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Functions of non-suicidal self-injury in adolescents and young adults with Borderline Personality Disorder symptoms

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ABSTRACT

Rates of deliberate non-suicidal self-injury (NSSI) increase during adolescence and young adulthood, particularly in clinical samples, making these important developmental stages for understanding the functions of NSSI. Borderline Personality Disorder (BPD) symptoms also begin to emerge in adolescence, though little research has examined relationships between BPD symptoms and the functions of NSSI in youth, the primary goal of the present study. Adolescents and young adults recruited from an outpatient psychotherapy clinic ($N=36$) endorsed a range of NSSI functions on the Inventory of Statements about Self-Injury (Klonsky and Glenn, 2009). Participants engaged in NSSI to serve intrapersonal functions (e.g., regulate affect, punish oneself) more frequently than interpersonal functions (e.g., bond with peers, establish autonomy). As predicted, linear regression analyses indicated that BPD affective dysregulation symptoms were associated with the intrapersonal but not the interpersonal functions of NSSI. In contrast, BPD interpersonal dysfunction symptoms were differentially associated with the interpersonal rather than intrapersonal functions of NSSI. These preliminary data indicate that clusters of BPD symptoms show unique relationships with functions of NSSI in treatment-seeking adolescents and young adults, relationships that can be used to target specific functions of NSSI in treatment planning.

1. Introduction

Non-suicidal self-injury (NSSI) is characterized by the deliberate destruction of body tissue that is not motivated by intent to die (Nock, 2010) and is a growing public health concern. In community samples, 13–36% of adolescents and 17–19% of young adults report a history of NSSI (Whitlock et al., 2006; Lloyd-Richardson et al., 2007; Hankin and Abela, 2011; Zetterqvist et al., 2013). Rates are much higher in treatment-seeking samples, with studies estimating that between 60% and 80% of adolescent psychiatric patients engage in NSSI (DiClemete et al., 1991; Briere and Gil, 1998; Nock and Prinstein, 2004). Further, NSSI often begins in early adolescence (Glenn and Klonsky, 2011; Zetterqvist et al., 2013), making this a critical developmental period for understanding the functions and developing effective interventions for these destructive behaviors (Washburn et al., 2012).

NSSI is particularly prevalent in patients with symptoms of Borderline Personality Disorder (BPD; Nock et al., 2006; Crowell et al., 2012). A study of female adolescents with a history of NSSI found that 51.7% met criteria for a diagnosis of BPD (Nock et al., 2006). Patients with BPD more often report the onset of NSSI during adolescence than individuals without BPD (Symons, 2002), underscoring the importance of understanding the functions of these behaviors in adolescents who exhibit BPD symptoms. BPD symptom severity has also been associated with a greater likelihood of engaging in repetitive NSSI than a single episode (Muehlenkamp et al., 2011). Early identification and intervention of NSSI in adolescents with BPD symptoms is likely vital to improving outcomes, as BPD has been found to predict future NSSI in young adults (Glenn and Klonsky, 2011).

One relatively understudied question is whether specific symptoms of BPD can provide information about risk for NSSI and the

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functions of these behaviors in adolescence. Our literature review identified one study to date on this topic. Using archival data from outpatient charts, Muehlenkamp et al. (2011) found that confusion about the self was more highly associated with a history of suicide attempts, and chaotic relationships were more strongly associated with NSSI. These findings suggest some specificity in the relations of BPD symptoms with the tendency to engage in NSSI and suicide attempts. However, the Muehlenkamp et al. (2011) study did not examine how specific features of BPD relate to different motivations for NSSI, information that could prove to be useful for identifying NSSI-related treatment targets in youth with BPD symptoms.

Theoretical models of NSSI posit that it is maintained through reinforcement processes; reflecting positive and negative reinforcements in the interpersonal and intrapersonal domains (Nock, 2010). NSSI can elicit support from others (e.g., positive interpersonal reinforcement), lessen harsh criticism from parents (e.g., negative interpersonal reinforcement), increase feelings of self-control (e.g., positive intrapersonal reinforcement), or provide relief from negative affect (e.g., negative intrapersonal reinforcement) (Gratz, 2003; Nock, 2010). The experiential avoidance model (Chapman et al., 2006) emphasizes the intrapersonal functions of NSSI and related behaviors, and attributes them to a negative reinforcement loop whereby relief from aversive emotional arousal and internal experiences perpetuate deliberate NSSI. Similar negative reinforcement models have been proposed to explain the relationship between emotional and behavioral dysregulation in BPD based on research suggesting that intense emotional dysregulation triggers NSSI in BPD (Linehan, 1993; Selby and Joiner, 2009). For example, the emotional cascade model (Selby and Joiner, 2009) posits that NSSI (and other impulsive behaviors) temporarily interrupt the ruminative processes that intensify negative emotions in BPD, which in turn reinforces future behavioral dysregulation, including NSSI. Empirical studies are consistent with these theoretical models and have identified a range of functions that serve to maintain NSSI, including emotion regulation, physical externalization of emotional pain, and communication with others, with affect regulation being particularly common (Gratz, 2003; Klonsky and Muehlenkamp, 2007; Zetterqvist et al., 2013).

Given the diverse functions of NSSI, methods for identifying potential motivations for these destructive behaviors in clinical settings is an important area of research with direct relevance to treatment planning. Research to date indicates that adult patients with BPD report multiple motivations for NSSI. Desire to reduce tension, alleviate aversive emotions, and punish oneself are frequently endorsed functions (Kleindienst et al., 2008). One issue that has not been previously examined is whether functions of NSSI correlate in meaningful ways with clusters of BPD symptoms. Taxometric analyses of patient samples indicate that the underlying structure of BPD is dimensional, and factor analytic work supports both unitary and multidimensional factor models (Trull et al., 2011). A consistent factor structure identified in patient samples is a 3-factor model of BPD: *Disturbed Relatedness* measures the interpersonal dysfunction associated with BPD, *Affect Regulation* measures the emotional dysregulation symptoms of BPD (e.g., problems with anger and emotional instability), and *Behavioral Dysregulation* measures the tendency to engage in impulsive and suicidal behavior (e.g., gestures/threats/self-mutilation) (Sanislow et al., 2000, 2002; Andión et al., 2011). Identifying functions of NSSI that differentially relate to these symptom dimensions may offer ways to more effectively treat the factors that maintain NSSI. For instance, the intrapersonal functions of NSSI may be most relevant for maintaining NSSI in youth who display affect dysregulation, whereas the interpersonal functions of NSSI may be most relevant for maintaining NSSI in youth who report significant interpersonal dysfunction (Muehlenkamp et al., 2013). Using the symptoms of BPD as indirect indicators of motivations for NSSI could be helpful to clinicians working to treat NSSI in youth with BPD.

The primary goal of the present study was to investigate the psychological functions of NSSI and how they relate to BPD symptoms in a clinical sample of adolescents and young adults. We expected youth with BPD *Affect Regulation* symptoms (e.g., angry outbursts, emotional instability) to be more likely to engage in NSSI for intrapersonal reasons (e.g., affect regulation, anti-dissociation), based on research demonstrating that NSSI is used to regulate emotional dysregulation (e.g., Chapman et al., 2006; Selby and Joiner, 2009). In contrast, we hypothesized that youth with BPD *Disturbed Relatedness* symptoms (e.g., relationship and interpersonal dysfunction) to be more likely to engage in NSSI for interpersonal reasons (e.g., autonomy, revenge), given the direct relevance of these NSSI functions for coping with interpersonal dysfunction in BPD. We did not expect the *Behavioral Dysregulation* symptoms to show unique relationships with NSSI functions, because a mechanistic link between these symptoms (e.g., the tendency to act on impulse and repeatedly engage in suicidal gestures/threats/self-mutilation) and the NSSI functions was less apparent.

2. Methods

2.1. Participants and procedures

Participants consisted of 36 adolescents and young adults (88.6% female) ages 13–24 ($M=16.7$, S.D.$=2.3$) seeking treatment for both BPD symptoms and NSSI. Participants were recruited from an outpatient psychotherapy clinic that specializes in Dialectical Behavior Therapy for Adolescents and Young Adults (DBT). All admissions to the program from 10/2009 to 11/2012 were offered the opportunity to participate and two patients declined. Patients were eligible to participate if they completed the study measures and reported engaging in one or more of the forms of NSSI assessed by the Inventory of Statements about Self-injury (e.g., hitting self, burning, carving, cutting; ISAS; Klonsky and Glenn, 2009). All participants reported a history of repetitive NSSI, except one who reported a single episode of NSSI. Participants self-identified primarily as Caucasian (57.2%), followed by Asian (14.3%), Latino (11.4%), mixed ethnicity (11.4%), and African-American (5.7%). Participants were screened at intake for common current Axis I psychiatric disorders using the Kiddie-Schedule for Affective Disorders and Schizophrenia Screen Interview (Kaufman et al., 1997), and 88.6% met criteria for Major Depressive Disorder, 22.9% met criteria for Generalized Anxiety Disorder, 17.1% met criteria for Posttraumatic Stress Disorder, and 14.3% met criteria for Anorexia Nervosa or Bulimia Nervosa.

Participants completed structured interviews with a clinical psychologist and completed a series of questionnaires. Prior to participation, research staff obtained written informed consent from the parents or guardians of minor participants as well as assent from minor participants. Young adult participants provided written informed consent. Study procedures were approved by the University's Committee on Human Research.

2.2. Measures

BPD symptoms were assessed using the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II; First et al., 1997), a widely-used and well-validated instrument that shows adequate reliability with adolescent psychiatric patients (Lyons-Ruth et al., 2013). A clinical psychologist rated the presence or absence of the nine BPD symptoms based on the participant's self-report, collateral information from his or her parent, and observations of the participant during the interview. Symptoms were coded as present if they met the threshold criteria (see Table 1 for descriptive statistics). Symptoms were summed to create a 3-factor model of BPD that has been identified and replicated in prior factor analytic work (Sanislow et al., 2000, 2002; Andión et al., 2011): *Disturbed Relatedness* (chronic emptiness, identity disturbance, unstable/intense interpersonal relationships, transient/stress-related paranoia or dissociation), *Affect Regulation* (recurrent anger problems, affective instability, fears of abandonment), and *Behavioral Dysregulation* (self-damaging impulsivity, recurrent suicidal gestures/threats/self-mutilation). Approximately two-thirds of the sample (65.7%, $n=23$) qualified for a diagnosis of BPD (Total BPD symptoms: $M=5.8$, S.D.$=1.9$; Min/Max$=2/9$).

Participants completed the well-validated Inventory of Statements about Self-injury (ISAS; Klonsky and Glenn, 2009; Glenn and Klonsky, 2011) to assess the relevance of 13 functions of NSSI (listed in Table 1) on a scale from 0 ("*Not*

Table 1
Descriptive statistics for study measures ($N=35$).

Inventory of Statements about Self-Injury	Mean (S.D.)	Min/Max
Intrapersonal Functions Factor	+3.4 (1.2)	4/26
Affect regulation	4.6 (1.4)	1/6
Anti-dissociation	2.8 (2.2)	0/6
Anti-suicide	2.8 (1.9)	0/6
Marking distress	2.9 (1.9)	0/6
Self-punishment	4.1 (1.7)	0/6
Interpersonal Functions Factor	+1.4 (1.3)	0/36
Autonomy	1.1 (1.6)	0/6
Interpersonal boundary	2.3 (2.1)	0/6
Interpersonal influence	1.4 (1.7)	0/6
Peer bonding	0.6 (1.2)	0/5
Revenge	1.2 (1.8)	0/6
Self-care	1.8 (1.7)	0/6
Sensation-seeking	1.3 (1.6)	0/6
Toughness	1.6 (2.0)	0/6
Borderline Personality Disorder symptoms		
Disturbed Relatedness Factor	2.3 (1.3)	0/4
Chaotic relationships	0.6 (0.5)	0/1
Paranoia/dissociation	0.5 (0.5)	0/1
Chronic emptiness	0.7 (0.5)	0/1
Identity disturbance	0.5 (0.5)	0/1
Affect Regulation Factor	1.9 (0.8)	0/3
Affective instability	0.9 (0.4)	0/1
Recurrent anger problems	0.6 (0.5)	0/1
Fears of abandonment	0.5 (0.5)	0/1
Behavioral Dysregulation Factor	1.7 (0.5)	0/2
Impulsivity	0.8 (0.4)	0/1
Recurrent suicidal behavior	0.9 (0.4)	0/1

Note. +The means and standard deviations of the interpersonal functions and intrapersonal functions Factors were prorated to allow them to be directly compared in terms of endorsement frequency by dividing the summed factor scores by the number of contributing subscales. Inventory of Statements about Self-Injury (Klonsky and Glenn, 2009).

Table 2
Bivariate Relationships among SCID-II Borderline Personality Disorder symptoms and the Inventory of Statements about Self-injury ($N=35$).

Borderline Personality Disorder symptoms	ISAS intrapersonal functions	ISAS interpersonal functions
Disturbed Relatedness Factor	0.16	0.48*
Chaotic relationships	−0.02	0.50*
Paranoia/dissociation	0.13	0.41*
Chronic emptiness	0.10	0.18
Identity disturbance	0.20	0.13
Affect Regulation Factor	0.45*	0.11
Affective instability	0.43*	−0.08
Recurrent anger problems	0.24	0.12
Fears of abandonment	0.23	0.13
Behavioral Dysregulation Factor	−0.03	0.13
Impulsivity	−0.04	0.08
Recurrent suicidal behavior	0.01	0.09

Note. ISAS=Inventory of Statements about Self-Injury (Klonsky and Glenn, 2009).
* $p<0.05$.

Relevant") to 2 ("*Very Relevant*"). Based on previous research (Klonsky and Glenn, 2009), the functions were summed to create separate factors that index interpersonal functions of NSSI (i.e., autonomy, interpersonal boundaries, interpersonal influence, peer-bonding, self-care, revenge, sensation seeking, toughness; Cronbach's alpha=0.94) and Intrapersonal Functions of NSSI (i.e., affect-regulation, anti-dissociation, anti-suicide, marking distress, self-punishment; Cronbach's alpha=0.84). The ISAS factors were prorated by dividing the total score of each factor by the number of contributing subscales to allow for direct comparisons of their means and standard deviations. The interpersonal functions and intrapersonal functions factors correlated moderately ($r=0.40$, $p<0.02$).

2.3. Statistical analysis

Bivariate correlations between study variables were assessed with Pearson or point-biserial correlation coefficients. The within-sample difference between the ISAS factors was assessed using a paired-samples t-test. Two linear regression analyses were used to test the association of the BPD factors with the intrapersonal vs. interpersonal functions of NSSI. Age and gender were entered as covariates in Block 1 and the BPD factors were entered as explanatory variables in Block 2. Given the moderate correlation between the ISAS factors, we included the non-predicted ISAS factor in the first block of each analysis to ensure that relationships between the BPD factors and NSSI functions were not due to shared variance among the ISAS factors. Supplemental analyses showed that inclusion of comorbid Axis I diagnoses as covariates and examination of BPD diagnostic status as a moderator did not change the reported findings or produce new results. Collinearity statistics were within acceptable ranges (tolerance levels >0.53; Gaur and Gaur, 2006), and bivariate correlations are provided as a reference for interpreting the multivariate regression analyses in Table 2. Data were examined for outliers and non-linear distributions. No clear univariate outliers were present. One bivariate outlier was removed from analysis, which did not significantly change the findings. The BPD factors and ISAS factors were not excessively skewed or kurtotic (range -1.3 to 1.0). Two-tailed tests and a $p<0.05$ significance level were used.

3. Results

To characterize the sample, descriptive statistics on the motivations for NSSI are provided in Table 1. Youth more often endorsed engaging in NSSI to serve intrapersonal than interpersonal functions, $t_{(34)}=8.6$, $p<0.001$. Within the intrapersonal domain, youth reported using NSSI as a mechanism for regulating their affect and punishing themselves, which were the most frequently endorsed of all of the functions of NSSI. Within the interpersonal domain, the most frequent function of NSSI reported was engaging in NSSI behavior to create an interpersonal boundary, whereas engaging in NSSI to bond with peers was the least frequently endorsed of all the NSSI functions.

The primary aim of the study was to assess whether BPD symptom clusters show dissociable relationships with the intrapersonal and interpersonal functions of NSSI. Bivariate correlations are provided in Table 2 as a reference for interpreting the multivariate regression analyses. As hypothesized, the intrapersonal functions of NSSI correlated positively with the BPD Affect Regulation Factor and the interpersonal functions of NSSI correlated positively with the BPD Disturbed Relatedness Factor at the bivariate level. The multivariate linear regression analyses produced a similar pattern of results. Beta weights, R^2, and ΔR^2 for these analyses are presented in Table 3. As hypothesized, BPD Affect Regulation evidenced a significant positive association with the intrapersonal functions of NSSI, $\beta=0.63$, $p<0.001$, whereas the BPD Disturbed Relatedness and Behavioral Dysregulation factors did not (p's >0.10). Also consistent with hypotheses, the BPD Disturbed Relatedness factor showed a positive association with the interpersonal functions of NSSI, $\beta=0.54$, $p=0.002$. The BPD Affect Regulation and BPD Behavioral Dysregulation factors, in contrast, were not significantly associated with the interpersonal functions of NSSI ($ps>0.08$). These findings provide preliminary evidence that the motivations for NSSI in treatment-seeking youth are differentially related to the BPD symptom clusters.

4. Discussion

Adolescence and young adulthood are critical developmental periods for understanding the relationship between NSSI and BPD symptoms, as rates of NSSI peak during this period and BPD symptoms begin to crystalize. The present findings suggest that intrapersonal functions (i.e., affect regulation and

Table 3
Linear regression of 3-Factor Borderline Personality Disorder symptoms on the Inventory of Statements about Self-injury ($N=35$)

	ISAS intrapersonal factor			ISAS interpersonal factor		
	B	*SE B*	*β*	*B*	*SE B*	*β*
Block 1						
Age	−0.04	0.04	−0.19	−0.04	0.06	−0.10
Gender	−0.74	3.18	−0.04	1.64	5.38	0.05
Block 2						
BPD Disturbed Relatedness	−1.38	0.82	−0.29	4.32	1.28	0.54*
BPD Affect Regulation	4.44	1.10	0.63*	−4.31	2.33	−0.36
BPD Behavioral Dysregulation	−1.81	1.63	−0.16	2.46	2.86	0.13

Note. ISAS Intrapersonal factor: R^2 for *Block* 1 = 0.20. $p=0.067$; ΔR^2 for *Block* 2 = 0.29, $p=0.004$.
ISAS Interpersonal factor: R^2 for *Block 1* = 0.17, $p=0.11$; ΔR^2 for *Block 2* = 0.26, $p=0.014$. NSSI = Non-Suicidal Self-Injury. ISAS = Inventory of Statements about Self-Injury (Klonsky and Glenn, 2009). BPD = Borderline Personality Disorder.
Gender: male = 1 and female = 0.

* $p < 0.01$.

self-punishment) are particularly relevant for the maintenance of NSSI in treatment-seeking youth with BPD symptoms, more so than interpersonal functions (e.g., peer bonding, establishing autonomy). Conceptualizing BPD as a multidimensional disorder unveiled unique relationships between BPD symptom clusters and functions of NSSI. Specifically, BPD affective dysregulation symptoms related positively to intrapersonal functions, whereas BPD disturbed relatedness symptoms related positively to interpersonal functions. In conjunction, the findings extend previous work by illustrating the differential relevance of intrapersonal vs. interpersonal functions of NSSI for BPD affect dysregulation and interpersonal dysfunction symptoms, respectively. Further, results add an important dimension to previous work by examining these relationships in treatment-seeking adolescents.

The frequent endorsement of NSSI to regulate internal experiences, especially strong emotions, replicates previous empirical studies in adults (Kleindienst et al., 2008; Klonsky and Olino, 2008; Lindholm et al., 2011) and adolescents (Zetterqvist et al., 2013). The high endorsement of using NSSI to punish oneself is also consistent with previous research on BPD in adults (e.g., Brown et al., 2002) and has been theorized to serve as a method for avoiding and temporarily alleviating feelings of guilt and shame (Chapman et al., 2006). The relatively lower endorsement of interpersonal functions than intrapersonal functions contradicts the common belief that NSSI and suicide-related behaviors (e.g., gestures, attempts) in BPD are primarily driven by a desire to manipulate others or get attention (Linehan, 1993). Similarly, the idea that NSSI in youth is largely motivated by a desire for social acceptance and closeness was not supported in our study. Instead, use of NSSI to bond with peers was the least frequently endorsed function. One clinical implication of this finding is that conceptualizing NSSI as primarily motivated by peer pressure rather than emotional dysregulation may minimize the seriousness of the behavior and consequently, decrease referrals for youth in need of clinical services.

Clinically meaningful relationships of BPD symptoms with functions of NSSI also emerged. As hypothesized, symptoms of affect dysregulation, particularly emotional instability, were positively associated with functions of NSSI that serve to regulate intrapersonal experiences, such as negative affect, avoiding dissociation, and self-punishment. This finding supports theoretical models of NSSI and BPD that centralize the use of NSSI as a mechanism for avoiding unwanted emotional experiences, such as the experiential avoidance and emotional cascade models (Chapman et al., 2006; Selby and Joiner, 2009). Importantly, our findings extend previous work by demonstrating that these motivations for NSSI are more frequently endorsed by youth who present with BPD affect dysregulation symptoms compared to those with predominately interpersonal dysfunction symptoms. This finding makes sense in the context of empirical work showing that adolescents and young adults with NSSI endorse higher levels of negative affect and have more difficulty regulating intense emotions than those who do not (Laye-Gindhu and Schonert-Reichl, 2005; Nock and Mendes, 2008).

In contrast, BPD interpersonal dysfunction symptoms, particularly chaotic relationships and paranoia, were selectively associated with interpersonal functions of NSSI, such as boundary setting and communicating toughness. A recent study on NSSI in college students reported that interpersonal motivations were more likely to initiate rather than maintain NSSI (Muehlenkamp et al., 2013), suggesting that relational difficulties may serve as important triggers for these behaviors. Present findings suggest that, among youth who report clinically-significant BPD interpersonal dysfunction, relationship conflict may be particularly salient and triggering, and therefore represent an important target of intervention for reducing NSSI.

The behavioral dysregulation symptoms did not evidence unique relationships with NSSI functions. The tendency to act impulsively and engage in suicide-related behavior frequently may not directly relate to youths' motivations for engaging in NSSI, but rather to how frequently they engage in NSSI to cope with stress. Overall, the unique associations of the BPD factors are consistent with research suggesting that the disorder consists of multiple symptom dimensions and broadens our knowledge of how these dimensions relate to clinical impairment.

Adolescence and young adulthood represent periods of elevated risk for NSSI as well as opportunities for early intervention and treatment. Our findings have clinical implications for targeting NSSI in youth with BPD symptoms in that they suggest that it may be possible to use diagnostic information to identify functions of NSSI and prioritize addressing these functions early in treatment. Specifically, treatment-seeking youth who endorse symptoms of interpersonal dysfunction may get benefit from therapeutic interventions aimed at increasing interpersonal skills early in the course of treatment, such as enhancing social skills, effective communication, social support, and boundary setting. NSSI in youth who report high levels of emotion dysregulation may be best served by initially focusing on increasing distress tolerance and emotion regulation skills. Dialectical Behavior Therapy has been shown to be efficacious for reducing NSSI and has core components that target both increasing interpersonal effectiveness, emotion regulation, and distress tolerance, with emerging evidence that this treatment is also efficacious with adolescents (Rathus and Miller, 2002; Fleischhaker et al., 2011). Targeting the

specific functions that maintain NSSI has the potential to produce early treatment gains, which increases the likelihood of treatment adherence and maintenance of gains (Haas et al., 2002).

The present study has several strengths, including the recruitment of a clinical sample of youth with both NSSI and BPD symptoms. It also benefits from use of a clinician-administered diagnostic instrument that is commonly used in clinical settings, increasing the applicability of the findings to clinical settings. The BPD factors accounted for 29% and 25% of the variance in the intrapersonal and interpersonal functions of NSSI, respectively, indicating that the regression analyses were able to detect moderate effects.

There are also limitations to the study. First, the modest sample size restricted our ability to detect small effect sizes; thus, null findings should be interpreted with caution and replication is needed in larger samples. Yet, the study group represents a difficult to recruit patient sample of youth with both NSSI and BPD symptoms, and it is comparable in size to other studies of patients with BPD symptoms and treatment-seeking patients with a history of NSSI (De la Fuente et al., 2004; Hagenhoff et al., 2013). Second, female patients were overrepresented in the sample, which may limit generalizability. However, the number of girls and women reflects the disproportionate representation of female patients in BPD samples (Johnson et al., 2003), suggesting that the results are generalizable to clinical settings. Third, a measure of inter-rater reliability was unavailable to assess the consistency of the ratings of BPD symptoms. However, structured diagnostic assessments were administered by doctoral-level clinicians who specialize in BPD to maximize the internal validity of these assessments. Fourth, results may not generalize to youth with a single episode of NSSI, given the sample characteristics. Finally, research on the newly proposed DSM-5 NSSI Disorder in relation to BPD is an important direction for future research. Preliminary data suggest that the disorders are characterized by similar impairments in functioning and co-morbid psychopathology, although research indicates they also show important differences. For instance, recent studies suggest that BPD is diagnosed more often in women and persons with an abuse history than NSSI Disorder, and each disorder explains unique variance in emotion regulation deficits (e.g., Selby et al., 2012; Glenn and Klonsky, 2013).

The present research extends our understanding of the functions that serve to maintain NSSI in youth seeking treatment for BPD symptoms. Study findings can be used to enhance the efficacy of interventions aimed at reducing harmful behaviors early in the course of their development.

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