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Specificity of childhood maltreatment and emotion deficit in nonsuicidal self-injury in an inpatient sample of youth

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ABSTRACT

The present study investigated the function of two specific emotion-related skills, emotion expressivity and emotion coping, as potential mediators in the relations between childhood sexual, physical, and emotional abuse and NSSI. A robust body of work supports the role of emotion regulation in nonsuicidal self-injury, but additional research is warranted to tease apart the role of specific emotion regulation deficits as predictors of NSSI. Participants included 95 youth (M_{age}=14.22, SD_{age}=1.67; 58% female) hospitalized on one of two acute care psychiatric inpatient units. Participants completed self-report questionnaires related to childhood experiences of trauma, current emotion expressivity and coping, and lifetime frequency of NSSI. Path analytic models indicated that only child emotional abuse was directly associated with NSSI when all abuse subtypes were examined simultaneously. Results also indicated that poor emotion expressivity, but not emotion coping, mediated the relation between childhood experiences of emotional abuse and NSSI.

1. Introduction

Nonsuicidal self-injury (NSSI), defined as the direct and purposeful destruction of body tissue without suicidal intent, has received increased attention over the past 20 years as a psychological problem in and of itself, as well as an indicator of risk for additional psychopathology and maladaptive outcomes (e.g., Nock et al., 2006). Various models have been proposed to account for reasons why youth engage in NSSI, most of which center around the developmental concept that NSSI occurs as a result of dysfunction in the individual's capacity for adaptive emotion regulation (e.g., Linehan, 1993; Nock and Prinstein, 2004; Yates, 2009). Despite considerable gains in the identification of risk factors that increase the likelihood of NSSI occurrence, additional research is warranted to delineate greater specificity in how these factors are linked to NSSI. In the current study, we examined the specificity of self-reported childhood maltreatment (i.e., child physical, sexual, and emotional abuse) and emotion-related deficits (i.e., poor emotion expressivity and emotion coping) as factors associated with NSSI in a sample of youth receiving inpatient psychiatric treatment.

To date, numerous theories and related research from clinical and developmental perspectives have converged upon defining NSSI as a problem of emotion dysregulation. Empirical research supports the link between emotion dysregulation and NSSI in both community (Gratz and Roemer, 2008; Hilt et al., 2008) and clinical samples (Sim et al., 2009). Research focusing on the function of NSSI suggests that youth may engage in self-injury as a means of reducing intense, negative affect (Favazza and Rosenthal, 1993) and as a means of avoiding unwanted emotions (Chapman et al., 2006). These findings are consistent with a developmental psychopathology perspective on NSSI broadly, and with current theoretical concepts specifically. For example, the Biosocial Model of emotion dysregulation (Crowell et al., 2009; Linehan, 1993) postulates that youth might engage in NSSI because of the unfortunate combination of biological emotional vulnerabilities (e.g., impulsivity, heightened emotional sensitivity, slow return to baseline) and deficits in the learned emotion-related competencies needed to modulate these vulnerabilities. These deficits may arise when emotional vulnerabilities are met with an invalidating environment in which emotional needs are not effectively responded to by caregivers or actively thwarted, as in maltreating families. This theoretical model dovetails with a broader developmental literature in which childhood maltreatment is frequently identified as a form of adversity associated with a variety of poor outcomes, including emotional dysregulation and NSSI (Muehlankamp et al., 2010; van der Kolk and Fisler, 1994; van der Kolk et al., 1991; Yates, 2004; 2009). In the only prospective

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study linking childhood maltreatment to later NSSI, Yates et al. (2008) report relations of physical and sexual abuse to NSSI at age 26; participants in this study primarily endorsed intrapersonal regulatory motivations for self-injury, and dissociation mediated longitudinal links between sexual abuse and NSSI in adulthood.

In terms of specific types of abuse and links to NSSI, the literature has shown mixed findings. While sexual abuse has been identified by Linehan and others as an exemplar invalidating environment (Linehan, 1993, p. 53), a more recent meta-analysis (Klonsky and Moyer, 2008) reported only a small effect for the overall relation of sexual abuse to NSSI. Research has also examined other forms of childhood maltreatment as predictors of NSSI. Childhood physical abuse is associated with increased odds of engaging in NSSI (Swannell et al., 2012) and in comparison with non-injurers, those who engage in NSSI report higher levels of childhood physical abuse (Di Pierro et al., 2012).

Although it is a less frequently studied form of maltreatment, childhood emotional abuse is particularly relevant to the study of emotion dysregulation and NSSI because of the ways in which it deprives or undermines a child's need for a supportive emotional family climate, which serves as a basis for healthy emotion regulation (Morris et al., 2007). Childhood emotional abuse is characterized by exposure to a chronic, highly critical, hostile, and controlling family environment that communicates to the child that s/he is unlovable, worthless, and even in danger (APSAC, 1995). A history of emotional abuse is linked to a host of maladaptive outcomes in adolescence (e.g., Burns et al., 2010; Egeland, 2009; Gibb et al., 2007) and is a unique predictor of psychological and behavioral difficulties, even when considering co-occurrence with other types of abuse (e.g., Shaffer et al., 2009). In terms of associations between emotional maltreatment and NSSI specifically, research indicates that emotional neglect is a significant risk factor for adult NSSI in a non-clinical sample of adult women, even after accounting for other familial risks (e.g., insecure attachment, parental separation; Gratz et al., 2002). In another study by Sim et al. (2009), emotional maltreatment, measured by a latent construct containing emotional abuse and neglect, was related to hospitalized adolescents' NSSI.

Despite robust relations among childhood maltreatment, emotion dysregulation, and NSSI, additional research is warranted to delineate the specificity of how emotion dysregulation might mediate relations from childhood maltreatment to NSSI. Emerging research makes a compelling case for taking a more fine-grained approach to identifying specific emotion skills that comprise emotion regulation, broadly defined (e.g., Kranzler et al., 2015). Gratz and Roemer (2008), for example, found support for deficits in emotional clarity as a key variable in understanding NSSI; using the same measure of emotion regulation, Muehlenkamp and colleagues found difficulties with emotion awareness, clarity, non-acceptance, and impulse control were all more common in individuals with abuse histories who self-injured (Muehlankamp et al., 2010). Other research has also examined alexithymia and reluctance to express emotion (Paivio and McCulloch, 2004; Sim et al., 2009). Sim et al. examined both emotion awareness and reluctance to express emotions as a latent construct, and found the construct had mediational properties in the link between an invalidating environment (i.e., emotional abuse and neglect) and NSSI. However, it is unclear whether teasing apart these specific aspects of emotion regulation would yield unique effects.

To this end, the current study examined relations among childhood maltreatment subtypes (sexual, emotional, and physical) and NSSI within a diverse sample of boys and girls between the ages of 10 and 17 in a psychiatric hospital setting; we further tested the mediating role of specific emotion-related skills in these relations. It was expected that all forms of maltreatment would be related to higher frequencies of NSSI; comparisons among maltreatment subtypes were exploratory. It was further hypothesized that emotion-related skills would mediate the links between child maltreatment and NSSI. Given previous research emphasizing associations between maltreatment and impaired emotional awareness/expression, it was hypothesized that this aspect of emotion regulation may emerge as a stronger mediator than other emotion-related skills.

2. Method

2.1. Participants

Participants in the current study were 95 youth aged 10 to 17 (M_{age} = 14.22, SD_{age} = 1.67; 58% female), who were recruited from two child and adolescent psychiatric hospital units in the Southeastern United States. Inclusion criteria consisted of youth who, upon evaluation by nurses, had an intellectual functioning capacity that was average (i.e., not in the borderline or low range), so that the participants were able to complete study questionnaires. Nurses used their clinical judgement to assess this criterion of intellectual capacity for participation. Youth also had to be capable of engaging in regular school-related activities on the unit. The present sample was ethnically diverse, with youth identified as Caucasian (56%), African American (35%), Hispanic (3%), and Asian (1%). Three percent identified as "Other" and 2% did not report on ethnicity. For a majority of the sample, the current admission to the inpatient unit was the youth's first admission (75%). Ten percent of the sample had been admitted previously, and approximately 15% of the sample had been admitted two or more times prior to the current admission. To obtain diagnostic information, a psychiatry resident examined medical records for all participants. With regards to primary diagnosis, approximately 4% of the sample had no primary psychological diagnosis, 33% percent had a primary diagnosis of unipolar depression and 18% had a primary diagnosis of mood disorder NOS, 10% had a primary diagnosis of bipolar disorder, 6% for anxiety or obsessive-compulsive disorder, 5% for posttraumatic stress disorder, 13% externalizing disorders (i.e., conduct, oppositional defiant disorder, or ADHD), 4% had a diagnosis of schizophrenia or psychosis, and 4% had an "other" diagnosis as their primary diagnosis, including substance abuse (n = 3) and gender identity disorder (n = 1). We did not have diagnostic information for 3% of the sample. In terms of comorbidity, 63% of the sample had at least one comorbid diagnosis.

2.2. Measures

2.2.1. Nonsuicidal self-injury

The *Deliberate Self-Harm Inventory* (DSHI; Adapted from Gratz, 2001) is a measure that assesses for ways in which youth engage in self-injurious behavior. The DSHI asks youth whether they have engaged in 17 unique self-injurious behaviors (i.e., cutting, burning, punching, biting self, carving skin, etc.). For each self-injurious behavior, questions ask the participants to identify when the behavior began, to estimate how many times they have engaged in the behavior (i.e., lifetime frequency), and to report on the last time they engaged in the behavior. For the purpose of the current study, the measure was adapted to include multiple-choice options, to facilitate youth completion of the measure. For example, youth were asked to report the lifetime frequency of the endorsed behavior (i.e., "How many times have you done this?") by choosing one of the following options: (a) 1–2 (b) 3–5 (c) 6–12 (d) More than 12 times. A frequency of self-injury was calculated by summing the reported frequency from each self-injurious behavior (α = 0.85).