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Characterizing gender differences in nonsuicidal self-injury: Evidence from a large clinical sample of adolescents and adults

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ABSTRACT

While nonsuicidal self-injury (NSSI) is common in both men and women, research exploring the intersection of NSSI and gender has been limited by the use of small samples of males drawn primarily from non-clinical populations. To address these limitations, we analyzed data from a large sample of patients enrolled in an NSSI partial hospitalization program (PHP) to compare males and females across several variables, including NSSI characteristics, correlates, and pre-post treatment outcomes. Results indicated similar NSSI characteristics and treatment outcomes for males and females, with few exceptions. Males notably reported lower severity levels for most NSSI correlates (e.g., psychopathology, suicidality), highlighting the need to screen males for NSSI even when reporting comparatively less impairment. Finally, our results also suggest that PHP treatment for NSSI can be beneficial for both males and females. These findings have implications for the assessment, diagnosis, conceptualization, and treatment of NSSI in males and females.

1. Introduction

Nonsuicidal self-injury (NSSI) is the intentional, direct injury to one's own body without suicidal intent [1]. NSSI is associated with negative physical and psychological outcomes, including tissue damage, depressive and anxiety disorders [2], eating disorders [3], and substance use [4]. Most notably, extensive cross-sectional and longitudinal research indicates that NSSI is one of the strongest correlates of suicidal ideation and attempts [5–7].

Early NSSI research primarily focused on understanding these behaviors in females, due to the assumption that females were more frequently affected than males [8,9]. Variability in findings are evident, however, with some studies of adults indicating equal or higher prevalence in males when compared to prevalence rates in females [10,11]. Similarly, within school-based adolescent samples, findings differ on rates across genders, with some data suggesting that gender differences occur more commonly in older adolescents [12–14]. Recent meta-analytic work suggests that, while females continue to be overrepresented, the average lifetime NSSI prevalence rate among males in the general population is over 26% [15].

To date, relatively few studies have examined differences in NSSI characteristics between males and females beyond prevalence rates. Findings from studies of undergraduate college students suggest that females and males do not differ in number of NSSI methods used [16,17], but that differences may exist for other aspects of NSSI, such as medical severity [16], the relevance of social and internal functions of self-injury [17], and corporeal location of the injury [14,17]. In addition, Bresin and Schoenleber [15] found that certain methods of NSSI were more commonly reported among females (i.e., cutting), whereas other methods did not show a gender disparity (i.e., burning or self-hitting).

In addition to understanding how NSSI itself may differ by gender, research utilizing nonclinical adolescent and young adult samples has examined associations between NSSI and other psychological constructs. For example, some research suggests that NSSI is associated with depression [18–20] and anxiety [21] in similar ways for males and females. In contrast, some correlates of NSSI have only been associated with females, such as spirituality concerns [18], Borderline Personality Disorder (BPD) symptoms [19], sexual assault, drug use, and sexual minority status [22], while there is some evidence that NSSI in men is associated with substance use and African-American ethnicity [22]. Further, NSSI may relate to negative views of one's own body in different ways for males and females; in one study of undergraduate students, males with a history of NSSI reported similar levels of self-

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objectification as females with and without a history of NSSI, but higher levels than males without NSSI [23]. Researchers have also suggested that the association between NSSI and suicidality varies by gender; a large longitudinal study of adolescents in China found that the association between attempted suicide and NSSI was stronger for females than males, and that NSSI frequency was associated with increased likelihood for suicide attempts over time for females, but not for males [24].

The vast majority of the existing literature investigating NSSI characteristics and correlates associated with gender have been limited to general population samples; very few have examined clinical populations. The disparity in NSSI prevalence between males and females is generally greater in clinical populations, with females significantly outnumbering males [15]; this may be due to differences in treatment-seeking behavior across genders, in particular the stigma males feel against seeking mental health treatment [25,26]. Some research suggests that other NSSI characteristics in clinical samples may also vary by gender, with females reporting an earlier age of onset than males [27], and males reporting higher NSSI frequency per day and greater pain intensity with NSSI [28]. Interestingly, in the latter study, males also reported differences in the function of NSSI functions, fewer NSSI methods, and lower intensity of emotions before and after NSSI. These findings present a mixed picture regarding the severity of NSSI in clinical samples of males and females.

Regarding common NSSI correlates, Islam and colleagues [29] found no differences between genders on clinical severity of non-NSSI pathology (e.g., eating disorder symptoms, stealing, alcohol/drug use). Rizzo and colleagues [30] expanded on this work, showing an association between NSSI and physical aggression among males, in contrast to associations among females between NSSI and anger, hostility, and verbal aggression, but not physical aggression. These differences may be due to the gendered implications of aggression; physical aggression may be more socially acceptable for males, providing a socially sanctioned and covert method for NSSI. Kicking or punching walls for example, can lead to significant injury, but may be viewed as aggression turned outwards instead of inwards, and may not be noticed as a method of NSSI [31]. Indeed, research has indicated that gender role expectations and performance may influence the diagnosis, treatment, and conceptualization of NSSI in men and women [32,33].

Researchers have begun the important task of clarifying the nature of NSSI in males when compared to females, both with respect to the injury itself as well as numerous correlates, yet the existing literature remains limited in several ways. First, because much of the existing research has focused on nonclinical samples of adolescents and young adults, it is unclear what gender differences, if any, exist for individuals with clinically significant and impairing NSSI. Second, given significantly greater gender differences in NSSI prevalence in clinical samples compared to nonclinical samples [15], existing work in clinical samples includes too few males to address nuanced differences between genders. Third, in many cases, assessment tools for NSSI have been limited in scope, making it difficult to evaluate the multitude of ways in which NSSI may differ between females and males. Finally, large gaps in the literature exist with regard to NSSI and gender; for instance, no research has described differences in treatment outcomes for NSSI, or whether NSSI Disorder criteria are associated with clinical severity differently for each gender.

To address these issues, the current study used data collected during routine clinical evaluation and outcomes assessment at a partial hospitalization treatment program for NSSI. This sample provides a unique opportunity to investigate how NSSI characteristics and correlates are associated with gender in a large, diverse group of adolescents and adults, all of whom experienced clinically significant NSSI at the time of assessment. Our study had three primary research questions. First, we aimed to investigate how NSSI phenomenology (e.g., methods, location, functions, proposed DSM-5 NSSI disorder criteria) differed between males and females in an acute care setting. Based on prior research, we hypothesized that female self-injurers would be more likely to report cutting behavior [15,17,28], higher levels of the affect regulation function of NSSI [17,28], engaging in NSSI on their arms or legs [14,17], and experiencing stronger craving for NSSI [34] than males. Second, we examined differences between males and females on known NSSI correlates (e.g., BPD symptoms, suicidality, comorbid diagnoses, psychopathology, quality of life). Given large, well-designed studies highlighting gender differences in BPD symptoms [19] and suicidality [24] among self-injurers, we hypothesized that females would endorse more BPD symptoms and a more significant history of suicidality than males. Third, we evaluated whether, and to what extent, males and females differ in their response to clinical intervention on relevant outcome variables (e.g., suicidality, NSSI urges, BPD symptoms, overall psychopathology, and quality of life). As the intervention being evaluated has primarily been validated in females [34], there was insufficient evidence to support a specific hypothesis about the relationship between gender and treatment outcomes for NSSI.

2. Methods

2.1. Subjects and procedures

To examine potential gender differences among self-injurers within a clinical setting, we utilized data that were collected as part of routine clinical care and program evaluation for an acute NSSI treatment program at a large private behavioral health hospital in the Midwestern United States. The treatment program, which, for the majority of patients, involves partial hospitalization as well as a step down to intensive outpatient treatment, enrolls individuals ages 11 and up for whom self-injury, including both nonsuicidal and suicidal, are the primary presenting problem. While patients are referred to this program for NSSI and/or suicidal thoughts and behaviors, only patients who reported engaging in at least 1 episode of NSSI in the year prior to treatment intake were included in these analyses. Further, patients often present with comorbid mental disorders, such as mood, anxiety, eating, and substance use disorders.

The treatment program is designed as a three-week, group-based intervention, based on the Emotion Regulation Group Therapy treatment model [35]. The program aims to teach patients skills to adaptively identify and respond to their emotions with the goal of reducing the frequency of self-injury. Examples of topics covered in the curriculum include emotional awareness, functions and consequences of self-injury, primary and secondary emotions, emotional willingness/unwillingness, impulse control, distress tolerance, and emotion regulation strategies. In addition to primary skills groups, patients also receive individual therapy/case management and family therapy, as well as participate in process, expressive therapy, medication management, and spirituality therapy groups.

All patients are asked to complete assessments at admission and discharge as part of routine clinical assessment and program outcome evaluation. Archival data included in the present study were naturalistically collected between 2007 and 2017 from these intake and discharge assessments and were de-identified prior to analysis according to the Safe Harbor standard (HIPAA Privacy Rule 45 CFR § 164.514[(b] [2]). It is important to note that data were collected naturalistically and were not part of a consented research study. All data collection, management, and de-identification procedures were conducted in accordance with the hospital's Institutional Review Board and deemed exempt from further review per federal guidelines.

2.2. Data selection criteria and screening procedures

Patients were included in analyses if they completed any portion of the intake or discharge questionnaires described below. Patients were excluded if they had a primary diagnosis of a psychotic disorder, or if they did not report NSSI in the year prior to intake.