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Behaviorally-indexed distress tolerance and suicidality

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ABSTRACT

Research indicates that distress tolerance exhibits a complicated relationship with risk factors for suicidal behavior. Specifically, low self-reported distress tolerance has been linked to perceived burdensomeness and thwarted belongingness. Contrastingly, high self-reported distress tolerance has been linked to the acquired capability for suicide. Given the frequently discrepant findings between self-report and behavioral indices of distress tolerance, we sought to expand upon prior findings by testing these relationships utilizing a behavioral measure of distress tolerance. Additionally, in an effort to further clarify the role of distress tolerance relative to painful and/or provocative experiences in the acquired capability, we examined whether distress tolerance serves as a moderator. Results revealed no significant associations between distress tolerance and burdensomeness or belongingness; however, distress tolerance was positively associated with the acquired capability. Furthermore, the interaction of distress tolerance and painful and/or provocative experiences significantly predicted the acquired capability, with the strength of the association increasing at higher levels of distress tolerance. Results highlight the potential importance of perceived versus actual ability to tolerate distress with respect to suicidal desire. In contrast, the results reflect the importance of actual persistence in the acquired capability.

Distress tolerance, typically defined as the self-reported or behaviorally-demonstrated capacity to persist while experiencing aversive experiential states (e.g., Simons and Gaher, 2005), has been associated with a number of clinically meaningful outcomes. Low distress tolerance in particular has been implicated in a range of maladaptive behaviors, including binge eating, substance use, gambling, and non-suicidal self-injury (e.g., Anestis et al., 2007; Buckner et al., 2007; Daughters et al., 2008; Nock and Mendes, 2008). Furthermore, low levels of distress tolerance have also been linked to a number of specific mental illnesses, including post-traumatic stress disorder (PTSD; Marshall-Berenz et al., 2010) and borderline personality disorder (BPD; Linehan, 1993).

Recently, researchers have investigated the potential role of distress tolerance in suicidality as considered through the lens of the interpersonal-psychological theory of suicidal behavior (IPTS; Joiner, 2005; see Van Orden et al., 2010 for a thorough review of the theoretical and empirical foundations of the IPTS) and early results have demonstrated a fairly complicated relationship. Specifically, whereas low levels of distress tolerance have been shown to be associated with higher levels of perceived burdensomeness and thwarted belongingness (Anestis et al., 2011a; Anestis et al., 2011b), higher levels of distress tolerance have been shown to be associated with the acquired capability for suicide (Anestis et al., 2011a; Bender et al., 2011), a variable theorized to be necessary for suicidal desire to result in serious or lethal suicidal behavior. The acquired capability is theorized to involve habituation to both physiological pain and the fear of death and bodily harm and the habituation process is posited to unfold in response to repeated encounters with painful and/or provocative events. In this sense, an individual is thought to develop the ability to enact lethal self-harm as a result of life experiences that change his or her relationship to pain and the fears associated with self-inflicted bodily harm. The above mentioned findings related to distress tolerance and the IPTS constructs appear to indicate that low levels of distress tolerance may increase vulnerability for numerous dysregulated behaviors and suicidal desire. At the same time, however, the inability to persist during aversive experiential states may actually serve as an obstacle in the acquisition of the capacity for enacting lethal self-harm, as individuals with low distress tolerance may be more inclined to opt for behaviors that offer immediate relief from negative affect without the likely increase in fear and physiological discomfort associated with suicidal behavior in general and serious or lethal suicidal behavior in particular.

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Within the distress tolerance literature, a line of research has emerged in recent years indicating that, although self-report distress tolerance measures are typically significantly associated with one another and behavioral measures of distress tolerance are typically significantly associated with one another, self-report and behavioral measures generally do not demonstrate significant relationships with one another (e.g., Anestis et al., 2011b; Bernstein et al., in press; McHugh et al., 2011). Unfortunately, this renders comparisons of findings across distress tolerance studies somewhat difficult and increases the need for replications across forms of measurement. As such, the purpose of this study was to replicate and expand upon the findings of Anestis et al. (2011a), who found that self-reported distress tolerance was negatively associated with suicidal desire but positively associated with the acquired capability. To do this, we utilized a behavioral measure of distress tolerance in an effort to clarify the degree to which the findings of Anestis et al. (2011a) can be understood within the context of other empirical investigations. Along these lines, we hypothesized that low levels of behaviorally-indexed distress tolerance would be associated with greater levels of both thwarted belongingness and perceived burdensomeness whereas higher levels of behaviorally-indexed distress tolerance would be associated with greater levels of the acquired capability for suicide. To further expand upon prior findings and clarify the nature of the relationship between distress tolerance and the acquired capability relative to that of painful and provocative experiences (the proposed primary mechanism through which the capacity to enact lethal self-harm is posited to develop), we also examined a potential moderating relationship. Specifically, we hypothesized that the relationship between painful and provocative events and the acquired capability would increase in magnitude with increasing levels of behaviorally-indexed distress tolerance. Such findings would indicate that, although environmental experiences largely influence an individual's acquired capability, their impact on that capacity is stronger in individuals who are better able to persist while experiencing distress.

1. Method

1.1. Participants

283 undergraduates were recruited to take part in this study. 58.7% of the sample was female and participants ranged in age from 18 to 39 (mean = 19.34, standard deviation = 2.10). The ethnic composition of the sample was reflective of the undergraduate population, with 68.6% identifying as White, 13.1% as Hispanic or Latino, 12.0% as African American, 2.8% as Asian, and 3.5% as other. Data on levels of suicidal ideation and previous suicidal behavior in this sample have been previously reported (Anestis et al., 2011a).

1.2. Measures

1.2.1. Distress Tolerance Test (DTT; Nock and Mendes, 2008)

The DTT is a behavioral index of distress tolerance during which participants complete an alternative form of the Wisconsin Card Sort Test (WCST; Grant and Berg, 1948; Heaton et al., 1993). Participants are presented with a deck of 64 cards, each of which features a figure that varies by shape, color, and number. Participants are told to sort each card beneath one of four sample cards laid across the table in front of them; however, no instructions are given with respect to how the participant should determine where to place each card. The task administrator reads a scripted set of instructions informing the participant that he or she must sort the first 20 cards, but that they are free to quit the task at any time after that. No incentive is given to continue beyond 20 cards and levels of negative affect are measure just prior to the beginning of the task as well as just after the 20th card. Unlike the original WCST, there are no correct answers with respect to how the participant sorts each card. Instead, the first three sorts are said to be correct regardless of where the cards are placed, the next seven are said to be incorrect, the eleventh is said to be correct, and all subsequent sorts are said to be incorrect. Distress tolerance is measured by summing the number of cards the participant sorted, with a lower number of sorts indicative of lower distress tolerance. The task is thought to approximate the distress that motivates many dysregulated behaviors more so than other distress tolerance behavioral measures due to the interpersonal negative feedback. Prior research has indicated that individuals who sort fewer cards during the DTT are more likely to engage in NSSI and exhibit greater physiological reactivity in response to the task (Nock and Mendes, 2008). In this sample, 61.5% of individuals quit after the 20th sort and 10.0% of individuals persistent through the entire 64 card deck.

1.2.2. Painful and Provocative Events Scale (PPE; Gordon et al., unpublished manuscript)

The PPE is a 26-item self-report measure that assesses the number of times participants have experienced a range of painful and/or provocative experiences throughout their lifetime (e.g., *Have you participated in contact sports? Have you been a victim of physical abuse?*). Items utilize a Likert scale ranging from 1 (*never*) to 5 (*more than 20 times*). Prior research has supported the construct validity of the scale, reporting significant associations with scores on both the Impulsive Behavior Scale (Rosotto et al., 1998) and the Acquired Capability for Suicide Scale (Bender et al., 2011). The PPE was included as a covariate to ensure that elevations in the acquired capability are not purely accounted for by participants' life experiences. The coefficient alpha in this sample was .66, a moderate level of consistency that is reasonable to expect from a measure comprised of a list of disparate behavioral experiences.

1.2.3. Acquired Capability for Suicide Scale (ACSS; Bender et al., 2011)

The ACSS is a 25-item self-report measure that assesses an individual's capacity to enact lethal self-harm, which the IPTS theorizes to be comprised of heightened tolerance of physiological pain and a diminished fear of both death and bodily harm (e.g., *I am very much afraid to die* [reversed]). Items utilize a Likert scale ranging from 0 (*not at all like me*) to 4 (*very much like me*). The reliability and validity of the ACSS has been detailed across a number of prior studies (e.g., Van Orden et al., 2008). The coefficient alpha in this sample was .84.

1.2.4. Interpersonal Needs Questionnaire (INQ; Van Orden et al., 2008)

The INQ is a 25-item self-report questionnaire specifically designed to assess the two components of suicide desire proposed by the IPTS: thwarted belongingness and perceived burdensomeness. Items utilize a Likert scale with higher scores indicative of more severe suicidal desire. The construct validity of this scale has been detailed in prior publications (e.g., Joiner et al., 2009) and the coefficient alpha in this sample was .88.

2. Results

Correlations and descriptive data for the measures utilized in these analyses can be found in Table 1. Variable distributions were examined and all data were distributed normally. As such, no transformations were utilized. Due to the lack of significant zero-order associations between distress tolerance and both thwarted