

Research Article

An Exploratory Study of the Nature and Extent of Nonsuicidal Self-Injury among College Women

Efrosini D. Kokaliari

Springfield College School of Social Work, 263 Alden Street, Springfield, MA 01109, USA

Correspondence should be addressed to Efrosini D. Kokaliari; ekokaliari@springfieldcollege.edu

Received 4 April 2014; Accepted 19 May 2014; Published 5 June 2014

Academic Editor: Mzikazi Nduna

Copyright © 2014 Efrosini D. Kokaliari. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

This study assessed the extent and nature of nonsuicidal self-injury (NSSI) among 165 students attending an all-women's college. Associations between NSSI behaviors and demographics, borderline personality disorder (BPD), posttraumatic stress disorder (PTSD), and attachment styles were investigated. Statistically significant relationships between the severity of NSSI and demographic characteristics and BPD and PTSD were explored using bivariate analysis. Within this population, presence of NSSI behavior was significantly associated with age, years in college, nonheterosexual orientation, BPD, PTSD, and preoccupied attachment styles. There were also marginally significant associations with race and financial status. Severity of NSSI behaviors was significantly associated with age, years in college, BPD pathology, and primary parent's level of education. A logistic regression analysis was developed that predicted NSSI behavior with 67% accuracy based on these findings. This study has implications for clinical practice.

1. Introduction

Nonsuicidal self-injury (NSSI) has become an increasingly common issue faced by college mental health professionals [1, 2]. NSSI refers to intentional self-inflicted injuries that involve tissue alteration. NSSI acts are usually performed in isolation, are not of socially sanctioned nature, and, by definition, do not include suicidal intent [3, 4]. The most common manifestations of NSSI are, in order of severity: scratching, bruising, hitting, biting, cutting, and burning. These injuries are usually inflicted on the arms and legs and, more rarely, on thighs, breasts, and genitals [5]. The behaviors are often performed in an attempt to regulate affect [6].

NSSI tends to begin in early adolescence and is thought to peak within ten years, which often coincides with college [7]. NSSI has been reported as a phenomenon predominantly observed in white females [4, 8].

NSSI shares several correlates with suicidal ideation including poor affect regulation, distress tolerance, and anxiety [9]. Although NSSI has been identified as a strong risk factor for suicide and suicidal ideation [9–12], however, most who engage in NSSI behaviors report absence of suicidal ideation [12, 13].

NSSI has been associated with several diagnoses such as depression, anxiety, dissociation, and BPD (Klonsky, 2007) [14]. However, until recently, it has been predominantly viewed as a symptom of BPD [15]. Research has extensively linked NSSI to childhood trauma [16–19]. Not surprisingly, insecure attachment styles have been associated with the presence of NSSI behaviors, as fragile coping mechanisms, anxiety, and poor affect regulation can lead the person to engage in NSSI [20–22].

Recently, other factors have emerged in the literature that demonstrate the complexity of the nature of NSSI. It has been associated not only with higher socioeconomic status and years of parental education but also with parental criticism and parental alienation in the form of higher expectations [23]. Furthermore, emerging evidence also suggests that NSSI may also be more prevalent among nonheterosexual individuals [4, 13, 24, 25].

1.1. Nonsuicidal Self-Injury within Nonclinical Populations. Over the last decade, NSSI has attracted a lot of attention in Western countries due to its increasing rates among non-clinical populations such as high school and college students (13–48%) [2, 17, 26–28] compared to the general population

(6%) [29]. While data are limited, the few studies that have emerged from non-Western countries also report high prevalence of NSSI among high school and college students [30, 31] with reported rates from 11 to 46% [10, 32–36].

In the DSM-IV, NSSI was solely recognized as a diagnostic criterion of BPD. However, in response to the escalating rates among nonclinical populations and, in particular, its presence among individuals without BPD, it was proposed as a stand-alone diagnosis [14, 31]. That effort led to the DSM-5 classifying NSSI as a separate diagnosis under the section Conditions under Further Study [37]. There has been a call for further research to differentiate NSSI from BPD to establish better diagnostic criteria and treatment [38], as well as to gain a more comprehensive understanding of the reasons people self-injure.

Given the prevalence of NSSI among nonclinical populations in middle schools, high schools, and colleges, one wonders if traditional etiological models, such as BPD, indeed adequately address why so many young people are now injuring their bodies [16, 39].

Thus, this study investigated the extent and nature of NSSI among a convenience sample of women who attended a small liberal arts college in the Northeastern United States aiming to contribute to a more nuanced and comprehensive understanding of NSSI.

2. Methodology

After Human Subject Review approval, a convenience sample of 100 students was identified from each of four classes at a competitive all-women's college in New England ($n = 400$). This college is attended predominantly by white students (52%), Asian (13%), and Hispanic (10%), and is known for academic excellence and the promotion of research. To enhance consistency across the samples, first semester students were excluded because they were in transition and have not had enough experience of communal living. This was important: the spread of self-injurious behaviors has at times been associated with communal living [40, 41]. Participants received a mailing that included a cover letter, an informed consent document, a demographic questionnaire, and measures pertaining to NSSI, PTSD, BPD, and attachment styles. Mailing was repeated twice to increase response rate and as a result 44.7% of the sample responded, which is congruent with the average response rates obtained from college students (43%) [42].

2.1. Instruments. The survey consisted of the following five instruments.

The demographic questionnaire assessed students' academic performance and their family composition, as well as their family educational and financial status.

The Self-injury Behavior Questionnaire (SIB-Q) was used to assess prevalence, frequency, and severity of NSSI behaviors, including self-bruising, self-hitting, hair-pulling, self-scratching, self-biting, self-burning, and self-cutting [43]. The SIB-Q has been used validated for use in college populations [43–45]. Earlier versions of the SIB-Q have been found reliable over time (correlation coefficient = 0.76–0.96 [44]).

The Personality Disorders Questionnaire (PDQIV-BPD scale) was used to assess borderline pathology. The PDQ-IV assesses all personality disorders based on self-reported answers to 100 questions corresponding with diagnostic criteria in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR2000) [46]. For the purpose of this study, only the nine items corresponding to BPD were used along with five questions inquiring about the clinical significance of the symptoms. BPD was also scored for severity. Earlier versions of the instrument have demonstrated high sensitivity (Cronbach's $\alpha > 0.80$ [47, 48]). The PDQ-R has been validated in nonclinical populations such as college students [49].

The Purdue Posttraumatic Stress Disorder Questionnaire-Revised (P-PTSD-Revised) was used to assess presence and severity of PTSD. The diagnosis of PTSD requires evidence of at least one reexperiencing symptom, three avoidance symptoms, and two arousal symptoms [50]. It has been validated for college student populations with appropriate internal consistency (Cronbach's $\alpha = 0.91$) and stability over time. It has demonstrated high internal consistency for the symptom subscales (0.79–0.84 [51]). The instrument was coded for the presence or absence of PTSD and for severity.

Bartholomew and Horowitz's Self-Report Attachment Style Prototypes questionnaire was used to assess students' attachment styles (secure, preoccupied, fearful-avoidant, and dismissive) [52]. The instrument includes a prototype paragraph for each of the four attachment styles that describe the characteristics of that style. The psychometric properties of the instrument have proven to be high (Cronbach's 0.87–0.95 [52]). This measurement tool has been validated for use in college populations [53].

2.2. Data Analysis. Data was entered and analyzed with SPSS version 19.

First NSSI was scored categorically for its presence or absence, and associations between NSSI and variables measured at the nominal level including demographics, borderline, PTSD diagnosis, and attachment styles were evaluated with chi-squared tests. Next, NSSI behaviors were scored for the severity. Bivariate analyses were used to explore statistically significant relationships between the severity of NSSI and demographic characteristics, BPD, and PTSD. Finally, a logistic regression analysis was computed for the dichotomous outcome of NSSI versus no NSSI.

3. Results

3.1. NSSI Significant Associations with Demographic and Psychological Variables. Of 400 surveys mailed out, 179 were returned, representing 44.7% of the sample. The majority of the respondents, 54.8% ($n = 90$), reported engaging in NSSI behaviors. The demographics of the sample are shown in Table 1. The sample was predominantly white (71%) but quite diverse in terms of sexual orientation as about 30% were identified as nonheterosexual.

The most common NSSI behaviors reported were scratching to the point of bleeding (71.4%), self-biting (50.5%), cutting (49.5%), self-hitting (47.3%) self-bruising, (39.6%),

TABLE 1: Demographic and psychological variables.

Characteristics of the sample	Overall <i>n</i> = 165 (%)	Non-NSSI sample <i>n</i> = 75 (%)	NSSI <i>n</i> = 90 (%)	<i>P</i>
Demographic variables				
Years in college (1–4) means	2.5	2.5	2.4	<0.05
Age 18–24 mean	20.7	20.6	20.8	0.25
Race (white)	119 (72.1)	49 (65.3)	70 (77.8)	<0.07
Sexual orientation (heterosexual)	114 (69.1)	60 (80)	54 (60)	<0.001
Relationship status (single)	133 (80.6)	61 (81.3)	72 (80)	0.65
GPA				0.85
<2	2 (1.2)	1 (1.3)	1 (1.1)	
2.1–3.0	28 (17)	14 (18.7)	14 (15.6)	
3.1–4.0	135 (81.8)	60 (80)	75 (83.3)	
Parents' relationship status (married)	104 (63)	47 (62.7)	57 (63)	0.93
Primary parent's education level				0.08
High school	15 (9.1)	7 (9.3)	8 (8.9)	
College	67 (40.6)	38 (50.7)	29 (32.2)	
Graduate or PhD	79 (47.9)	28 (37.3)	51 (56.7)	
Secondary parent's education level				0.42
High school	23 (13.9)	11 (14.7)	12 (13.3)	
College	60 (36.4)	22 (29.3)	38 (42.2)	
Graduate or PhD	53 (32.1)	26 (34.7)	27 (30)	
Financial status				0.07
<60	60 (39.2)	33 (47.8)	27 (32.1)	
60–119	50 (32.7)	18 (26.1)	32 (38.1)	
120–179	17 (11.1)	5 (7.2)	12 (14.3)	
180–239	14 (9.2)	5 (7.2)	9 (10.7)	
240<	12 (7.8)	8 (11.6)	4 (4.8)	
Psychological variables				
BPD	16 (9.8)	2 (2.7)	14 (15.7)	<0.001
PTSD	27 (16.8)	5 (6.8)	22 (25)	<0.001
Attachment styles				<0.05
Secure	54 (32.9)	31 (41.3)	23 (25.8)	
Dismissive	22 (13.4)	13 (17.3)	9 (10.1)	
Preoccupied	29 (17.7)	7 (9.3)	22 (24.7)	<0.01*
Fearful	59 (36)	24 (32)	35 (39.3)	

*Cross-tabulation results indicated that there were fewer NSSI students who reported secure attachment styles than expected by chance. Likewise, there were greater numbers of self-injuring students with preoccupied attachment styles than expected by chance. Dismissive and fearful attachment styles had similar number in both groups in both the expected by chance and counted scores. Thus, a chi-squared test with secure and preoccupied attachment styles was run and indicated significance; $\chi^2(1) = 8.41, P < 0.01$.

and burning, (29.7%). When NSSI behaviors were coded for severity [43], students reported engaging more severely in cutting (34.7%), burning (20.9%), scratching (20.3%), biting (10.5%), hitting (8.3%), and bruising (.5%).

The presence of NSSI behaviors was significantly and positively associated with years in college, self-identification as nonheterosexual, BPD, PTSD, and insecure-preoccupied attachment style. It was marginally associated with race and financial status, but it was not associated with academic achievement (GPA: grade point average), relationship status, parental relationship status, or parental education (see Table 1).

Interestingly, 20 of the 90 participants who reported engaging in NSSI (22.2%) did not qualify for PTSD or BPD and self-reported having secure attachment styles.

3.2. Severity of Self-Injurious Behaviors and Significant Correlations. Students' NSSI behaviors were scored for severity. Severity varied widely (range = 5–165; mean = 43.8 ± 37.5). Pearson's correlation tests were run for the NSSI group (*n* = 90) and revealed further significant two-tailed associations.

Significant relationships emerged between age ($r = .331, P < 0.01$), years at college ($r = .260, P < 0.05$), and risk

TABLE 2: Logistical regression.

	Variables	Variables in the equation					Exp(B)
		B	S.E.	Wald	Df	Sig.	
Step 1 ^a	Borderline	1.518	.820	3.429	1	.064	4.562
	PTSD	1.331	.565	5.549	1	.018	3.786
	Sex. orient.	-1.001	.387	6.693	1	.010	.367
	Nonwhite	.776	.394	3.876	1	.049	2.174
	Constant	-5.289	1.943	7.407	1	.006	.005

^aVariable(s) entered in step 1 are borderline, PTSD sexual orientation, and nonwhite.

for NSSI behaviors. Participants who were older or had been longer in college were more likely to engage in NSSI behaviors and to have higher NSSI severity scores than the younger participants.

Although the presence of NSSI was not associated with education of primary caregiver, NSSI severity was significantly and positively associated with the level of education of the primary caregiver, ($r = .26$, $P < 0.05$).

BPD was scored on a continuous scale. NSSI severity was significantly associated with severity of BPD ($r = .342$, $P < 0.01$) indicating that students with more BPD pathology tended to engage in more severe NSSI behaviors. PTSD was also scored on a continuous scale, but NSSI severity was not associated with PTSD severity.

3.3. Predicting NSSI Behaviors. Logistical regression analyses of risk factors of NSSI behaviors (i.e., years in college, race, sexual orientation, attachment styles, caregiver parental education, PTSD, and BPD) indicated that sexual orientation, PTSD, BPD, and race were the most robust predictors of the presence of NSSI behaviors (see Table 2).

Using the non-NSSI group as the reference, the ODDs ratio on borderline is 4.562, PTSD is 3.786, and race is 2.174, while sexual orientation was as less instrumental.

Using the non-NSSI group as the reference, the ODDs ratio on BPD (4.562) + PTSD (3.786) + being white (2.174) + sexual orientation (.367) was as less instrumental.

This logistical regression model suggests that a non-heterosexual white person with BPD and posttraumatic stress disorder had 67% likelihood to exhibit NSSI behaviors. While the strength of this model lies in its simplicity, its predictive value of 67% clearly indicates that additional factors must be considered to predict NSSI with more accuracy.

4. Discussion

The current study builds on previous research done in nonclinical student and college populations confirming that NSSI is a very prevalent and complex behavior.

In this sample, 90 (54.8%) of the respondents reported NSSI behaviors, indicating a probable self-selection bias. However, if this number is applied to the original sample size ($n = 400$), the rate of NSSI would be 22.7%, similar to other college populations. This adds to the growing body of evidence that NSSI behaviors have reached epidemic proportions [2, 4, 17, 28].

Among students who reported engaging in NSSI behaviors, scratching to the point of bleeding was the most common NSSI behavior, followed by self-biting and self-hitting. This finding is consistent with previous findings [2, 54, 55]. This finding also suggests that scratching may be a more common NSSI behavior than previously recognized but may often not be seen as such unless or until it escalates to cutting or burning. However, based on the severity of the behavior each student engaged in, cutting was found to be the most common behavior, followed by burning, which is consistent with past research [2].

The finding that NSSI behaviors were positively correlated to age and year in college is consistent with past research showing that NSSI behaviors peak between the ages of 16 and 25 [7, 39]. This may also be explained by the possibility that communal living may foster the spread of NSSI behaviors [40, 41].

Race was a marginally significant risk factor for NSSI behaviors in this study, but it is difficult to interpret this finding, as the sample was largely white. However, this result does corroborate previous research that found self-injury to be more prevalent in whites [11], (Muehlenkamp and Gutierrez, 2004). Other studies have found that race may not be a factor [56], indicating the need for further investigation into the role of race in NSSI behaviors [28].

Nonheterosexual orientation was strongly correlated with self-injurious behaviors. This may be related to earlier trauma or exposure to the consistent homophobia experienced and implied in a dominant heterosexist paradigm (Alexander and Clare, 2004) [2, 4, 17].

Strikingly, NSSI severity was also associated with a higher level of education in primary caregivers. While our study did not find an increase in incidence of NSSI associated with parental education, previous research investigating associations between NSSI and the education of the primary caregiver has found relationship significant to self-destructive behaviors [40]. Critical parenting and parental alienation have been associated with NSSI [23], as have students' perception of parental criticism [57]. An explanation for this finding might be that parents with higher education may have higher expectations of their daughters. Studies have argued that NSSI may be a quick fix for affect regulation, a symptom of Western societies that value high achievement, and productivity, at the expense of individual emotions [58]. This finding requires further investigation.

This study confirmed the well-documented comorbidity between NSSI, BPD [15], and PTSD [15, 59].

Attachment style was significantly associated with NSSI. Most participants who reported engaging in NSSI behaviors also reported insecure attachment styles. Insecure attachment styles are characterized by affect regulation struggles and anxiety related to abandonment and separation. NSSI may serve as a coping mechanism to manage overwhelming emotion [20], (Klonsky, 2007), [22].

Importantly, 22 percent of those who self-injured did not have BPD characteristics or PTSD and reported being securely attached. This finding suggests the need for further research into NSSI to improve understanding its risks factors, prevalence, and nature among nonclinical populations [28, 58]. One explanation for this group is that NSSI may help alleviate distress or pressure from the goal-oriented college environment, which may exert a stronger and more immediate effect than attachment styles. While this study did not use the DSM-5 criteria for NSSI, this finding provides further support for NSSI to be investigated as condition requiring further study as described by DSM-V [38, 60].

4.1. Limitations of the Study. This study was completed in a liberal art women's college with a small convenience sample and is not generalizable to other populations. Some of the behaviors may be unique to this group because of the narrow age range of the sample and the unique attributes of the student body. Finally, survey-based tools rely on accurate self-reporting and are prone to self-selection bias, both of which may limit the generalizability of our findings.

Other limitations pertain to the specific instruments used for the diagnoses of PTSD and attachment styles. The P-PTSD instrument is not sensitive to more complex PTSD, which may have affected the women of this sample. Similarly, self-reported attachment instrument may not capture some more subtle manifestations of internal working models. A comprehensive attachment interview may have produced different results.

An instrument on perfectionism may have given further insights, as this is a high-achieving population, and mental distress situational stressors have been found to be a motive for NSSI among college students [25] along with perfectionism [57]. Another limitation is that this study could have benefited if anxiety and depression had been assessed.

5. Conclusion

This study expands on previous research and supports the well-documented findings that NSSI is prevalent among college students. This study adds to a growing body of evidence that college students face complicated mental health problems and may be uniquely prone to engaging in self-destructive behaviors.

This study highlights the need for mental health professionals to be attentive not only to major psychological correlates of NSSI but also to associated characteristics such as sexual orientation and level of parental education. Furthermore, while NSSI is highly correlated to BPD, PTSD, and insecure attachments, the absence of these characteristics does not

exclude the possibility of NSSI. Nearly one in four individuals who engage in NSSI did not have these risk factors.

Those individuals may be engaging in NSSI for other reasons. Social workers and allied health professionals in college counseling centers should expect to see students who self-injure with no other major psychopathology. In this study, academic achievement was not associated with the presence of NSSI, and actually the majority of the students excelled academically. Colleges could benefit by implementing NSSI education, screening, and early counseling practices aimed at identification, prevention, and intervention.

These findings provide support that NSSI should be a stand-alone diagnosis rather than a symptom of BPD. This new classification will help identify those nonclinical individuals, gain insight into their unique challenges, and facilitate treatment.

Conflict of Interests

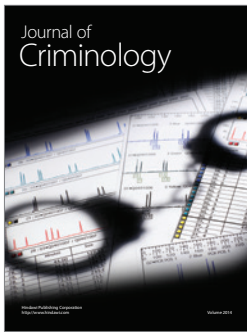
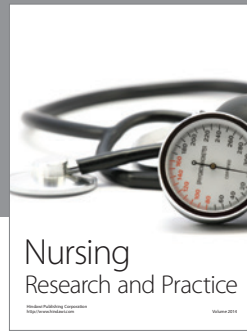
The author declares that there is no conflict of interests regarding the publication of this paper.

References

- [1] E. D. Kokaliari and K. Lanzano, "Deliberate self-injury. A consumer-therapist co-run group. A choice or a necessity?" *Epidemiologia e Psichiatria Sociale*, vol. 14, no. 1, pp. 32–38, 2005.
- [2] J. Whitlock, J. Eckenrode, and D. Silverman, "Self-injurious behaviors in a college population," *Pediatrics*, vol. 117, no. 6, pp. 1939–1948, 2006.
- [3] B. W. Walsh, *Treating Self-Injury: A Practical Guide*, Guilford Press, New York, NY, USA, 2nd edition, 2012.
- [4] J. Whitlock, J. Muehlenkamp, A. Purington et al., "Nonsuicidal self-injury in a college population: general trends and sex differences," *Journal of American College Health*, vol. 59, no. 8, pp. 691–698, 2011.
- [5] J. Whitlock, "Self-injurious behavior in adolescents," *PLoS Medicine*, vol. 7, no. 5, article e1000240, 2010.
- [6] E. Klonsky, "The functions of self-injury in young adults who cut themselves: clarifying the evidence for affect-regulation," *Psychiatry Research*, vol. 166, no. 2-3, pp. 260–268, 2009.
- [7] A. R. Favazza, "Self-mutilation," in *The Harvard Medical School Guide to Suicide Assessment and Intervention*, D. G. Jacobs, Ed., pp. 125–145, Jossey-Bass, San Francisco, Calif, USA, 1999.
- [8] N. W. Bakken and W. D. Gunter, "Self-cutting and suicidal ideation among adolescents: gender differences in the causes and correlates of self-injury," *Deviant Behavior*, vol. 33, no. 5, pp. 339–356, 2012.
- [9] D. Brent, "Nonsuicidal self-injury as a predictor of suicidal behavior in depressed adolescents," *The American Journal of Psychiatry*, vol. 168, no. 5, pp. 452–454, 2011.
- [10] P. Hasking, R. Momeni, S. Swannell, and S. Chia, "The nature and extent of non-suicidal self-injury in a non-clinical sample of young adults," *Archives of Suicide Research*, vol. 12, no. 3, pp. 208–218, 2008.
- [11] C. M. Jacobson and M. Gould, "The epidemiology and phenomenology of non-suicidal self-injurious behavior among adolescents: a critical review of the literature," *Archives of Suicide Research*, vol. 11, no. 2, pp. 129–147, 2007.

- [12] J. Whitlock, J. Muehlenkamp, J. Eckenrode et al., "Nonsuicidal self-injury as a gateway to suicide in young adults," *Journal of Adolescent Health*, vol. 52, no. 4, pp. 486–492, 2013.
- [13] L. Wichström, "Predictors of non-suicidal self-injury versus attempted suicide: similar or different?" *Archives of Suicide Research*, vol. 13, no. 2, pp. 105–122, 2009.
- [14] E. A. Selby, T. W. Bender, K. H. Gordon, M. K. Nock, and T. E. Joiner, "Non-suicidal self-injury (NSSI) disorder: a preliminary study," *Personality Disorders: Theory, Research, and Treatment*, vol. 3, no. 2, pp. 167–175, 2012.
- [15] M. K. Nock, T. E. Joiner Jr., K. H. Gordon, E. Lloyd-Richardson, and M. J. Prinstein, "Non-suicidal self-injury among adolescents: diagnostic correlates and relation to suicide attempts," *Psychiatry Research*, vol. 144, no. 1, pp. 65–72, 2006.
- [16] K. L. Gratz, "Risk factors for and functions of deliberate self-harm: an empirical and conceptual review," *Clinical Psychology: Science and Practice*, vol. 10, no. 2, pp. 192–205, 2003.
- [17] K. L. Gratz, "Risk factors for deliberate self-harm among female college students: the role and interaction of childhood maltreatment, emotional inexpressivity, and affect intensity/reactivity," *American Journal of Orthopsychiatry*, vol. 76, no. 2, pp. 238–250, 2006.
- [18] R. R. Maniglio, "The role of child sexual abuse in the etiology of suicide and non-suicidal self-injury," *Acta Psychiatrica Scandinavica*, vol. 124, no. 1, pp. 30–41, 2011.
- [19] T. M. Yates, "Developmental pathways from child maltreatment to non-suicidal self-injury," in *Understanding Non-Suicidal Self-Injury: Origins, Assessment, and Treatment*, M. K. Nock, Ed., pp. 117–137, American Psychological Association, Washington, DC, USA, 2009.
- [20] S. K. Farber, "Dissociation, traumatic attachments, and self-harm: eating disorders and self-mutilation," *Clinical Social Work Journal*, vol. 36, no. 1, pp. 63–72, 2008.
- [21] K. D. Harrison, "Self-injury among a college population: the role of attachment, self-esteem and emotional expression as risk factors," *Dissertation Abstracts International*, vol. 71, 2010.
- [22] C. Levesque, M. Lafontaine, J. Bureau, P. Cloutier, and C. Dandurand, "The influence of romantic attachment and intimate partner violence on non-suicidal self-injury in young adults," *Journal of Youth and Adolescence*, vol. 39, no. 5, pp. 474–483, 2010.
- [23] T. M. Yates, A. J. Tracy, and S. S. Luthar, "Non-suicidal self-injury among "privileged" youths: Longitudinal and cross-sectional approaches to developmental process," *Journal of Consulting and Clinical Psychology*, vol. 76, no. 1, pp. 52–62, 2008.
- [24] M. G. Lucassen, S. N. Merry, E. M. Robinson et al., "Sexual attraction, depression, self-harm, suicidality and help-seeking behaviour in New Zealand secondary school students," *Australian and New Zealand Journal of Psychiatry*, vol. 45, no. 5, pp. 376–383, 2011.
- [25] H. C. Wilcox, A. M. Arria, K. M. Caldeira, K. B. Vincent, G. M. Pinchevsky, and K. E. O'Grady, "Longitudinal predictors of past-year non-suicidal self-injury and motives among college students," *Psychological Medicine*, vol. 42, no. 4, pp. 717–726, 2012.
- [26] K. L. Gratz and A. L. Chapman, "The role of emotional responding and childhood maltreatment in the development and maintenance of deliberate self-harm among male undergraduates," *Psychology of Men & Masculinity*, vol. 8, no. 1, pp. 1–14, 2007.
- [27] C. Hamza, T. Willoughby, and M. Good, "A preliminary examination of the specificity of the functions of nonsuicidal self-injury among a sample of university students," *Psychiatry Research*, vol. 205, no. 1–2, pp. 172–175, 2013.
- [28] K. L. Gratz, R. D. Litzman, J. Young et al., "Deliberate self-harm among underserved adolescents: the moderating roles of gender, race, and school-level and association with borderline personality features," *Personality Disorders: Theory, Research, and Treatment*, vol. 3, no. 1, pp. 39–54, 2012.
- [29] E. D. Klonsky, "Non-suicidal self-injury in United States adults: prevalence, sociodemographics, topography and functions," *Psychological Medicine*, vol. 41, no. 9, pp. 1981–1986, 2011.
- [30] M. Giletta, R. Scholte, R. E. Engels, S. Ciairano, and M. J. Prinstein, "Adolescent non-suicidal self-injury: a cross-national study of community samples from Italy, the Netherlands and the United States," *Psychiatry Research*, vol. 197, no. 1–2, pp. 66–72, 2012.
- [31] J. J. Muehlenkamp, L. Claes, L. Havertape, and P. L. Plener, "International prevalence of adolescent non-suicidal self-injury and deliberate self-harm," *Child and Adolescent Psychiatry and Mental Health*, vol. 6, article 10, 2012.
- [32] Y. T. Cheung, P. Wong, A. M. Lee, T. H. Lam, Y. S. Fan, and P. S. Yip, "Non-suicidal self-injury and suicidal behavior: prevalence, co-occurrence, and correlates of suicide among adolescents in Hong Kong," *Social Psychiatry and Psychiatric Epidemiology*, vol. 48, no. 7, pp. 1133–1144, 2013.
- [33] A. Tan, "Non-suicidal self-injury in an adolescent population in Singapore," *Dissertation Abstracts International*, vol. 71, 2010.
- [34] S. S. Zoroglu, U. Tuzun, V. Sar et al., "Suicide attempt and self-mutilation among Turkish high school students in relation with abuse, neglect and dissociation," *Psychiatry and Clinical Neurosciences*, vol. 57, no. 1, pp. 119–126, 2003.
- [35] J. You, F. Leung, K. Fu, and C. Lai, "The prevalence of nonsuicidal self-injury and different subgroups of self-injurers in Chinese adolescents," *Archives of Suicide Research*, vol. 15, no. 1, pp. 75–86, 2011.
- [36] Y. Wan, C. Hu, J. Hao, Y. Sun, and F. Tao, "Deliberate self-harm behaviors in Chinese adolescents and young adults," *European Child & Adolescent Psychiatry*, vol. 20, no. 10, pp. 517–525, 2011.
- [37] DSM, *Desk Reference to the Diagnostic Criteria from DSM-5*, American Psychiatric Publishing, Arlington, Va, USA, 5th edition, 2013.
- [38] T. Albon, C. Ruf, and M. Schmid, "Proposed diagnostic criteria for the DSM-5 of nonsuicidal self-injury in female adolescents: diagnostic and clinical correlates," *Psychiatry Journal*, vol. 2013, Article ID 159208, 12 pages, 2013.
- [39] S. Shaw, "Shifting conversations on girls' and women's self-injury: an analysis of the clinical literature in historical context," *Feminism & Psychology*, vol. 12, no. 2, pp. 191–219, 2002.
- [40] S. Farber, "When the body is the target: self-harm, pain, and traumatic attachments," *Psychoanalysis & Psychotherapy*, vol. 19, no. 1, pp. 111–115, 2002.
- [41] P. Hasking, T. Andrews, and G. Martin, "The role of exposure to self-injury among peers in predicting later self-injury," *Journal of Youth and Adolescence*, vol. 42, no. 10, pp. 1543–1556, 2013.
- [42] S. R. Porter and P. D. Umbach, "Student survey response rates across institutions: why do they vary?" *Research in Higher Education*, vol. 47, no. 2, pp. 229–247, 2006.
- [43] E. McArdle, *HPA-AXIS reactivity to interpersonal stress in young adults who self-injure [Ph.D. dissertation]*, University of Massachusetts, Amherst, Mass, USA, 2003.

- [44] L. A. Alexander, "The functions of self-injury and its link to traumatic events in college students (Doctoral dissertation, University of Massachusetts, Amherst, 1999)," *Dissertation Abstracts International B*, vol. 60, no. 5, p. 2328, 1999.
- [45] A. R. Rulf-Fountain, "Self-injurious behavior in university undergraduate students. (Doctoral dissertation, University of Massachusetts, Amherst, 2001)," *Dissertation Abstracts International B*, vol. 62, no. 1, p. 596, 2001.
- [46] American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders*, American Psychiatric Association, 4th edition, 2000.
- [47] S. E. Hyler, R. O. Rieder, J. B. W. Williams, R. L. Spitzer, J. Hendler, and M. Lyons, "The personality diagnostic questionnaire: development and preliminary results," *Journal of Personality Disorders*, vol. 2, no. 3, pp. 229–237, 1988.
- [48] S. E. Hyler, A. E. Skodol, H. D. Kellman, J. M. Oldham, and L. Rosnick, "Validity of the personality diagnostic questionnaire-revised: comparison with two structured interviews," *The American Journal of Psychiatry*, vol. 147, no. 8, pp. 1043–1048, 1990.
- [49] A. Fossati, C. Maffei, M. Bagnato et al., "Brief communication: criterion validity of the Personality Diagnostic Questionnaire-4+ (PDQ-4+) in a mixed psychiatric sample," *Journal of Personality Disorders*, vol. 12, no. 2, pp. 172–178, 1998.
- [50] M. M. Antony, S. M. Orsillo, and L. Roemer, Eds., *Practitioner's Guide to Empirically-Based Measures of Anxiety*, Kluwer Academic/Plenum Press, New York, NY, USA, 2001.
- [51] D. Lauterbach and S. Vrana, "Three studies on the reliability and validity of a self-report measure of posttraumatic stress disorder," *Assessment*, vol. 3, no. 1, pp. 17–25, 1996.
- [52] K. Bartholomew and L. M. Horowitz, "Attachment styles among young adults: a test of a four-category model," *Journal of Personality and Social Psychology*, vol. 61, no. 2, pp. 226–244, 1991.
- [53] S. Treger and S. Sprecher, "The influences of sociosexuality and attachment style on reactions to emotional versus sexual infidelity," *The Journal of Sex Research*, vol. 48, no. 5, pp. 413–422, 2011.
- [54] S. Gollust, D. Eisenberg, and E. Golberstein, "Prevalence and correlates of self-injury among university students," *Journal of American College Health*, vol. 56, no. 5, pp. 491–498, 2008.
- [55] E. E. Lloyd-Richardson, N. Perrine, L. Dierker, and M. L. Kelley, "Characteristics and functions of non-suicidal self-injury in a community sample of adolescents," *Psychological Medicine*, vol. 37, no. 8, pp. 1183–1192, 2007.
- [56] L. M. Hilt, M. K. Nock, E. E. Lloyd-Richardson, and M. J. Prinstein, "Longitudinal study of nonsuicidal self-injury among young adolescents: rates, correlates, and preliminary test of an interpersonal model," *The Journal of Early Adolescence*, vol. 28, no. 3, pp. 455–469, 2008.
- [57] E. R. Hoff and J. J. Muehlenkamp, "Nonsuicidal self-injury in college students: the role of perfectionism and rumination," *Suicide and Life-Threatening Behavior*, vol. 39, no. 6, pp. 576–587, 2009.
- [58] E. Kokaliari and J. Berzoff, "Nonsuicidal self-injury among nonclinical college women: lessons from foucault," *Affilia*, vol. 23, no. 3, pp. 259–269, 2008.
- [59] M. R. Weierich and M. K. Nock, "Posttraumatic stress symptoms mediate the relation between childhood sexual abuse and non-suicidal self-injury," *Journal of Consulting and Clinical Psychology*, vol. 76, no. 1, pp. 39–44, 2008.
- [60] C. Glenn and E. Klonsky, "Nonsuicidal self-injury disorder: an empirical investigation in adolescent psychiatric patients," *Journal of Clinical Child & Adolescent Psychology*, vol. 42, no. 4, pp. 496–507, 2013.



Hindawi

Submit your manuscripts at
<http://www.hindawi.com>

