



Brief report

A preliminary examination of the specificity of the functions of nonsuicidal self-injury among a sample of university students

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ABSTRACT

To examine whether individuals who engage in NSSI report different coping behaviors and regulatory needs compared to a non-injuring comparison group, we surveyed 1107 undergraduates using a Functions Index. Individuals who engaged in NSSI indicated greater use of coping behaviors for anti-dissociation, interpersonal influence, and self-punishment than the non-NSSI group.

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1. Introduction

Nonsuicidal self-injury (NSSI), which refers to the direct and deliberate destruction or alteration of bodily tissue without lethal intent (e.g., cutting, burning), is a serious health concern (Nock and Favazza, 2009). Among clinical inpatient samples, as many as 21% of adults (Briere and Gil, 1998) and 30–40% of adolescents engage in NSSI (Darche, 1990; Jacobson et al., 2008). NSSI is also prevalent among community-based samples, and recent estimates indicate that 13–38% of adolescents and young adults in the community report lifetime histories of NSSI (Gratz et al., 2002; Heath et al., 2008; Ross and Heath, 2002; Klonsky and Glenn, 2009). In addition to reporting higher levels of depression and anxiety (Gratz et al., 2002; Ross and Heath, 2002), individuals who engage in NSSI also report greater engagement in other health-risk behaviors (e.g., smoking, drinking alcohol) as compared to individuals who do not engage in NSSI (Hilt et al., 2008; Serras et al., 2010). In his integrated model of the development of self-injury, Nock suggests that NSSI may be associated with other problem behaviors, such as cigarette smoking, because these behaviors serve similar functions (Nock, 2009). More specifically, researchers have consistently found that individuals engage in NSSI to regulate intrapersonal (e.g., to reduce stress or anxiety) and interpersonal functions (i.e.,

to elicit help from others) (Nock and Prinstein, 2004; Klonsky and Glenn, 2009), but many other problem behaviors could similarly serve to regulate these needs (Nock, 2009). Researchers have yet to examine, however, whether individuals who engage in NSSI also engage in other coping behaviors to regulate similar affective and social experiences. Moreover, it is unclear whether individuals who engage in NSSI experience different regulatory needs and engage in different coping behaviors as compared to individuals who do not engage in NSSI. To address these gaps in the literature, we surveyed young adults about which coping behaviors they used when they wanted to regulate commonly endorsed NSSI functions (e.g., affect regulation, self-punishment) (Klonsky and Glenn, 2009).

2. Method

2.1. Participants

The current sample consisted of 1107 (70.3% female) first-year undergraduate students between the ages of 17 and 24 years (mean age = 19.11, S.D. = 1.05) from a mid-sized Canadian university who were part of a larger scale project on stress and coping in university. In total, 87.5% of the participants were born in Canada, and the most common ethnic backgrounds reported other than Canadian were British (19%), Italian (16.8%), French (9.5%) and German (9%), which is consistent with the broader demographics for the region.

2.2. Procedure

Students in first-year university were invited to complete a survey examining transitions to university by way of posters, classroom announcements, website postings, and residence visits. Students could participate regardless of academic

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major and were given monetary compensation (\$10) or course credit for their participation. The study was approved by the University Ethics board, and all participants provided active consent before participation. The survey was administered by trained personnel.

2.3. Measures

2.3.1. Demographics

Age, sex and parental education were assessed.

Table 1
Percentage of participants in each group who endorsed behaviors for each function.

	Non-NSSI		NSSI		<i>p</i>
Affect regulation	Alcohol	36.2 _a	Alcohol	47.8 _b	***
	Smoke	11.6 _a	Smoke	19.7 _b	***
	Bite nails	22.9 _a	Bite nails	30.7 _a	0.004
	Punch someone	02.7 _a	Punch someone	11.4 _b	***
	Marijuana	19.8 _a	Marijuana	33.0 _b	***
	Binge/under eat	13.1 _a	Binge/under eat	24.0 _b	***
	Exercise	37.8 _a	Exercise	41.2 _a	0.266
	Self-injure	00.0 _a	Self-injure	06.6 _b	***
	Shop	32.5 _a	Shop	27.7 _a	0.089
	None	17.5 _a	None	10.1 _a	0.001
Anti-dissociation	Alcohol	10.5 _a	Alcohol	27.9 _b	***
	Smoke	03.3 _a	Smoke	07.6 _a	0.002
	Bite nails	03.0 _a	Bite nails	09.4 _b	***
	Punch someone	01.0 _a	Punch someone	03.2 _a	0.006
	Marijuana	05.3 _a	Marijuana	17.2 _b	***
	Binge/under eat	04.9 _a	Binge/under eat	13.7 _b	***
	Exercise	12.5 _a	Exercise	22.2 _b	***
	Self-injure	00.0 _a	Self-injure	08.2 _b	***
	Shop	10.7 _a	Shop	11.0 _a	0.406
	None	73.9 _a	None	51.5 _b	***
Interpersonal boundaries	Alcohol	07.3 _a	Alcohol	12.0 _a	0.007
	Smoke	03.2 _a	Smoke	06.9 _a	0.004
	Bite nails	03.0 _a	Bite nails	05.3 _a	0.045
	Punch someone	01.5 _a	Punch someone	05.7 _b	***
	Marijuana	04.3 _a	Marijuana	10.3 _b	***
	Binge/under eat	03.2 _a	Binge/under eat	06.4 _a	0.011
	Exercise	24.5 _a	Exercise	20.7 _a	0.142
	Self-injure	00.0 _a	Self-injure	01.0 _a	0.178
	Shop	16.0 _a	Shop	12.6 _a	0.127
	None	56.4 _a	None	49.4 _a	0.027
Interpersonal influence	Alcohol	11.9 _a	Alcohol	18.9 _a	0.001
	Smoke	02.9 _a	Smoke	07.1 _a	0.001
	Bite nails	03.0 _a	Bite nails	04.4 _a	0.249
	Punch someone	01.1 _a	Punch someone	03.2 _a	0.011
	Marijuana	04.7 _a	Marijuana	10.3 _a	0.001
	Binge/under eat	03.2 _a	Binge/under eat	09.4 _b	***
	Exercise	11.4 _a	Exercise	14.5 _a	0.135
	Self-injure	00.0 _a	Self-injure	03.2 _b	***
	Shop	10.4 _a	Shop	08.7 _a	0.378
	None	65.3 _a	None	54.5 _b	***
Peer bonding	Alcohol	62.5 _a	Alcohol	68.6 _a	0.038
	Smoke	16.9 _a	Smoke	29.8 _b	***
	Bite nails	01.4 _a	Bite nails	05.5 _b	***
	Punch someone	02.0 _a	Punch someone	05.7 _a	0.001
	Marijuana	37.2 _a	Marijuana	53.0 _b	***
	Binge/under eat	06.4 _a	Binge/under eat	10.1 _a	0.026
	Exercise	32.5 _a	Exercise	35.8 _a	0.265
	Self-injure	00.0 _a	Self-injure	02.1 _a	0.004
	Shop	56.1 _a	Shop	56.0 _a	0.911
	None	10.6 _a	None	06.2 _a	0.011
Self-punishment	Alcohol	01.5 _a	Alcohol	06.0 _b	***
	Smoke	01.0 _a	Smoke	03.4 _a	0.001
	Bite nails	01.4 _a	Bite nails	04.6 _a	0.001
	Punch someone	00.2 _a	Punch someone	02.5 _b	***
	Marijuana	01.0 _a	Marijuana	03.4 _a	0.001
	Binge/under eat	07.0 _a	Binge/under eat	14.0 _b	***
	Exercise	12.8 _a	Exercise	14.9 _a	0.178
	Self-injure	00.0 _a	Self-injure	13.5 _b	***
	Shop	02.3 _a	Shop	01.4 _a	0.202
	None	79.3 _a	None	60.2 _b	***

Note: Different subscripts within a row denote significant group differences at $p < 0.001$.

*** Significant differences at $p < 0.001$.

2.3.2. Nonsuicidal self-injury (NSSI)

To assess NSSI involvement, participants completed the Inventory of Statements about Self-Injury (ISAS, Klonsky and Glenn, 2009). A list of self-injurious behaviors was provided (e.g., cutting, burning) and participants were asked to indicate how many times in their life they had intentionally engaged in each of the behaviors listed, without lethal intent.

2.3.3. Functions index

Using six commonly endorsed NSSI functions from the ISAS, including three intrapersonal functions (i.e., affect regulation, anti-dissociation, self-punishment) and three interpersonal functions (i.e., interpersonal boundaries, interpersonal influence, peer bonding), we created an index designed to assess the various types of behaviors participants engaged in when they wanted to address a particular function. In six separate questions, participants checked off the behaviors [from a list of 10, including drink alcohol, smoke cigarettes, bite nails, punch someone, smoke marijuana, binge/under eat, exercise, self-injury (e.g., cutting), shop or none of the above] in which they engaged when they: (1) “want to reduce stress,” “want to reduce anxiety,” as well as “feel good” (all affect regulation functions), (2) “feel numb and want to feel something” (anti-dissociation), (3) “get others to leave you alone” (interpersonal boundaries), (4) “get attention from others” (interpersonal influence), (5) “punish yourself” (self-punishment), or (6) “because your friends are doing it” (peer bonding).

3. Results

Of the total sample, 39.5% indicated having engaged in NSSI at least once. Of those individuals who engaged in NSSI, 5.9% engaged in the behavior once, 15.8% engaged in the behavior 2–4 times, 24% engaged in the behavior 5–10 times, 33.0% engaged in the behavior 11–50 times, 7.1% engaged in the behavior 51–100 times and 14.2% engaged in the behavior more than 100 times. The most commonly endorsed types of self-injury were self-hitting and head banging (21.9%), hair pulling and pinching (24%), and cutting (12.1%). Among those participants who engaged in NSSI, 30.7% reported using only one method of NSSI, 28.8% reported two methods, 17.4% reported three methods, 10% reported four methods, and 13.1% reported five or more methods of NSSI. Respondents were divided into two groups: (1) participants with no history of NSSI (labeled the “non-NSSI” group, $N=658$, 59.4%) and (2) participants who had engaged in NSSI at least once (labeled the “NSSI” group, $N=437$, 39.5%). Groups did not differ in age, sex or parental education, $ps > 0.05$.

As outlined in Table 1, we calculated the percentage of participants in each group who reported engaging in each coping behavior (e.g., drinking alcohol, smoking) to serve each of the six functions (e.g., affect regulation, peer bonding). To assess whether groups significantly differed in their frequency of coping behaviors for each regulatory function, we conducted several chi-square analyses. Given the use of multiple analyses, a Bonferroni adjustment was applied ($p < 0.001$). Although participants in both groups reported engaging in a variety of behaviors to regulate their affective and social experiences, chi-square analyses indicated that a significantly higher percentage of individuals in the non-NSSI group endorsed using *none* of the coping behaviors listed (as indicated by the “None” category) for anti-dissociation, interpersonal influence and self-punishment than in the NSSI ($p < 0.001$). In addition, several significant group differences in the frequency of participants reporting maladaptive coping behaviors were identified, whereby more participants in the NSSI group endorsed maladaptive coping behaviors in order to serve the functions as compared to the non-NSSI group (see Table 1 for significant differences for each function). Finally, given that individuals were included in the NSSI group if they reported having *ever* engaged in NSSI, we repeated the analyses including only participants who indicated recent NSSI use (i.e., NSSI within the past year). Importantly, the pattern of results did not differ.

4. Discussion

In total, 39.5% of the sample reported having engaged in NSSI at least once and many individuals reported multiple incidents. Although our prevalence of NSSI may seem high, our estimate is comparable to other studies with community samples that have employed checklist measures of NSSI behaviors, as well as studies involving first-year undergraduate students (Gratz et al., 2002; Klonsky and Glenn, 2009; Klonsky and Olino, 2008).

Consistent with Nock’s (2009) prediction, both groups endorsed a variety of behaviors to regulate their affective and social experiences, suggesting NSSI may be associated with other health-risk behaviors because these behaviors serve similar functions. Compared to the group of non-injurers, however, a higher percentage of individuals with a history of NSSI engaged in maladaptive coping behaviors (i.e., marijuana, binge/under eating) to regulate the six functions of affect regulation, anti-dissociation, interpersonal boundaries, interpersonal influence, peer bonding and self-punishment. Several studies have shown that individuals who engage in NSSI report higher levels of psychopathology (e.g., depression, anxiety) as compared to non-injurers (Ross and Heath, 2002; Klonsky and Glenn, 2009). Individuals who engage in NSSI, therefore, may have greater difficulty regulating their affective and social experiences than individuals who do not engage in NSSI, and as a result, are at increased risk for a variety of maladaptive coping behaviors, in addition to NSSI.

Interestingly, individuals who engaged in NSSI were significantly more likely to endorse at least one of the coping behaviors for anti-dissociation, interpersonal influence and self-punishment, suggesting that individuals who engage in NSSI may experience these needs more often than individuals who do not engage in NSSI. Moreover, the highest percentage of individuals who endorsed self-injury did so specifically to regulate the need to self-punish, suggesting NSSI may serve the function of self-punishment better than some of the other coping behaviors.

Strengths of the present study include the use of a large sample of self-injurers, a comparison non-NSSI group, and the examination of several coping behaviors. Further, while the results may not be generalizable to other age groups or individuals from different geographic regions, the present study provides the first exploratory report of the specificity of six of the most commonly endorsed motivations for engaging in NSSI. Although more research on this topic is needed, including the addition of clinically based samples, our findings offer preliminary evidence that individuals who engage in NSSI may experience greater need for anti-dissociation, interpersonal influence and self-punishment than individuals who do not engage in NSSI, and indicate that NSSI may be a coping behavior selected specifically to regulate the need to self-punish.

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