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Nonsuicidal self-injury and disordered eating: Differences in acquired capability and suicide attempt severity

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ABSTRACT

Nonsuicidal self-injury (NSSI) and eating disorders are both strongly related to suicide behaviors, and both can be conceptualized as painful and provocative events that associate with acquired capability for suicide. Individuals who self-injure report greater acquired capability than those who do not engage in these behaviors, but results are mixed in eating disorder samples. Given that NSSI and disordered eating (DE) commonly co-occur, it is important to examine how acquired capability for suicide and suicide attempt severity may differ between individuals who engage in either, both, or neither of these behaviors. It was expected that individuals with both NSSI and DE would report the greatest acquired capability, assessed by fearlessness about death and fear about suicide, and suicide attempt severity, compared to NSSI only, DE only, and controls. In a sample of 1179 undergraduates, results indicated no differences on fearlessness about death, but the NSSI + DE group reported the lowest scores on fear of suicide and greatest suicide attempt severity compared to the other groups. Differences between fearlessness about death and fear about suicide are discussed, as well as the possible additive effect of engaging in both direct (NSSI) and indirect (DE) self-harm on fear about suicide and suicide risk.

1. Introduction

Suicide is a growing public health concern, particularly in 15–24 year olds, for which suicide is now the second leading cause of death (CDC, 2015). Suicidal behaviors have been linked to a multitude of maladaptive behaviors, including those involving self-inflicted bodily harm, both direct and indirect, such as nonsuicidal self-injury (NSSI) and disordered eating (Franko and Keel, 2006; Nock et al., 2006). NSSI has been identified as a robust predictor for suicide behavior across both cross-sectional and longitudinal studies, showing up to 2-fold increases in future suicide risk (Franklin et al., 2017; Ribeiro et al., 2016), and individuals with eating disorders have suicide rates that are up to 18 times that in the general population (Keshaviah et al., 2014). Furthermore, NSSI and disordered eating behavior commonly co-occur, with between 26 and 55% of individuals with eating disorders also reporting NSSI history (Claes et al., 2001), and 17% of individuals reporting NSSI history also reporting clinically significant levels of disordered eating (Taliaferro and Muehlenkamp, 2015).

One theoretical framework that is helpful in understanding the increase in suicide risk among those who engage in NSSI and/or disordered eating is the Interpersonal-Psychological Theory of Suicide (IPTS; Joiner, 2005). The IPTS posits that two constructs – perceived burdensomeness and thwarted belongingness – create and intensify suicide desire when experienced. A third construct – acquired capability for suicide – is thought to increase risk for suicide behaviors when it is present concurrently with desire for suicide. One crucial component of acquired capability is fearlessness about death, as it has been implicated in the transition from suicide desire to suicide intent. It is theorized that acquired capability develops as a process through which individuals habituate to physically painful and fearful experiences through repeated exposure to these experiences and/or activation of opponent processes (Van Orden et al., 2010). Both NSSI and disordered eating behaviors involve painful, self-inflicted damage to the body that could over time habituate an individual to pain and fear of death, thus resulting in an acquired capability to engage in a severe or lethal suicide attempt. However, relatively little research has examined how acquired capability may differ across individuals who engage in one or both of these behaviors.

1.2. NSSI, acquired capability, and suicide behaviors

NSSI has a high prevalence among adolescents and young adults, with lifetime rates of NSSI in college populations ranging between 20 and 31% (Klonsky and Glenn, 2009; Whitlock et al., 2006; Wilcox et al., 2012). NSSI encompasses a wide range of behaviors, the most common of which are cutting, hitting, and scratching (e.g., Glenn and Klonsky,

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2013; Muehlenkamp and Gutierrez, 2004). NSSI commonly co-occurs with suicidal thoughts and behaviors (e.g., Cloutier et al., 2010; Nock et al., 2006), and is a robust predictor of future suicidal behavior, even surpassing previous suicidal behaviors in some samples (Asarnow et al., 2011; Guan et al., 2012). Past research has hypothesized that the link between NSSI and suicidal behavior may be in part due to the increased habituation to pain seen in self-injurers (Franklin et al., 2011). Greater frequency of NSSI is associated with increased pain tolerance (Hooley et al., 2010), suggesting that engagement in NSSI may enable someone to fatally harm themselves as they become habituated to more painful and/or frequent forms of NSSI.

Although the connection between pain tolerance and acquired capability may partially account for the relationship between NSSI and suicidal behaviors, individuals must also experience a decreased fear of death in order to make a lethal or near-lethal suicide attempt (Van Orden et al., 2010). Given that NSSI is a common painful and provocative event that can increase acquired capability, it follows that NSSI engagement should decrease fear of pain, and may even distally decrease fear of death. In the only existing longitudinal study of NSSI and acquired capability, frequency of engagement in NSSI in the past year significantly predicted higher levels of acquired capability at a one-year follow-up. Moreover, this relationship was found to only be unidirectional, indicating that NSSI behavior directly affects acquired capability rather than individuals with greater acquired capability being more likely to engage in NSSI (Willoughby et al., 2015).

1.3. Eating disorders, acquired capability, and suicide behaviors

Disordered eating encompasses a wide range of maladaptive behaviors including self-starvation, food restriction, binging eating, and purging (Selby et al., 2010). Eating disorders have the highest mortality rates of any psychiatric disorder, with suicide being the second leading cause of death behind medical complications of the illness (Arcelus et al., 2011; Fedorwicz et al., 2007). As such, eating disorders may have a unique contribution to suicidal behavior. It is likely that each disordered eating behavior is uniquely painful, especially as certain disordered eating behaviors are sustained for longer periods of time (e.g., self-starvation as a relatively continuous behavior) than are those that comprise NSSI (usually discrete episodes). Recent research suggests that disordered eating behaviors, which are commonly associated with NSSI (e.g. Nock et al., 2006), also may serve as painful and provocative events that associate with acquired capability (Smith et al., 2013).

Although preliminary studies have found the IPTS to be partially supported within eating disorder populations (Pisetsky et al., 2017; Smith et al., 2016), results related to the fearlessness about death component of acquired capability have been mixed. In one study, overexercise predicted increased acquired capability scores in samples of college students at a 1-month follow-up (Smith et al., 2013; 2015). In another study, individuals with eating disorders reported comparable fearlessness about death scores compared to other general psychiatric patients and a non-clinical sample; however, fearlessness about death was associated with past suicide attempts in the eating disorder sample (Smith et al., 2016).

Regarding specific eating disorder symptoms, restrictive eating was initially hypothesized to be more strongly related to acquired capability than other eating disorder behaviors, as a possible explanation for the higher suicide rate in anorexia nervosa compared to bulimia nervosa (Joiner, 2005). Recent studies have been unable to confirm this hypothesis, however. In a sample of undergraduate students with and without recent fasting behavior, fearlessness about death scores were again comparable, and increased frequency of fasting had no association with fearlessness about death, but individuals in the fasting group were significantly more likely to have made a suicide attempt (Zuromski and Witte, 2015). In another study with a sample of eating disorder patients, both vomiting and laxative use were associated with fearlessness about death, while fasting and vomiting were associated with past suicide attempts (Witte et al., 2016). Lastly, in an eating disorder sample, fearlessness about death did not differ across those with suicide ideation versus suicide attempts, nor did it associate with suicide attempt history (Pisetsky et al., 2017).

The limited body of research concerning eating disorders and fearlessness about death indicates that certain types of eating disorder symptoms may be more strongly related to fearlessness about death than others, and individuals with eating disorders are more likely to have a history of suicide behaviors. It is puzzling then, that differences in fearlessness about death scores are not consistently seen across eating disorder groups or compared to controls. Fearlessness about death does not seem to uniquely account for the increased suicide risk commonly seen in eating disorder populations. One explanation for this may be in the measurement of acquired capability itself, specifically the fearlessness about death component. It is possible that different results could emerge with a similar, but slightly different assessment of fearlessness about death. Validation studies of the Acquired Capability Scale for Suicide (ACSS; Van Orden et al., 2008) and the revised 7-item Fearlessness About Death scale (ACSS-FAD; Ribeiro et al., 2015) report significant negative correlations with the Fear of Suicide subscale from the Reasons for Living Inventory (RFL; Linehan et al., 1983). While the content of these scales is similar, the ACSS-FAD's items specifically assess fear of death, while the Fear of Suicide subscale's items specifically assess fear of suicide. No known studies have yet explored potential differences in how these scales relate to suicide risk.

1.4. NSSI, disordered eating, and acquired capability

Epidemiological studies have found NSSI rates within eating disorder populations to be nearly twice that within other psychiatric conditions (Favaro and Santonastaso, 2000). Similarly, about 17% of individuals with NSSI report clinically significant eating disorder symptoms (Taliaferro and Muehlenkamp, 2015). Despite existing research examining the overlap of NSSI and eating disorders, no known studies have directly examined differences in acquired capability and suicidal behavior across these individual and comorbid groups. The comorbid group reports rates of suicidal behaviors higher than either diagnostic group alone (Kostro et al., 2014; Ross et al., 2009). Furthermore, epidemiological studies of suicidal behavior have found that individuals with two or more psychological diagnoses, regardless of type, report elevated odds of engaging in suicidal behavior (odds ratio [OR] = 6.8 for two diagnoses and up to 29.0 for six or more) as compared to those individuals with a single diagnosis (OR = 3.7; Harris and Barraclough, 1997; Nock et al., 2010).

In conclusion, individuals that regularly engage in NSSI have shown greater levels of acquired capability and suicidal behavior than those who have no history of NSSI, and it is hypothesized that individuals with disordered eating behavior also have increased levels of acquired capability, but these differences may not be seen on measures of fearlessness about death. It is important that these gaps in the literature are filled, as this information would allow for both researchers and clinicians to better understand and determine the risk for suicide associated with these behaviors, particularly if suicide risk is increased when both behaviors are present. Additionally, examining suicidality within the comorbid group in contrast to each singular behavior, as well as comparisons to individuals with neither behavior, may help to determine how each behavior differentially contributes to suicide risk. The present study seeks to fill this void by examining suicide attempt severity, one component of acquired capability (fearlessness about death) and the proposed component, fear of suicide, across four groups: history of NSSI and no clinically significant disordered eating (NSSI only), history of clinically significant disordered eating but no NSSI (disordered eating only), history of both NSSI and clinically significant disordered eating (NSSI + disordered eating), and no history of NSSI or clinically significant disordered eating (control).

It was hypothesized that the comorbid group would exhibit the