Archives of Suicide Research, 14:79–88, 2010

ISSN: 1381-1118 print/1543-6136 online
DOI: 10.1080/13811110903479086

Routledge
Taylor & Francis Group

An Examination of Non-Suicidal Self-Injury in Men: Do Men Differ From Women in Basic NSSI Characteristics?

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Researchers have reported similar prevalence rates for non-suicidal self-injury (NSSI) among men and women, yet few studies have investigated gender differences in NSSI. This study describes and compares basic NSSI characteristics among a nonclinical sample by gender. Forty-eight individuals reporting a history of NSSI were interviewed (M = 18.52 years old, SD = 1.18 years). NSSI characteristics, including frequency, age of onset, method of NSSI, pain and control during NSSI, and degree of medical injury were compared between men (n = 19) and women (n = 29). Men and women differed significantly on age of onset, degree of medical injury, and NSSI methods. This study supports previous findings of gender differences in NSSI and suggests that further investigation of gender differences in NSSI is warranted.

Keywords gender differences, men, non-suicidal self-injury, self-harm

Non-suicidal self-injury (NSSI) is defined as deliberate harm to the body without suicidal intent and can incorporate behaviors such as cutting, burning, carving, scratching, or skin picking (Favazza, 1998; Prinstein, 2008). Although the behavior is prevalent in clinical samples (Briere & Gil, 1998; Nijman, Dautzenberg, Merckelbach et al., 1999; Zlotnick, Mattia, & Zimmerman, 1999), NSSI also occurs frequently in nonclinical samples (Briere & Gil, 1998; Klonsky, Oltmanns, & Turkheimer, 2003; Nijman, Dautzenberg, Merckelbach et al., 1999) and is especially prevalent among young adults. Indeed, recent studies have shown that up to 38% of young adults engage in NSSI (Gratz, Conrad, & Roemer, 2002; Klonsky, Oltmanns & Turkheimer, 2003), with 10% of surveyed students at a large urban university reporting over 100 episodes each in their lifetimes (Gratz, Conrad, & Roemer, 2002). Negative consequences of NSSI include physical injury varying in severity and disfigurement, shame, and guilt (i.e., Briere & Gil, 1998; Gratz, 2003; Wilhelm, Keuthen, Deckersbach et al., 1999).

Although NSSI differs from attempted suicide in suicidal intent, function of the behavior, and other characteristics (Muehlenkamp, 2005; Suyemoto, 1998), the behaviors often co-occur. A significant

number of individuals who engage in NSSI also report a suicide attempt history, with studies reporting a history of suicide attempts in over 70% of psychiatric inpatients with an NSSI history (Langbehn & Pfohl, 1993; Nock, Joiner, Gordon et al., 2006). Research suggests that individuals with histories of both types of self-injury may experience more psychopathology than those with a history of attempted suicide alone (Guertin, Lloyd-Richardson, Spirito et al., 2001; Muehlenkamp & Gutierrez, 2007; Stanley, Gameroff, Michalsen et al., 2001). Those with a history of NSSI also may be more likely to die from a suicide attempt than those without an NSSI history because they underestimate the lethality of their attempts (Stanley, Gameroff, Michalsen et al., 2001) or because the act of NSSI may habituate them to self-injury, thereby increasing the risk for death by suicide (Van Orden, Merrill, & Joiner, 2005). The high prevalence of NSSI, coupled with its detrimental effects and link to attempted suicide, makes NSSI an important focus of research.

Until recently, the majority of NSSI research was conducted with exclusively or predominantly female samples (i.e., Favazza & Conterio, 1989; Favazza, DeRosear, & Conterio, 1989; Herpertz, 1995), as the behavior was thought to occur predominantly in women (Favazza & Conterio, 1989; Suyemoto, 1998). However, recent studies have demonstrated comparable rates of NSSI among men and women in nonclinical samples (Andover, Pepper, & Gibb, 2007; Gratz, Conrad, & Roemer, 2002; Heath, Toste, Nedecheva et al., 2008; Hilt, Nock, Lloyd-Richardson et al., 2008; Klonsky, Oltmanns, & Turkheimer, 2003). For example, one study of adolescents found that over half of those reporting a history of NSSI (54.8%) were male (Muehlenkamp & Gutierrez, 2004). The discrepancy between the actual prevalence of NSSI in males and females and the use of predominantly female samples in NSSI research calls into question the generalizability of these findings to men with NSSI (Gratz, 2003). Furthermore, NSSI encompasses a wide range of behaviors, and while recent prevalence studies have indicated similar rates of overall NSSI between men and women, there may be important differences between men and women in method, function, and severity of NSSI behaviors.

Few studies have examined NSSI in men or gender differences in the basic parameters of NSSI, although findings from suicide research and the limited existing NSSI research suggest that important gender differences may exist. For example, Andover, Pepper & Gibb (2007) found that women with a history of NSSI reported using general problem-solving and social support seeking coping strategies less often than women without an NSSI history, a difference that was not found among men. However, those with an NSSI history, regardless of gender, engaged in avoidance-based coping strategies more frequently than those without an NSSI history. While this study provides support for gender differences in coping styles among those with NSSI, an investigation of gender differences in the basic parameters of NSSI is necessary to fully understand the behavior. To the best of our knowledge, only one study has systematically investigated gender differences in NSSI. Claes, Vandereycken, and Vertommen (2007) reported gender differences in number and frequency of episodes, pain intensity, wound care, function, and preceding and resulting emotion. In their study of psychiatric inpatients, men reported more episodes of NSSI per day, more pain during injury, and less care of wounds than women. Men were also less likely than women to report self-punishment and avoiding negative feelings as a preceding emotion for NSSI. The gender differences found by Claes Vandereycken, and Vertommen (2007) and Andover, Pepper, and Gibb (2007)

suggest that the field would benefit from continued investigation of gender differences in the basic parameters of NSSI, such as age of onset, frequency of behavior, and level of injury in nonclinical and clinical samples, as these differences will impact our understanding of the behavior, as well as its assessment and treatment.

Another important area for investigation of gender differences is method of NSSI. The consistent findings of gender differences in suicidal behaviors in terms of methods used (i.e., increased use of violent methods among men; Beautrais, 2003; Bradvik, 2007) support the likelihood of gender differences in NSSI method. While limited, the existing research specifically on NSSI method also supports the possibility of gender differences in NSSI method. Studies have reported predominantly female samples of self-cutters (Andover, Pepper, Ryabchenko et al., 2005; Brown, Houck, Hadley et al., 2005), while comparable prevalence rates have been found among men and women who engaged in methods of NSSI other than cutting (Andover, Pepper, Ryabchenko et al., 2005). Importantly, Claes, Vandereycken, and Vertommen (2007) found gender differences in NSSI method among psychiatric inpatients. Specifically, the authors found greater incidence of cutting, scratching, bruising, and nail biting in women than men and mixed support for increased incidence of burning in men. These findings suggest that while overall rates of NSSI may be comparable, gender differences in specific NSSI methods are likely. Such differences may hold important implications for the assessment of NSSI, as well as for our understanding of NSSI in men and women. For example, clinicians may overlook significant self-injury in male populations if they fail to assess for the types of methods endorsed most frequently by men.

Given the paucity of research on gender differences in NSSI—and the potential importance of its implications—the purpose of this study was to provide a preliminary investigation of differences in the parameters of NSSI between men and women in a nonclinical sample, including prevalence, frequency, age of onset, methods used, pain, sense of control, and degree of medical injury.

METHOD

Participants

Participants in this study were drawn from a larger study of NSSI in an undergraduate student sample. Using a two-phase screening process, 510 undergraduates at a university in the northeast completed a screening measure for NSSI (Frequency of Activities Scale; Andover & Pepper, 2002) and a measure of general psychological distress, the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1994). Individuals with and without histories of NSSI per the Frequency of Activities Scale were matched for general psychological distress using the Global Severity Index (GSI) of the SCL-90-R and were invited to participate in the second phase of the study. One hundred ten undergraduates with and without NSSI histories completed the Self-Mutilative Behaviors Interview (Andover & Pepper, 2002), an interview assessing history of NSSI behaviors. Determination of self-injury group was made based on responses to this interview. NSSI was defined as deliberate harm to the body without suicidal intent. Individuals reporting a suicide attempt but no history of NSSI ($n = 6$) were excluded from the study. Preliminary analyses revealed an outlier in number of NSSI episodes, reporting over 5,000 lifetime episodes. This case was removed from subsequent analyses, leaving a final sample of 103 participants. Nearly half of participants were male (45.6%, $n = 47$) and the majority was Caucasian

(71.8%, $n = 74$). The mean age of participants was 18.49 ($SD = 1.03$). Forty-seven percent of participants ($n = 48$) reported a history of NSSI; 39.6% of those reporting a history of NSSI were male ($n = 19$). Analyses for the current study focused specifically on participants with a history of NSSI.

Measures

Frequency of Activities Scale (Andover & Pepper, 2002). This 25-item questionnaire was developed as a brief screening measure for NSSI. Nine items assessing attempted suicide and methods of NSSI are embedded within a series of more benign items, such as "listen to music" and "play sports". The participant is asked to indicate the frequency with which he or she has taken part in specific activities, if at all ("never," "once," "couple of times," or "frequently"). Individuals who reported engaging in any NSSI behavior "a couple of times" or "frequently" on the FAS were invited to participate in the second phase of the study. A complete description of the measure can be found in Andover, Pepper, Ryabchenko et al. (2005).

Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1994). On this self-report inventory of current psychological symptoms, participants rate each of 90 items on a 5-point Likert-type scale from "not at all" to "extremely" bothered by the symptom, with higher scores indicating greater symptom severity. In this study, participants' scores on the Global Severity Index (GSI), the mean score of all 90 items, were used to match individuals with a history of NSSI to a control group in order to control for general distress. The internal consistency and retest reliability of the SCL-90-R have been supported in both clinical and non-clinical samples (Derogatis, 1994; Derogatis, Rickels, & Rock, 1976).

Self-Mutilative Behaviors Interview (Andover & Pepper, 2002). Because of a lack of a standardized interview specifically assessing the various NSSI methods and parameters of NSSI behaviors at the time this study was conducted, one was created. NSSI was defined as deliberate harm to the body without suicidal intent (i.e., Favazza, 1998; Prinstein, 2008). Any deliberate self-injury performed with suicidal intent was categorized as a suicide attempt. The interview investigates histories of specific NSSI behaviors (cutting, carving words, designs, or symbols into the skin, burning, scratching, interfering with wound healing, needle sticking, self-hitting, intentional bone breaking, and "other" method), including specific information regarding each method of NSSI, such as age at first episode, frequency, location of the injury, sense of control during NSSI, physical pain during NSSI, treatment seeking, and degree of medical injury. Sense of control and physical pain during the most recent episode of each method of NSSI are assessed on a five-point Likert-type scale from "not at all" to "a lot." Degree of medical injury was assessed using Rosen and Heard's (1995) self-injury scale. Descriptions of the most recent and most severe injuries are obtained from the participant. The interviewer then categorizes the injury into one of four levels representing increasing degrees of medical severity—Level 1 injuries are superficial and resulted in damage to only the first layer of skin, while Level 4 injuries require multiple stitches and were potentially disfiguring or life threatening. For the current study, average number of episodes per year was calculated by dividing the lifetime number of NSSI episodes by the number of years the participant reported engaging in NSSI. Pain during NSSI, control over NSSI, and medical injury ratings for the most recent and most

severe episodes of NSSI were obtained by averaging the scores for each method to create an aggregate score for each variable. The SMBI has been previously used among undergraduates (Andover, Pepper, Ryabchenko et al., 2005).

Procedure

All participants provided written informed consent to participate in this study. The full protocol took approximately 2.5 hours to complete, and participants received course credit as remuneration.

Statistical Analyses

The pattern of missing data was examined and found to be missing completely at random (MCAR) among participants with an NSSI history, and maximum likelihood estimates were computed for missing data and used in all analyses. Group differences were analyzed using *t*-tests and chi-square analyses when appropriate. All data analyses were performed using SPSS version 16.

RESULTS

Demographic variables were first compared between those reporting a history of NSSI ($n = 48$) and those without such a history ($n = 55$). Groups did not differ in age, $t(101) = .33$, $p = .75$, $r_{effect\ size} = .03$, or ethnicity, $\chi^2(1) = .43$, $p = .51$, $\Phi = .06$. Consistent with recent research, the NSSI and non-NSSI groups did not differ in gender, $\chi^2(1) = 1.33$, $p = .25$, $\Phi = .11$, with 60.4% of women and 39.6% of men reporting histories of NSSI. Those with an NSSI history were significantly more likely than those without to report a history of suicide attempts, $\chi^2(1) = 15.56$, $p < .001$, $\Phi = .39$. When investigated by gender, this pattern was significant for both men, $\chi^2(1) = 6.44$, $p = .01$, $\Phi = .37$, and women, $\chi^2(1) = 8.69$, $p = .003$, $\Phi = .39$.

The remainder of the analyses focused specifically on individuals reporting a history of NSSI ($n = 48$). We compared men and women with NSSI histories to determine if gender influenced the various NSSI parameters. As seen in Table 1, men and women did not differ significantly in reported number of lifetime episodes of NSSI, average number of episodes per year, engaging in NSSI within the past year, history of suicide attempts, or the subjective reporting of physical pain. However, women reported an earlier age of onset and greater medical injury at most recent and most severe episode than men. There was also a nonsignificant trend toward men reporting a greater sense of control over NSSI than women, $t(46) = 1.92$, $p = .06$, $r_{effect\ size} = .27$. Because of the large gender difference in standard deviations, we investigated variance from the mean by gender. Women exhibited significantly more variance from the mean than men in number of lifetime episodes, $t(42) = 3.64$, $p = .001$, $r_{effect\ size} = .49$, and average number of episodes, $t(38) = 2.55$, $p = .02$, $r_{effect\ size} = .38$, suggesting that men may represent a more homogenous group in terms of number of NSSI episodes than women.

Although there was no difference between men and women on number of NSSI methods used, $t(46) = .41$, $p = .68$, $r_{effect\ size} = .06$, there were gender differences in type of method chosen. Men were significantly more likely than women to report burning behaviors, $\chi^2(1) = 7.06$, $p = .008$, $r_{effect\ size} = .38$, and women were significantly more likely than men to report cutting behaviors, $\chi^2(1) = 4.11$, $p = .04$, $r_{effect\ size} = -.29$, and scratching behaviors, $\chi^2(1) = 7.36$, $p = .007$, $r_{effect\ size} = -.39$. There were no gender differences in rates of carving, interfering with wound healing, needle sticking, or self-hitting. The most commonly reported methods among women were cutting ($n = 14$) and scratching

TABLE 1. **Descriptive Statistics for Men and Women with a History of NSSI**

	Women ($n = 29$)	Men ($n = 19$)	Range	χ^2/t	$r_{effect\ size}$
Ethnicity (% Caucasian)	65.5	73.7		0.36	0.07
Age (years)	18.28 (0.92)	18.89 (1.45)		1.81	0.26
History of suicide attempt	27.6%	21.1%		0.26	0.61
NSSI within past year	89.7%	84.2%		0.31	0.08
Number of NSSI episodes	185.50 (356.48)	36.41 (43.19)	1–1022	1.67	0.10
Average number of NSSI episodes per year	20.44 (40.59)	6.26 (5.66)	0.93–170	0.96	0.14
Age at first episode	11.57 (3.19)	13.83 (3.67)	4–18	2.26*	0.32
Number of methods used	1.93 (0.88)	1.95 (1.39)	1–6	0.41	0.06
Medical injury at most recent episode	1.63 (0.51)	1.24 (0.56)		2.57*	0.35
Medical injury at most severe episode	1.85 (0.61)	1.47 (0.62)		2.08*	0.29
Pain during NSSI	1.53 (0.96)	1.21 (0.83)	0–3	1.17	0.17
Control over NSSI	2.92 (1.10)	3.47 (0.72)	0–4	1.92	0.27

Note. Unless otherwise specified, values in cells represent means and values in parentheses represent standard deviations for variables before transformation. Chi-square tests were used for tests involving ethnicity, history of suicide attempt, and NSSI within past year; all other analyses were conducted using independent samples *t*-tests. One outlier was omitted from these analyses. NSSI = Non-Suicidal Self-Injury.
*$p < .05$.

($n = 14$), while the most common method among men was self-hitting ($n = 9$).

DISCUSSION

This study is an exploratory investigation of gender differences in NSSI; we systematically described characteristics of NSSI among men and examined differences in these characteristics between men and women. The prevalence of NSSI among undergraduate students did not differ by gender in the current study, supporting recent findings of similar prevalence among nonclinical samples of college students, high school students, and military recruits (Gratz, Conrad, & Roemer, 2002; Klonsky, Oltmanns, & Turkheimer, 2003; Muehlenkamp & Gutierrez, 2004). On average, men with a history of NSSI reported engaging in the behavior approximately 36 times with a median of 15 times, and their first episode was during early adolescence. The majority stated that they had engaged in NSSI during the past year, and 20% of men reporting a history of NSSI reported that they had attempted suicide. Although individuals with a history of suicide attempts without NSSI were excluded from analyses, co-occurrence of NSSI and attempted suicide is expected (Langbehn & Pfohl, 1993; Nock, Joiner, Gordon et al., 2006). Men and women with NSSI histories did not differ significantly in reporting of a history of suicide attempts, an interesting finding given that women are more likely to attempt suicide (Moscicki, 1994). However, the relatively small sample size limits our ability to draw conclusions from this finding.

When compared to women with a history of NSSI, men with an NSSI history were as likely to report engaging in NSSI within the past year and reported significantly less heterogeneity than women

in number of lifetime episodes and average number of episodes per year. As reported in previous studies (e.g., Nock & Prinstein, 2004), both genders began engaging in NSSI during early adolescence. However, men reported being significantly older than women at first NSSI episode, which may inform target ages for NSSI prevention efforts. A similar pattern of gender differences is seen in the onset of depression, as women report an earlier onset than men (i.e., Nolen-Hoeksema & Girgus, 1994). Individuals with an NSSI history often report higher levels of depressive symptoms than those without an NSSI history (Andover, Pepper, Ryabchenko et al., 2005; Klonsky, Oltmanns, & Turkheimer, 2003); it is possible that the earlier onset of NSSI among women is associated with onset of depressive symptoms. Regarding the experience of NSSI itself, men and women reported similar experiences of pain during NSSI and control over the behavior, but women reported significantly greater degrees of medical injury than men at both the most recent episode and most severe episode of NSSI. The extent to which this reflects gender differences in pain perception among those with NSSI is unclear. Although recent studies have reported similar rates of NSSI among men and women in nonclinical adolescent and adult samples (Andover, Pepper, & Gibb, 2007; Gratz, Corad, & Roemer, 2002; Heath, Toste, Nedecheva et al., 2008; Hilt, Nock, Lloyd-Richardson et al., 2008; Klonsky, Oltmanns, & Turkheimer, 2003; Muehlenkamp & Gutierrez, 2004), the current findings suggest that the experience of NSSI may differ for men and women.

Interestingly, men and women reported differences in NSSI method. While previous research has stated the cutting is the most common method of NSSI (Briere & Gil, 1998), the most common method of NSSI among men was self-hitting. Between the genders, men were significantly more likely to report burning, and women were significantly more likely to report cutting and scratching, supporting previous findings of gender differences in NSSI method (Claes, Vandereycken, & Vertommen et al., 2007). Gender differences in type of NSSI method may explain previous gender prevalence findings, as women were found to comprise the majority of participants who cut (Andover, Pepper, Ryabchenko et al., 2005; Brown, Houck, Hadley et al., 2005), but the gender distribution for other forms of NSSI was equivalent (Andover, Pepper, Ryabchenko et al., 2005). The reason for this difference in method choice is unknown. We might speculate that this difference is reflective of the mechanisms behind gender differences in suicidal behaviors, such as those found in suicide method (Beautrais, 2003; Bradvik, 2007). McAndrew and Garrison (2007) reported that certain suicide methods are more likely to be perceived as "masculine" or "feminine"; it is possible that these perceptions also exist for NSSI method and are reflected in the reported gender differences. Differences in method choice may also be reflective of differences in underlying psychopathology. For instance, Andover, Pepper, Ryabchenko et al. (2005) found that individuals who cut reported significantly more anxious symptoms than those who engaged in forms of NSSI other than cutting. The finding of gender differences in method choice holds implications for NSSI assessment. Simply inquiring about one particular method of NSSI (e.g., cutting) may impede the identification of the behavior in men who are likely to use other methods of NSSI.

Another important factor not addressed in the current study is the function of NSSI and potential gender differences. Existing studies have suggested that the functions of NSSI may differ between men and women (Andover, Pepper, & Gibb, 2007; Claes, Vandereycken, & Vertommen,

2007), and researchers must fully investigate potential gender differences in function. Although not addressed in the current study, conformity to masculine gender norms such as emotional control, physical toughness, risk-taking, competition, and aggression may play an important role in the use and function of NSSI in men. For example, men who are more adherent to norms of physical toughness may be more likely to use NSSI to demonstrate this construct or may be more likely to utilize methods that establish this, such as burning with a lit cigarette rather than interfering with wound healing. This may be consistent with Claes, Vandereycken, & Vertommen's (2007) finding that men reported engaging in NSSI as a sign of strength more than women, although this difference was not statistically significant.

This study represents an early exploration into similarities and differences in NSSI characteristics by gender. Conclusions are limited by the study's small sample size, but findings provide empirical support for the continued research on gender differences in NSSI. Small and medium effect sizes for non-significant findings suggest that the study may have been underpowered to detect statistically significant differences, and future research utilizing a larger sample will improve power to detect significant differences between men and women on these and other parameters. The authors of the current study chose to focus on a nonclinical sample, but future studies should continue to investigate gender differences among clinical and nonclinical samples. Coupled with previous findings of gender differences in NSSI characteristics and in coping strategies used by those engaging in the behavior (Andover, Pepper, & Gibb, 2007; Claes, Vandereycken, & Vertommen, 2007), this study suggests that further investigation into gender differences in NSSI is warranted.

This study represents an important step in investigating NSSI in men and determining the generalizability of NSSI research to men. NSSI was long thought to occur primarily in women, and although recent research has included both men and women in their samples or has focused exclusively on men (see Gratz & Chapman, 2007), basic gender differences have not been adequately explored. Coupled with previous research (Andover, Pepper, & Gibb, 2007; Claes, Vandereycken, & Vertommen, 2007), the current findings suggest that there may be core gender differences in method, age of onset, frequency of the behavior, degree of injury, function, and other characteristics of NSSI. Clinicians and researchers should inquire about different methods of NSSI in order to adequately assess the behavior in men, as men may be more likely to self-injure using methods other than cutting.

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