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The role of emotion reactivity and gender in the relationship between psychopathology and self-injurious behavior

Evan M. Kleiman [a,*], Brooke Ammerman [a], Amy E. Look [a], Mitchell E. Berman [b], Michael S. McCloskey [a]

[a] Temple University, Philadelphia, PA, United States
[b] Mississippi State University, MS, United States

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ABSTRACT

The goal of the present study was to examine emotion reactivity, a broad construct that consists of an individual's sensitivity, intensity, and persistence of emotional reactions, as a mediator of the relationship between two types of psychopathology (depression symptoms and borderline personality disorder (BPD) symptoms) and history of self-injurious behavior (non-suicidal self-injury (NSSI) and suicide attempts (SA)). We also examined gender as a potential moderator of this relationship. Participants ($N = 1914$) completed measures of emotion reactivity, psychopathology, and self-injurious behavior. Results using a series of mediated path analyses indicated that emotion reactivity mediated the relationship between (1) depressive symptoms and NSSI in females only, (2) depressive symptoms and SA in females only, and (3) probable BPD diagnosis and NSSI in both genders. Emotion reactivity did not mediate the relationship between probable BPD diagnosis and SA in either gender. Our findings suggest that emotion reactivity is a possible pathway through which depression and self-injurious behavior relate, especially in women. We temper these findings, however, within the context of relatively modest observed effects.

1. Introduction

Self-injurious behavior (SIB), a construct consisting of suicide attempts (SA) and non-suicidal self-injury (NSSI), is a problem of widespread concern. Lifetime prevalence rates of SIB in the United States are estimated at 5% for SA (Kessler, Borges, & Walters, 1999) and 6% for NSSI (Klonsky, 2011). NSSI and SA are considered distinct, but related, constructs. There are several factors that differentiate NSSI and SA. For example, emotion regulation is positively associated with NSSI (Gratz & Roemer, 2008), but negatively associated with SA (Anestis, Bagge, Tull, & Joiner, 2011). Despite evidence differentiating, NSSI and SA, there are factors that confer risk to both NSSI and SA, including psychopathology such as depression and borderline personality disorder (BPD) (Zisook, Goff, Sledge, & Shuchter, 1994), female gender (Mościcki, 1994), and emotion reactivity. Emotion reactivity consists of sensitivity, intensity, and persistence of emotional reactions (Nock, Wedig, Holmberg, & Hooley, 2008) that has been related to both SA history (Dour, Cha, & Nock, 2011; Najmi, Wegner, & Nock, 2007) and NSSI (Glenn, Blumenthal, Klonsky, & Hajcak, 2011).

In addition to its direct relationship with SIB, emotion reactivity represents a mechanism through which psychopathology and SIB relate. For example, emotion reactivity associated with depression may drive individuals to escape aversive emotional states through NSSI. Supporting this idea, Nock et al. (2008) found that emotion reactivity mediated the relationship between a composite of depression, anxiety, and eating disorders, and SIB. Surprisingly, however, there has been no examination of emotion reactivity in the relationship between specific disorders and SIB. Depression is strongly associated with NSSI (Hoff & Muehlenkamp, 2009) and SA (Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006). Thus, it is important to replicate the findings that emotion reactivity mediated the relationship between a composite of psychopathology (in which depression was included) and SIB using a measure of only depressive symptoms.

It is also surprising that there has been no exploration of whether these findings apply to borderline personality disorder (BPD). Engagement in SIB is a core diagnostic feature of BPD (Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004) There is support for the idea that emotion reactivity plays a role in the BPD-SIB relationship. Emotion regulation deficits are a key aspect of BPD (Rosenthal et al., 2008) and NSSI (Gratz & Roemer, 2008) and emotion reactivity is thought to predispose individuals to poor emotion regulation (Gross, 1998; Nock et al., 2008). Thus, we would expect

* Corresponding author. Address: Department of Psychology, Temple University, 1701 N 13th Street, Philadelphia, PA 19122, United States. Tel.: +1 215 359 6148.
E-mail address: evan.kleiman@temple.edu (E.M. Kleiman).

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that, like other psychopathologies, emotion reactivity would also mediate the relationship between BPD and SIB.

Another variable of interest is gender. We expected that women will have higher levels of psychopathology, emotion reactivity, and SIB than men and that the relationships between the three variables are stronger for women. We expected these differences for several reasons. First, women experience more severe and debilitating symptoms of depression (Hankin & Abramson, 2001; Piccinelli & Wilkinson, 2000) and BPD (Grant et al., 2008). Second, women have higher rates of SIB (Mościcki, 1994). Research in adolescents suggests girls experience stronger emotion reactivity to stress than boys (Hankin, Mermelstein, & Roesch, 2007; Rudolph, 2002). In contrast, in the study by Nock et al. (2008) no gender differences in emotion reactivity emerged. These analyses, however, were at the bivariate (i.e., correlational) level. We posited that gender differences are more relevant when considering the overall mediational framework involving both psychopathology and SIB. Thus, a secondary goal of this study is to examine gender as a moderator of the mediational relationship between psychopathology and SIB. Specifically, we expected that the effect of emotion reactivity on the relationship between psychopathology and SIB will be more pronounced for women than men.

1.1. The present study

The present study has several goals. First, we aim to replicate (Nock et al., 2008) findings that emotion reactivity mediates the relationship between depression and SIB. While Nock et al. (2008) used a composite of anxiety, depression, and eating disorders, we used depression symptoms due to its higher relevance to SIB compared to anxiety and eating disorders. Second, we examine emotion reactivity as a mediator in the relationship between BPD and SIB. Finally, we also examine female gender as a moderator of mediated effect of depressive symptoms and BPD on NSSI and SA through emotion reactivity, expecting women to experience a more profound effect than men. While some factors such as distress tolerance have opposite effects on NSSI and SA (i.e., distress tolerance is negatively associated with NSSI but positively associated with SA; Anestis, Knorr, Tull, Lavender, & Gratz, 2013), previous research (Nock et al., 2008) suggests that emotion reaction reactivity is a factor that is positively associated with both NSSI and SA. Thus, given the conflicting evidence as to which factors do or do not differentially predict NSSI and SA, we are not making any specific hypothesis with respect to how emotion reactivity may be differentially related to NSSI and SA.

2. Method

2.1. Participants and procedure

Participants were 1914 undergraduates (61.4% female, *M* age = 21.02, *SD* = 3.66, range 17–72) from a large urban university who completed a series of self-report measures as part of a larger, IRB-approved study on a secure website for course credit. Approximately 61% of the sample identified as Caucasian, 14% Asian, 13% African American, and 4% mixed race. Approximately 2% of the sample indicated they preferred not to give their race; the remaining 8% self-identified as "other".

2.2. Materials

2.2.1. Probable BPD diagnoses

The Mclean Screening Instrument for Borderline Personality Disorder (MSI-BPD; Zanarini et al., 2003) is a ten item self-report measure of BPD symptoms. Higher scores equal greater severity of symptoms. The MSI-BPD demonstrates strong internal consistency and convergent validity with other measures of BPD (Gardner & Qualter, 2009). In the present study, the MSI-BPD demonstrated acceptable internal consistency (alpha = .82). Zanarini et al. (2003) find that a cutoff score of seven best distinguishes probable from non-probable diagnoses of BPD. Thus, consistent with Zanarini et al. (2003), we dichotomized the total score on the MSI-BPD so that scores of 7 and above were identified as having clinically elevated BPD symptoms and a probable BPD diagnosis.

2.2.2. Depressive symptoms

The Quick Inventory of Depressive Symptomology (QIDS; Rush et al., 2003) is a sixteen item self-report measure of depressive symptomology. Higher scores equal higher levels of depressive symptoms. The QIDS has strong convergent validity with other measures of depressive symptoms (Rush et al., 2006). In the present study, the QIDS demonstrated high internal consistency (alpha = .96). Although scores can be converted to severity level-scores (e.g., mild, moderate, severe), we used the measure as a continuous variable. This is because QIDS severity level scores do not correspond to likelihood of depression diagnosis, unlike the MSI-BPD's cutoff scores that correspond to likelihood of BPD diagnosis.

2.2.3. Emotion reactivity

The Emotion Reactivity Scale (ERS; Nock et al., 2008) is a 21 item self-report measure of emotion reactivity. It includes items that measure the sensitivity, intensity, and duration of emotions. All items are summed to a single scale where higher scores equal higher levels of emotion reactivity. The ERS is reported to have strong internal consistency and convergent validity (Nock et al., 2008). In the present study, we found the ERS to have high internal consistency (alpha = .96).

2.2.4. Non-suicidal self-injury history

We used an item from the Forms and Functions of Self Injury Interview (FAFSI: Jenkins, Conner, & Alloy, 2011) for this study that assessed whether or not an individual had ever engaged in at least one incident of NSSI[1] in their lifetime. We coded this item such that 0 = no past NSSI and 1 = past NSSI.

2.2.5. Suicide attempt history

We used the item assessing whether or not an individual had attempted suicide in their lifetime from the Suicidal Behaviors Questionnaire-Revised (SBQ-R; Osman et al., 2001). We coded the item such that 0 = no past attempts and 1 = past suicide attempt.

2.3. Analytic strategy

2.3.1. Mediation

We tested four mediated path analyses. The first two models tested emotion reactivity as a mediator of the relationships between (1) depressive symptoms and SA and (2) depressive symptoms and NSSI. The second two models tested emotion reactivity as a mediator of the relationships between (3) BPD symptoms and SA and (4) BPD symptoms and NSSI. Thus the difference between models 1/2 and 3/4 was the use of depressive or BPD symptoms as the predictor variable. The difference between models 1/3 and 2/4 was the use of SA history or NSSI history as the outcome variable. All models used emotion reactivity as the medi-

[1] We also conducted analyses using repeated NSSI (i.e., five or more times in life) vs. non-repeated NSSI (i.e., 0–4 times in life) and analyses using number of times engaging in NSSI. Both sets of analyses had the same interpretation as the analyses reported.