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Research paper

An investigation of persistence through pain and distress as an amplifier of the relationship between suicidal ideation and suicidal behavior

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ABSTRACT

Recent research has emphasized the importance of examining factors that strengthen the association between suicidal ideation and suicidal behavior, thereby aiding in the transition from thought to action. Theoretical and empirical work has demonstrated that suicidal desire is more strongly associated with suicidal behavior among individuals better able to tolerate distressing sensations, consistent with the notion that suicidal behavior is difficult and aversive and requires a capability to overcome otherwise daunting obstacles. Participants were 100 adults, recruited from the community, in part based upon their prior history of suicidal behavior. Each participant took part in a behavioral task during which both emotional distress and physical pain were induced. Participants were told that persistence through the end of the task would result in the ability to opt out of all but five minutes of the remaining protocol, whereas early cessation of the task would result in the administration of the entire protocol. Results indicated the relationship between current suicidal thoughts and lifetime attempts was significant only at mean and high levels of task persistence. Our results provide novel behavioral support for the importance of persistence through pain and distress in suicidal behavior.

In recent years, there has been a movement within Suicidology to consider suicide risk within the context of an "ideation to action" framework (Klonsky and May, 2014). This movement stems from the well-known but poorly understood fact that the majority of individuals who think about suicide never attempt and the majority of those who attempt do not die by suicide (Goldsmith et al., 2002; Nock et al., 2008). As such, the emphasis has shifted to models that help clarify factors that increase the strength of the association between thinking about suicide and actually engaging in suicide attempts.

Theoretical frameworks such as the interpersonal psychological theory of suicidal behavior (IPTS: Joiner, 2005) and the Three-Step Theory of Suicide (3ST; Klonsky and May, 2015) argue that the primary factor that enhances the association between thought and action is a capability for suicide. These theorists argue that, without the capability-comprised of a heightened tolerance of physiological pain, a diminished fear of death and bodily harm, and access to and familiarity with lethal means – suicidal desire will not result in a suicide attempt. The rationale for the capability for suicide as a vital component of the association between thought and action is that suicide attempts are both emotionally and physically challenging. Emotionally, suicide attempts require an individual to overcome the drive for self-preservation and the fear that typically accompanies the possibility of impending death. Physically, suicide attempts require an individual overcome pain, discomfort, or at least the threat of one or both of those aversive sensations. In this sense, suicide attempts necessitate that individuals prioritize the pursuit of death over the escape from acute aversive affective and physiological states (Anestis et al., 2014a). Indeed, researchers have posited that this requirement helps explain recent data indicating that variables such as impulsivity and emotion dysregulation are strongly associated with suicidal ideation, but only weakly and indirectly associated with suicidal behavior (Anestis et al., 2014b; Law et al., 2015).

A number of studies have supported the importance of the capability for suicide in enhancing the association between suicidal desire and suicidal behavior (e.g., Anestis et al., 2015; Joiner, 2005), but these studies have largely relied upon self-report and interview data. Mounting evidence suggests that self-report and behavioral measures of constructs related to the ability to persist amidst emotional and physical distress (e.g., distress tolerance) do not correlate with one another (e.g., Bernstein et al., 2011) and, as such, it is unclear to what extent prior work has truly been able to

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capture certain aspects of the capability for suicide. Specifically, no prior work has examined the extent to which suicidal ideation is more strongly associated with suicidal behavior among individuals willing to persist amidst pain and distress in pursuit of an end.

To address this void in the literature, we designed an enhanced version of existing behavioral paradigms, in which we aimed to mirror an important aspect of the decisional balance involved in suicidal behavior. A sample of adults drawn from the community and recruited in part based upon their prior history of suicide attempts was invited into a laboratory setting. During the behavioral paradigm, the participants took part in a card-sorting based distress tolerance task while 90% of their baseline pain tolerance was continuously administered. Participants were told that persistence to the end of the task would allow them to opt out of all but 5 min of the remaining protocol, whereas quitting prior to the end would result in participation in the remaining 20 min. To our knowledge, no prior studies have combined persistence through physical pain and emotional distress in a single test, a vital hole in the literature given the role of distress and pain in the conceptualization of the capability for suicide.

We hypothesized that the relationship between current suicidal thoughts and lifetime suicide attempts would be moderated by task persistence, such that the relationship would increase in magnitude as persistence amidst pain and distress increased. Results consistent with our hypothesis would represent the first preliminary behavioral support for the role of capability in understanding vulnerability to suicidal ideation alone; as opposed to vulnerability to suicidal ideation along with suicidal behavior. Such results would also highlight an important component of the decisional balance involved in suicidal behavior that may distinguish it from similar behaviors (e.g. non-suicidal self-injury) often used to escape acute aversive sensations: the willingness push through pain and distress in pursuit of a long term end.

1. Method

1.1. Participants

Participants were 100 adults (76.0% female; $_{m}$age=23.63; age range: 18–60) recruited from the greater Hattiesburg, Mississippi area. Recruitment efforts included messages on listservs and message boards and fliers placed in public locations and health care facilities throughout the community. In an effort to recruit a greater number of individuals with prior suicide attempts, several recruitment materials specifically asked for individuals with at least one prior attempt. In total, 44.0% of participants identified as Black, 40.0% as White, 10.0% as Asian/Pacific Islander, and 6.0% as Other. The majority (62.0%) reported a total annual family income of $50,000 or less. Additionally, 14.0% of the sample identified as a sexual minority.

2. Measures

2.1. Self-report questionnaires

Suicidal ideation was assessed using the Depressive Symptom Index – Suicidality Subscale (DSI-SS; Metalsky and Joiner, 1997). The DSI-SS consists of four items assessing the extent to which participants are currently experiencing thoughts and urges related to suicide and the extent to which they have engaged in suicidal plans and preparations. Items are scored on a 0–3 scale, with higher scores representing greater levels of risk. The DSI-SS has previously exhibited strong psychometric properties (Joiner et al., 2002) and the alpha coefficient in this sample was .91.

2.2. Structured interview

Lifetime suicide attempts were assessed using the Lifetime Suicide Attempts Self-Injury Interview (L-SASI; Linehan and Comtois, 1996). The L-SASI assesses lifetime incidents of both non-suicidal self-injury and suicide attempts. For each self-injurious behavior, the L-SASI assesses the participant's intent to die (none, ambiguous, clear intent to die), type of medical attention received (if any), and level of lethality. Only behaviors involving clear or ambiguous intent to die were included in our variable representing lifetime suicide attempts.

2.3. Behavioral tasks

Physiological pain tolerance was assessed through the use of a Wagner FPIX 25 pressure algometer. The algometer was applied just below the knuckle on the bony portion of the second finger of the right hand on all participants. An initial pressure level of one pound of force was applied and this was increased by one pound every five seconds. The algometer was used at two separate points in the protocol: a baseline pain tolerance assessment and as a component of the experimental portion (described below). For the baseline pain tolerance task, the participant was told to say “pain” when the pressure was first experienced as pain. This constituted a measure of pain threshold. Once the participant said “pain,” the administrator ceased applying pressure and the level of force was recorded. After a 90s break, the algometer was reapplied and the participant was told to say “stop” when the pain was too severe to continue. This constituted a measure of pain tolerance. Once the participant said “stop,” the administrator ceased applying pressure and the level of force was recorded. This process was repeated five times with 90s intervals between applications for both threshold and tolerance and the average score across the five trials was used as an index of total threshold and tolerance. Participants were highly consistent in their endorsement of both threshold and tolerance, with alpha coefficients of .97 for both variables.

2.4. Behavioral task

To assess participants' willingness to persist through pain and distress, we developed an enhanced version of the Distress Tolerance Test (DTT; Nock and Mendes, 2008). The DTT is a behaviorally-based distress tolerance task adapted from the Wisconsin Card Sort Test (WCST; Grant and Berg, 1948). In this task, participants are presented with a deck of 64 cards, placed face down in a pile and featuring images that differ by shape, color, and number. Participants are told to sort each card by placing them beneath one of four sample cards laid across the table in front of them. No instructions are provided as to how the participant should sort the cards. Unlike the original WCST, in the DTT there are no actual correct methods for sorting. Instead, the first three sorts are said to be correct, the next seven are said to be incorrect, the eleventh is said to be correct, and all subsequent sorts are said to be incorrect. The only feedback provided by the administrator is the word “correct” or “incorrect.” In the original DTT, participants are given the option to quit the task after 20 sorts and distress tolerance is measured by counting the number of cards sorted prior to discontinuing the task. Prior research has demonstrated that the DTT induces negative affect and that, whereas sorting fewer cards is associated with physiological arousal and lifetime engagement in non-suicidal self-injury (Nock and Mendes, 2008), sorting more cards is associated with greater self-reported capability for suicide (Anestis and Joiner, 2012).

In our enhanced version of the DTT, 90% of the participant's baseline pain tolerance was applied continuously by a second member of the research team, beginning immediately after