Self-injurious behavior, emotion regulation, and attachment styles among college students in India

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Context: Intentional self-directed acts of injury are the most common among adolescents and young adults. Developmental psychopathology theories that conceptualize pathways to self-injurious behaviors (SIBs) implicate insecure attachment representations and inadequate self-regulatory skills to cope with emotional distress. Aims: The study aimed to examine relationships between SIBs, attachment, and emotion regulation among college students. Materials and Methods: A total of 470 participants from undergraduate and postgraduate colleges completed the functional assessment of self-mutilation questionnaire, attachment style questionnaire, and the difficulties in emotion regulation scale. Results: Results indicated that 31.2% of the participants reported SIB in the past year, with the mean age of onset being 15.9 years. Moderate/severe forms of self-injury (e.g., cutting, burning) were reported by 19.8% of the sample. Self-injuring youth reported higher levels of anxious attachment, preoccupation with relationships and need for approval in relationships, and difficulties in all domains of emotion regulation. Logistic regression analysis identified preoccupation with relationships and impulse control difficulties as predictors of SIB. Conclusions: The findings have implications for comprehensive interventions for self-injuring youth.

Keywords: Attachment, emotion regulation, India, self-injurious behavior, youth
attachment and self-injury among individuals with borderline personality disorder. Anxious attachment in romantic relationships also predicted nonsuicidal self-injury in a community sample of female university students.\(^{[14]}\) In a contrary finding, early attachment difficulties did not differentiate self-injuring college students from those who did not engage in this behavior.\(^{[4]}\)

Despite the growing interest in understanding the antecedents and risk factors associated with nonsuicidal self-injury, studies that examine both attachment styles and emotion regulation difficulties are scarce.\(^{[15]}\)

The present study attempts to contribute to the limited research based on SIB and its relationship to emotion regulation and attachment styles, in a community sample of youth. Exploration of these intersections may contribute to the strengthening of theoretical psychopathology models. In addition, the findings may point to avenues for intervention in working with this vulnerable segment of youth in our nation.

**MATERIALS AND METHODS**

**Sample/participants**

Four hundred and seventy participants from undergraduate (89.6%) and postgraduate (10.4%) English medium colleges across Bengaluru were recruited for the study. The mean age of the sample was 20.25 years (standard deviation [SD] = 1.70). The participants were predominantly female (70%) and a majority of them were single (95.3%), with 1.1% married and 0.4% separated or divorced. In terms of living arrangements, 70.3% were living with their families, 22% were living with a roommate, 7.2% were living alone, and 4.5% reported other living arrangements. With respect to family composition, 79.2% were from intact families, 13.2% were from joint families, 6.7% had a single parent, and 0.9% indicated having a parent and a step-parent.

**Measures**

**Sociodemographic questionnaire**
The questionnaire included information about age, gender, marital status, educational level and course, family composition, and living arrangements.

**Functional assessment of self-mutilation**\(^{[16]}\)

This self-report measure assesses the frequency, methods, characteristics, and functions of suicidal SIB. Engagement in different methods of SIB in the past 12-month period is assessed through 11 items. These include methods classified as “moderate/severe” and “minor.” Additional items assess whether the behaviors were suicidal or nonsuicidal in nature, the concurrent use of alcohol or drugs, the degree of impulsivity and pain experienced, the age of onset of SIB, and possible reasons for engaging in SIBs. Adequate psychometric properties have been reported with normative\(^{[16]}\) as well as psychiatric samples.\(^{[17]}\)

The paper focuses on the frequency, methods, and selected characteristics of SIB reported in the past year. More detailed results on the characteristics of self-injury in this sample are available in a previous publication.\(^{[18]}\)

**Attachment style questionnaire**\(^{[19]}\)

This 40-item self-report measure assesses five dimensions that reflect two underlying attachment dimensions, anxiety and avoidance, and is answered on a 6-point Likert scale. One subscale represents secure attachment (confidence in self and others) while the other four represent a particular aspect of insecure attachment; discomfort with closeness, relationships as secondary; need for approval and preoccupation with relationships. Discomfort with closeness describes a pattern of protecting from the feeling of vulnerability by being distant and not attaching to others; relationships as secondary refer to a pattern where individuals protect themselves against hurt and vulnerability by emphasizing achievement and independence; need for approval reflects individuals’ need for others’ acceptance and confirmation; preoccupation with relationships involves an anxious reaching out to others to fulfill dependency needs.

Two primary dimensions underlying attachment styles have been derived from the Attachment style questionnaire items.\(^{[20]}\) Attachment anxiety (13 items) refers to an individual’s excessive need for reassurance, fear of rejection, and a desire to merge with relationship partners. Attachment avoidance (16 items) reflects the extent to which an individual avoids intimacy and is distrusting of others. Individuals with high levels of avoidance and/or anxiety possess insecure attachment while individuals with low avoidance and anxiety are securely attached.

The questionnaire has adequate internal consistency (\(\alpha = 0.80\)) and test-retest reliability over a 10-week period ranged from 67 to 78.\(^{[19]}\)

**Difficulties in emotion regulation scale**\(^{[21]}\)

The DERS is a 36-item self-report questionnaire, answered on a 5-point Likert scale that assesses difficulties in emotion regulation. The measure gives a total score as well as scores on six subscales derived through factor analysis; Nonacceptance of emotional responses, difficulties engaging in the goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to effective emotion regulation strategies, and lack of emotional clarity. Higher scores indicate greater emotion regulation difficulties.
The subscales of the DERS yield good to excellent internal consistencies (α = 0.76–0.89) and subscale intercorrelations range from negligible to high (range: r = 0.04 to r = 0.68) and have adequate construct validity.

**Procedure**

The Institutional Ethical Clearance was obtained for the study. A pilot study was conducted to finalize the measures and procedure. Eight of the twelve colleges approached provided consent for participation and groups of students were selected based on practical considerations of space, scheduling, and availability. Written informed consent was obtained from all participants and questionnaires were administered in groups. A debriefing session was carried out with the participants where issues relating to stress, coping, and the importance of help-seeking and accessing social support were discussed. A handout with the contact information of mental health services was provided to each participant.

**Analysis**

Descriptive statistics such as frequencies, percentages, means, and SDs were computed to measure occurrence and characteristics of SIBs. Group comparisons were analyzed using t-tests. The association between emotion regulation and attachment domains was assessed using the Pearson product-moment correlation method. The emotion regulation and attachment domains that were significant in the t-test were considered in the logistic regression analyses. The results of this analysis are expressed as odds ratio, 95% confidence interval.

**RESULTS**

Table 1 indicates that the rate of SIB in the past year was 31.2%. While 19.8% of the sample reported engaging in moderate/severe forms of SIB, 11.3% of the individuals engaged in minor SIB only. Among those who reported SIBs, the most common pattern was a combination of moderate/severe and minor forms of SIB (15.3%), with only 4.5% engaging in moderate/severe methods alone. The most common method endorsed by the participants was self-hitting (15.2%), a “minor” method of SIB followed by cutting (13.2%), a “moderate/severe” method of SIB. The mean number of types of SIB performed was 2.6 (SD = 1.8, median = 2.0, mode = 1, range: 1–10). The mean age of the first SIB behavior was 15.9 years (SD = 3.0; median = 16.0; mode = 16.0; range: 7–25 years). A majority of self-injury acts were not accompanied by suicidal intent (84.8%).

The results [Table 2] indicated significantly higher levels of anxious attachment (P = 0.00) among youth who reported self-injuring behavior in the past year. Self-injuring youth exhibited higher levels of preoccupation with relationships (P = 0.00) and need for approval in relationships (P = 0.01).

There were no significant differences between the two groups in levels of secure attachment (confidence in relationships) and in the avoidant attachment domain, or in terms of viewing relationships as secondary and experiencing discomfort in relationships.

The results also indicated that the levels of emotion regulation differed significantly between the group of self-injurers and those who did not report SIB. The self-injuring group had significantly greater difficulties in terms of nonacceptance of emotions (P = 0.01), goal-directed behavior (P = 0.01), impulse control (P = 0.01), lower levels of emotional clarity (P = 0.03), and limited access to emotion regulation strategies (P = 0.01). The self-injuring youth had significantly lower scores on the lack of emotional awareness subscale (P = 0.01) as compared to those who did not report SIB. This indicates a greater sensitivity and awareness of their emotional states among youths who reported self-injury in the past year.

An additional analysis compared levels of attachment and emotion regulation in two groups; the first with reporting
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Table 2: Comparison of attachment patterns (Attachment Style Questionnaire) and emotion regulation (Difficulties in Emotion Regulation Scale) between college students with and without self-injurious behavior (n=470)

|                      | Self-injurious behavior | No self-injurious behavior | t     | P      |
|----------------------|-------------------------|----------------------------|-------|--------|
|                      | Mean  | SD   | Mean  | SD   |       |        |
| ASQ                  |       |      |       |      |       |        |
| Confidence in relationships | 33.68 | 5.24 | 33.76 | 5.30 | 0.15  | 0.88  |
| Relationships as secondary | 22.93 | 6.09 | 22.60 | 6.47 | 0.51  | 0.61  |
| Need for approval     | 25.39 | 5.52 | 23.93 | 5.28 | 2.71  | 0.01**|
| Discomfort in closeness | 39.66 | 5.97 | 38.60 | 5.83 | 1.79  | 0.08  |
| Preoccupation         | 33.88 | 6.00 | 30.50 | 5.83 | 5.10  | 0.00**|
| Avoidant attachment   | 59.30 | 10.58 | 58.99 | 13.45 | 0.36  | 0.75  |
| Anxious attachment    | 48.09 | 8.07 | 44.32 | 10.47 | 3.77  | 0.00**|
| DERS                  |       |      |       |      |       |        |
| Nonacceptance of emotions | 16.63 | 5.35 | 14.63 | 5.20 | 3.7   | 0.00**|
| Difficulty in goal directed behavior | 16.42 | 4.27 | 14.80 | 4.37 | 3.70  | 0.00**|
| Impulse control difficulties | 17.05 | 5.59 | 14.37 | 4.99 | 4.90  | 0.00**|
| Lack of emotional awareness | 15.11 | 4.00 | 16.24 | 4.29 | 2.67  | 0.01**|
| Limited access to emotional regulation strategies | 21.61 | 6.99 | 19.01 | 6.41 | 3.88  | 0.00**|
| Lack of emotional clarity | 13.09 | 3.90 | 12.22 | 3.86 | 2.24  | 0.03* |
| Emotional regulation total | 116.34 | 24.84 | 104.50 | 25.30 | 6.46  | 0.00**|

**P<0.01; *P<0.05. SD – Standard deviation; ASQ – Attachment Style Questionnaire; DERS – Difficulties in Emotion Regulation Scale

The results of the study revealed that the rate of SIB in the past year among a community sample of Indian college students was 31.2%. This indicates that SIBs are not uncommon among college youth and this rate falls toward the higher end of global estimates, ranging between 11.7% and 46.5%, in previous empirical research.[4,22-26] The relatively high rates found in this study could reflect the use of a multi-item questionnaire[27] and the inclusion of relatively minor forms of self-injury.

Recent research has moved away from examining the relationship between overall attachment and SIB and has begun to focus on the possible differential role of subtypes of insecure attachment. There is preliminary evidence that anxious attachment is associated more strongly with SIBs while avoidant attachment has a more limited impact.[28] The present study also found that levels of avoidant attachment did not differ between the groups of self-injuring and nonself-injuring youth. Individuals who endorsed SIBs also reported higher levels of reaching out to others to fulfill their dependency needs and tended to seek others’ approval for fear of rejection. The finding is consistent with studies using self-report questionnaires that found anxious attachment styles to be linked with a greater incidence of SIBs in community populations.[14,29] in psychiatric inpatients[12] and among individuals with borderline personality disorder.[13] Individuals with anxious attachments are described as more attentive to and expressive of their distress and, therefore, tend to be moderate/severe self-injury and the second with minor self-injury only. There were no significant differences in the levels of attachment among those who engaged in moderate/severe forms of self-injury (e.g., cutting, burning, self-tattooing) and those who reported the relatively minor methods (e.g., self-hitting, biting, wound-picking) alone. There were no significant differences between the two self-injuring groups with respect to overall levels of emotion-regulation, except in the domain of impulse control. The group reporting moderate/severe forms of self had significantly lower levels of impulse control than the self-injuring group using minor methods (t = 2.08; P = 0.04).

Logistic regression analysis was carried out to identify probable risk factors that could predict SIBs [Table 3]. The seven independent variables selected were the emotion regulation and attachment domains whose levels differed significantly between groups of self-injuring and noninjuring groups. These included nonacceptance of emotions, goal-directed behavior, impulse control, lower levels of emotional clarity, limited access to emotion regulation strategies, need for approval, and preoccupation with relationships.

The model explained 11.2% (Nagelkerke R²) of the variance in SIB and correctly classified 70% of the individuals. The results indicated that higher levels of impulse control difficulties and a preoccupied attachment pattern of strongly desiring close relationships while fearing abandonment, both increased the likelihood of SIB.

**DISCUSSION**
more emotionally reactive. SIBs could be employed as a way of expressing and reacting to their overwhelming feelings of distress.

Logistic regression analysis identified higher levels of preoccupied attachment and impulse control difficulties as predictive of SIB among youths. The preoccupied attachment has also been associated with borderline personality disorder, a diagnostic category described as vulnerable to acts of self-harm. Preoccupied attachment is conceptualized to be associated with hyperactivation of the attachment system in the face of perceived threat or emotional distress and hypervigilance to the possibility of rejection or abandonment. This is accompanied by maladaptive appraisals, coping, and problem-solving and can intensify negative emotional experiences. Self-injury could be used as a method of coping with the negative emotions. The findings also offer indirect support for theoretical models which trace developmental pathways from insecure attachment in childhood and view self-injurious acts as compensatory relational and emotion regulation strategies.

The findings of the study support literature, suggesting that individuals who self-injured have difficulties regulating their emotions. Further, individuals who self-injured may not be as effective in their use of emotion regulation skills and may turn to maladaptive methods, such as self-injury, when their adaptive methods are overwhelmed. The present findings amplify our understanding of these processes as self-injuring youth indicated significantly higher levels of nonacceptance of emotions, difficulty in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. Impulsivity has theoretically been proposed as an important construct in SIBs and the present findings illuminate the particular role of impulsivity in increasing the risk for self-injuring acts. In addition, self-injuring youth, using methods such as cutting or burning, reported higher impulsivity than those using less severe methods such as self-hitting or wound-picking. Previous research has found higher impulsivity among self-injurers when using self-reports. One possible explanation proposed for this discrepancy could be that self-injuring individuals tend to exhibit impulsivity only in the context of negative emotions.

The results have implications for the therapeutic paradigms for self-injuring youth. They highlight the importance of the relational context and attachment vulnerabilities as well as the need to target specific difficulties in regulating emotions. Interventions that teach adaptive strategies for emotion regulation have been effective for self-injuring women with borderline personality disorder and these can be drawn from components of dialectical behavior therapy.

The results suggest that interventions targeting SIB may need to widen the individual focus and assess the relational domain. The potential healing and safety-affirming role of the therapeutic relationship and the importance of a relational perspective in working with self-injuring youth need more attention. In addition, therapeutic strategies should be responsive to any attachment vulnerabilities that may be present.

The use of a multidimensional conceptualization of emotion regulation represents the strength of the study. The sample composition of urban, largely female college-going youth arises from the use of a purposive sampling method and this restricts the generalizability of the results. There are methodological limitations arising from the use of a self-report measure of attachment; all attachment representations may not be consciously reportable. The use of an interview-based measure like the Adult Attachment Interview could help clarify the links between specific attachment representations and self-injuring acts.

Future studies could explore the links between attachment and specific patterns of self-injury (e.g., severity, methods, age of onset, disclosure). Attachment style is seen as a distal risk factor for psychopathology and future research could include potential mediators of SIBs. This would allow for a clearer understanding of the complex pathways to self-injuring acts and better-informed preventive and therapeutic approaches.

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Conflicts of interest
There are no conflicts of interest.

Table 3: Logistic regression analysis of variables predicting self-injurious behaviors

| Variables                        | B     | SE    | OR (95% CI)       | P   |
|---------------------------------|-------|-------|-------------------|-----|
| Impulse control difficulties    | 0.07  | 0.02  | 1.067 (1.024-1.112) | .00 |
| Preoccupation with relationships| 0.07  | 0.02  | 1.068 (1.021-1.107) | .00 |

B = Logistic regression coefficients; SE = Standard error; CI = Confidence interval; Nagelkerke R²=0.11; 2

\[37,38\] One possible explanation suggested for this discrepancy could be that self-injuring individuals tend to exhibit impulsivity only in the context of negative emotions.

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