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Non-suicidal self-injury among adolescents: Diagnostic correlates and relation to suicide attempts

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Abstract

Non-suicidal self-injury (NSSI) is a prevalent behavioral problem, yet many fundamental aspects of NSSI remain unknown. This case series study reports on the diagnostic correlates of adolescents with a recent history of NSSI and examines the relation between NSSI and suicide attempts. Data are from clinical interviews with 89 adolescents admitted to an adolescent psychiatric inpatient unit who engaged in NSSI in the previous 12 months. Results revealed that 87.6% of adolescents engaging in NSSI met criteria for a DSM-IV Axis I diagnosis ($M=3.0$, S.D. = 2.2, range = 0 to 8 diagnoses), including externalizing (62.9%), internalizing (51.7%), and substance use (59.6%) disorders. Most adolescents assessed also met criteria for an Axis II personality disorder (67.3%). Overall, 70% of adolescents engaging in NSSI reported a lifetime suicide attempt and 55% reported multiple attempts. Characteristics of NSSI associated with making suicide attempts included a longer history of NSSI, use of a greater number of methods, and absence of physical pain during NSSI. These findings demonstrate the diagnostic heterogeneity of adolescents engaging in NSSI, highlight the significant overlap between NSSI and suicide attempts, and provide a point of departure for future research aimed at elucidating the relations between non-suicidal and suicidal self-injury.

Keywords: Self-mutilation; Deliberate self-harm; Self-injurious behavior; Diagnosis; Personality disorder

1. Introduction

Self-injurious behavior (SIB) refers to a broad class of behaviors in which an individual directly and deliberately causes harm to herself or himself. Such behavior can include *non-suicidal self-injury* (NSSI), which refers to direct, deliberate destruction of one's own body tissue in the absence of intent to die; or *suicide attempts*, which refer to direct efforts to intentionally end one's own life. Some authors have noted the theoretical, methodological, and clinical importance of distinguishing among various forms of SIB (O'Carroll et al., 1996; Linehan, 1997); and these suggestions have been supported by empirical studies demonstrating that self-injury-related constructs differ in their correlates (Nock and Kazdin, 2002; Nock and Kessler, in press) and functions (Brown et al., 2002). Although it is clear that NSSI and suicide attempts represent distinct behavioral phenomena, several important questions about

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NSSI and its relationship to suicide attempts are yet to be explained.

First, many fundamental characteristics of NSSI remain unknown. Indeed, the vast majority of prior work on SIB has focused on suicidal ideation and suicide attempts, with only a paucity of research addressing NSSI. For instance, it has been suggested that adolescents engaging in NSSI have higher rates of internalizing disorders (e.g., Ghaziuddin et al., 1992), and also may be at increased risk for a wider range of other cognitive, affective, and behavioral symptoms (e.g., Guertin et al., 2001); however, information about the diagnostic correlates of NSSI is lacking. Such information would be very useful for determining how NSSI corresponds with disorder currently listed in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; American Psychiatric Association, 1994), especially given recent suggestions that NSSI should be considered for inclusion as a new DSM-IV diagnosis (Pattison and Kahan, 1983; Muehlenkamp, 2005).

Even less research attention has been given to the presence of personality disorders among adolescents who engage in NSSI. Although there is debate about the validity or appropriateness of diagnosing personality disorders before adulthood, the current edition of the DSM indicates they may be diagnosed when "maladaptive personality traits appear to be pervasive, persistent, and unlikely to be limited to a particular developmental stage or an episode of an Axis I disorder" (American Psychiatric Association, 1994, p. 631). Moreover, prior work has shown that the prevalence and the structure of personality disorders among adolescents resemble those in adulthood, and that the presence of a personality disorder during adolescence significantly increases the risk of subsequent disorders, providing validity for the application of such diagnoses (Bernstein et al., 1993; Westen et al., 2003). Although NSSI is most often associated with borderline personality disorder (BPD; Dulit et al., 1994; Shearer, 1994), the rate of BPD among adolescents engaging in NSSI is not known, nor is the rate of other personality disorders in this population. Overall, a systematic examination of Axis I and Axis II diagnoses among adolescents with a recent history of NSSI would be informative to both scientists and clinicians working with adolescent self-injurers.

Second, although NSSI and suicide attempts are distinct behavioral phenomena, they often co-occur within individuals (Dulit et al., 1994; Brown et al., 2002), yet it is unclear why this is so. Gaining a better understanding of what percentage of those engaging in NSSI also make suicide attempts, as well as why these behaviors are related, is a necessary step in helping clinicians identify and intervene with individuals at risk for multiple forms of SIB. The identification of aspects of NSSI that are associated with suicide attempts would be particularly useful given the dangerousness and lethality of these behaviors.

Why would individuals who engage in NSSI be at elevated risk for suicide attempts? Joiner (2005) recently advanced a comprehensive theory of SIB that makes several specific hypotheses about why individuals with a history of NSSI might engage in suicide attempts. He proposed that because suicide is such a frightening and extreme action, most people initially lack the ability to engage in suicide attempts. Individuals may become more courageous, competent, and willing to make suicide attempts with repeated engagement in NSSI and may even experience increasing reinforcement in the process (e.g., many patients report that self-injury has calming effects; see Haines et al., 1995). In other words, a negative side effect of engaging in NSSI may be that individuals habituate to the fear and physical pain associated with self-injury, thus acquiring the capability to perform lethal self-injury. As a test of this theory, we would hypothesize that those with a longer and more extensive history of NSSI (i.e., greater frequency, longer duration, and use of more methods of NSSI) should make suicide attempts more often than those without such a history.

The fundamental propositions of this model also draw upon previous research on pain analgesia among those engaging in SIB. Prior studies have demonstrated that some individuals report experiencing minimal or no pain during repetitive NSSI, despite clear and sometimes severe tissue damage (e.g., Nock and Prinstein, 2005). Differences in the experience of pain also are evident in behavioral laboratory tasks measuring pain threshold and tolerance. For instance, women diagnosed with borderline personality disorder (BPD) who report analgesia during NSSI have a higher pain threshold and pain tolerance on laboratory tasks (e.g., the cold pressor task) than women with BPD who report pain during NSSI (Russ et al., 1992), those who have no history of NSSI (Kemperman et al., 1997), depressed psychiatric inpatients (Russ et al., 1999), and healthy controls (Bohus et al., 2000). Similarly, several studies have demonstrated pain analgesia among recent suicide attempters. Orbach et al. (1997) found that adolescent suicide attempters (excluding those who had engaged in NSSI) have higher thermal pain thresholds and greater pain tolerance than non-suicidal adolescent inpatients and healthy control subjects. In addition, Orbach et al. (1996) reported that individuals visiting an emergency room following a suicide attempt endured more electric shocks and reported less physical pain than healthy control subjects or those admitted for accidental injuries. Taken together, these findings provide converging evidence for