sleep disturbances, and TSC total were all positively correlated with the anxiety domain of adult attachment. The trauma symptoms domains were all significantly positively correlated with all aspects of aggression orientation. Only the domain of sleep disturbance of trauma was found uncorrelated with the verbal behaviour domain of aggression orientation as an exception.

Table 4.1: Mean, S.D, and t-value in terms of young adult students engaging in NSSI behaviour and young adult students not engaging in NSSI

Variables	**Self-harm engagement**	**Mean**	**S.D**	**t-value**	**P (level of significance)**
DERS: Nonacceptance	Not engaged	10.17	3.821	-5.513	.000**
	Engaged	13.83	5.543		
Goal directedness	Not engaged	12.25	3.987	-3.804	.000**
	Engaged	14.73	5.092		
Impulsiveness	Not engaged	11.46	3.365	-6.774	.000**
	Engaged	15.60	5.295		
Awareness	Not engaged	16.03	5.243	-.625	.533
	Engaged	16.51	4.894		
Strategies	Not engaged	14.83	4.413	-7.576	.000**
	Engaged	21.10	7.365		
Clarity	Not engaged	9.88	3.213	-4.715	.000**
	Engaged	12.67	5.186		
DERS: Total	Not engaged	74.62	15.752	-6.646	.000**
	Engaged	93.36	24.156		
RAAS: Close	Not engaged	3.67	2.867	-3.315	.001**
	Engaged	7.65	3.452		
Depend	Not engaged	3.37	2.686	-3.345	.001**
	Engaged	5.48	6.315		
Anxiety	Not engaged	2.88	2.290	-6.010	.000**
	Engaged	5.88	4.847		
AOS: Predisposition	Not engaged	4.98	3.429	-5.496	.000**
	Engaged	8.15	4.642		
Internalizing Tendency	Not engaged	1.44	1.230	-5.347	.000**
	Engaged	3.63	4.468		
Externalizing Tendency	Not engaged	.79	1.166	-5.558	.212
	Engaged	2.19	2.451		
Physical Behaviour	Not engaged	1.08	1.650	-7.573	.549
	Engaged	3.39	2.680		
Verbal Behaviour	Not engaged	1.85	1.503	-3.669	.000**
	Engaged	3.22	3.813		
Indirect Behaviour	Not engaged	4.99	2.962	-4.502	.000**
	Engaged	7.01	3.116		
TSC: Anxiety	Not engaged	3.69	2.580	-9.333	.000**
	Engaged	9.06	5.640		
Depression	Not engaged	4.15	3.145	-9.095	.000**
	Engaged	9.93	5.935		
Dissociation	Not engaged	2.34	2.318	-10.111	.000**
	Engaged	6.70	3.810		
Sexual Abuse Trauma Index (SATI)	Not engaged	2.11	2.222	-9.096	.533
	Engaged	6.18	4.170		
Sexual Problem	Not engaged	.91	1.565	-7.879	.000**
	Engaged	4.12	4.216		
Sleep Disturbances	Not engaged	3.43	3.063	-7.515	.000**
	Engaged	7.52	4.636		
TSC: Total	Not engaged	15.33	10.749	-11.425	.000**
	Engaged	42.60	23.375		

Table 4.1: The findings of the table reveal the differences between the young adult students engaging in NSSI behaviour, and the young adult students who do not engage in NSSI behaviour with respect to the dependent variables. Significant difference was found between these two groups with respect to all the domains of Difficulties in Emotional Regulation, apart from the domain of Lack of Emotional Awareness. The mean values of these two groups of individuals indicate that the young adult individuals who engaged in NSSI behaviour scored higher in all these domains of DERS. A significant difference was also found in all three domains of adult attachment. The mean values of all three domains of adult attachment reveal that young adult individuals who engaged in NSSI score higher in all domains of adult attachment as well. In terms of aggression orientation, significant difference was found between the domains of predisposition, internalising tendency, verbal behaviour, and indirect behaviour. The mean values in this regard also reveal higher scores among young adult engagers in NSSI behaviour. Interestingly, significant difference was revealed with respect to all the domains of trauma symptoms, apart from the sexual abuse trauma index (SATI). The mean values in all the domains of trauma symptoms are greater in young adult individuals engaging in NSSI behaviour, however the mean difference is not significant enough only in case of SATI.

Table 5.1: Multiple Linear Regression Findings exploring the variables as prospective predictors of NSSI behaviour

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.805[a]	.648	.605	.954

ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	303.105	22	13.777	15.152	.000[b]
	Residual	164.582	181	.909		
	Total	467.686	203			

Table 5.1, The multiple linear regression findings reveal whether any combination of the variables can predict the NSSI behaviour. The model summary table in general reveals that the general quality of prediction, and the proportion of variance in the dependent variable (DV) that can be explained by these prospective predictors. The R value indicates that a good level of prediction can be ascertained (.805). The R^2 values and the adjusted R^2 values indicate that even with caution, about 60% of the variability in the DV can be explained by the predictors in this regression model. The ANOVA table findings reveal in general whether the regression model employed is a good fit for our data. The findings reveal that the independent variables or predictors significantly predict the dependent variable based on the F-value (13.777) and the P-value (.000). It reveals that this model is a good fit for the data.

Estimated Model Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
Constant	-.894	.377		-2.374	.019	-1.638	-.151
DERS: Nonacceptance	.029	.020	.098	1.456	.147	-.010	.067
Goal-directedness	-.011	.022	-.033	-.500	.618	-.054	.032
Impulse Control	.032	.024	.099	1.324	.187	-.016	.079
Lack of Awareness	.016	.018	.054	.887	.376	-.020	.052
Lack of ER strategies	-.023	.018	-.096	-1.303	.194	-.058	.012
Emotional Clarity	.021	.027	.055	.776	.439	-.032	.075
RAAS: Close	-.025	.049	-.060	-.507	.613	-.122	.072
RAAS: Depend	-.002	.052	-.005	-.037	.970	-.105	.101
RAAS: Anxiety	.059	.041	.123	1.444	.151	-.022	.139
AOS: Predisposition	.007	.027	.023	.266	.790	-.046	.060
Internalizing Tendency	.164	.064	.204	2.557	.011	.037	.290
Externalizing Tendency	-.136	.070	-.145	-1.933	.055	-.275	.003
Physical Behaviour	.143	.041	.308	3.484	.001	.062	.224
Verbal Behaviour	-.090	.053	-.121	-1.701	.091	-.195	.014
Indirect Behaviour	-.002	.031	-.005	-.075	.941	-.064	.059
TSC: Anxiety	-.101	.045	-.298	-2.255	.025	-.190	-.013
Depression	-.086	.043	-.300	-2.003	.047	-.170	-.001
Dissociation	.118	.056	.296	2.115	.036	.008	.229
Sexual Abuse Trauma Index (SATI)	-.194	.057	-.480	-3.392	.001	-.307	-.081
Sexual Problem	-.023	.043	-.052	-.545	.586	-.108	.061
Sleep Disturbances	-.057	.039	-.152	-1.478	.141	-.134	.019
TSC Total	.095	.028	1.356	3.430	.001	.040	.150

From the table of Estimated Model Coefficients, the Unstandardized Coefficients (B values) how much of the independent variable or predictee varies with an independent variable when all the other independent variables (predictors) were held constant. The B values in this regard indicate the level of change or variation in NSSI behaviour that can be predicted by each of the independent variables. The t-values and the level of significance values indicate that all the t-values are different from 0. The p-values indicate that this deflection from zero in these t-values is significant in case of the Internalizing tendency, Externalizing Tendency, and Physical Behaviour domain of trauma symptoms, the domains of depression, anxiety, dissociation, sexual abuse trauma index (SATI), and TSC total domains. These values were mostly significant at .05 level of significance, and only the TSC total t-vaue was found to be significant at .001 level of significance.

DISCUSSION

The current study fills a significant research gap especially in the sociocultural context of India. So, though we do not have significant studies to compare in a similar sociocultural context apart from one (Kharsati and Bhola; 2014). As per the current findings, 67 out of 204 individuals engaged in NSSI behaviour which somewhat aligns with the past research findings that 31% young adults have a lifetime prevalence of NSSI. Though the study has not been conducted on the adolescent population, but the distribution of NSSI behaviour through the age range of 18-25 shows the largest incidence between the age range of 18-21, and was found to decline with more matured age. The female: male ratio of the total sample as well as the sample engaging in NSSI behaviour represents a predominant prevalence of female gender which is in alignment with past findings (Gatta et al., 2016).

With respect to intent, the young adult students engaging in NSSI behaviour were found to have overlapping intent in every individual. However, the most frequent function was found to be interpersonal (social positive reinforcement) closely followed by intrapersonal (automatic positive and negative reinforcement). These findings are somewhat different from the past research findings (Taylor and Jomar, 2018). However, this area has hardly been explored. In terms of methods resorted for NSSI behaviour the findings reveal that cutting or carving skin, picking at a wound, hitting self, and burning skin were the most common methods of NSSI behaviour. Past research findings though conducted in a completely different sociocultural context reveal similar preference with respect to methods of engagement in NSSI behaviour (Nock, 2010).

The correlational findings indicate significant association between difficulties in emotional regulation (apart from the domain of Lack of emotional Awareness), certain domains of Adult Attachment, most of the aspects of Aggression Orientation, and Trauma symptoms among a sample of young adult students engaging in NSSI behaviour. Past findings indicate the possibility of this association, through no previous study has explored these correlates together in particular. However, past findings reveal similar results (Cassels et al., Li et al, 2020).

The significant difference between all domains of difficulties in emotional regulation (apart from lack of emotional awareness) between young adult students engaging in NSSI behaviour and those who do not indicate a possible role of difficulties in emotional regulation which is further supported by the regression findings. These findings are supported by past research findings as well (Andover and Morris, 2014). With respect to the domains of adult attachment in terms of correlation as well as significant difference, anxious domain of adult attachment has been found to play a role which is similar to past findings (Cassels et al., 2019). Childhood

trauma or maltreatment has been indicated in multiple past research findings (Gandhi et al., 2015, Li et al., 2020). No previous study has explored trauma symptoms in relation to NSSI behaviour specifically. The findings with respect to trauma symptoms show significant difference between young adult individuals engaging and not engaging in NSSI behaviour. This can be regarded as a significant finding.

With respect to the predictor-predicted relationship it was seen that these variables in a combination can predict the NSSI behaviour to about 60% proportion of their variance. In terms of specific predictor variables, three aspects of aggression orientation (internalizing tendency, externalizing tendency, physical behaviour), and specific domains of trauma symptoms (anxiety, depression, dissociation, sexual abuse trauma index, and TSC total) were found to be significantly different or have greater impact than zero. These findings are also aligned to the past findings, which assert the role of aggression and trauma symptoms in the manifestation of NSSI behaviour.

CONCLUSION

In summary, this research study highlights the significant occurrence of NSSI behaviour among the sample of young adult students in the urban demographic area of Kolkata. It also indicates how this sort of coping strategies in dealing with overwhelming emotions or interpersonal difficulties, could be a potential risk factor for overlapping mental health conditions. Certain interesting insights were obtained regarding the method, intent, and characteristics of engagement in NSSI behaviour among young adult students residing in Kolkata. A significant relationship was found between all aspects of difficulties in emotional regulation, particular domain of adult attachment, certain aspects of aggression orientation, and most of the domains of trauma symptoms. A significant effect of NSSI behaviour was found on all the above-mentioned variables. The interaction effect between NSSI behaviour and gender was also found to be quite significant with respect to considerable domains of the variables. As, the sample size was quite large these findings could be generalized with caution. The lack of openness in terms of emotional expression could have created a hindrance in participants of male gender to reveal their authentic mental state, or not being comfortable to the exposure to therapeutic intervention of any sort.

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