5-2017

Symptoms of Anxiety and Depression and Suicidal Behavior in College Students: Conditional Indirect Effects of Non-Suicidal Self-Injury and Self-Compassion

Andrea R. Kaniuka
East Tennessee State University

Symptoms of Anxiety and Depression and Suicidal Behavior in College Students: Conditional

Indirect Effects of Non-Suicidal Self-Injury and Self-Compassion

_____

A thesis

presented to

the faculty of the Department of Psychology

East Tennessee State University

_____

In partial fulfillment

of the requirements for the degree

Master of Arts in Psychology, Clinical Psychology concentration

_____

by

Andrea Rose Kaniuka

May 2017

_____

Jameson K. Hirsch, Ph.D., Chair

Jon R.Webb, Ph.D.

Matthew T. McBee, Ph.D.

Keywords: Suicide; Non-Suicidal Self-Injury; Depression; Anxiety; Self-Compassion; College

Students

ABSTRACT

Symptoms of Anxiety and Depression and Suicidal Behavior in College Students: Conditional

Indirect Effects of Non-Suicidal Self-Injury and Self-Compassion

by

Andrea Rose Kaniuka

Young adults of college age are at particular risk for psychopathology, non-suicidal self-injury

(NSSI) and consequent suicidal behavior, perhaps in a continuum of increasing severity.

However, not all persons who experience psychopathological symptoms, or who self-harm, go

on to engage in suicidal behavior, perhaps due to protective factors such as self-compassion that

buffer this progression. We examined the mediating effect of NSSI on the relation between

anxiety/depressive symptoms and suicide risk, and the moderating role of self-compassion on

these linkages. Our collegiate sample (N=338) completed: Beck Depression Inventory, Beck

Anxiety Inventory, Self-Harm Inventory, Suicidal Behavior Questionnaire-Revised, and the Self-

Compassion Scale. Students with greater psychopathology reported more engagement in NSSI

and, consequently, more suicide risk; self-compassion weakened the psychopathology-NSSI

linkage. Therapeutically addressing risk factors for suicidal behavior (e.g., psychopathology,

NSSI), and promoting self-compassion, may halt progression from symptomology to self-harm,

thereby ultimately reducing suicide risk in college students.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Suicide represents a widespread mental health concern, with suicide rates continuing to rise across most age groups in the United States, despite prevention and awareness initiatives (Xu, Kochanek, Murphy, & Arias, 2014). Over 41,000 individuals in the U.S. die by suicide each year, and estimated engagement in suicidal behavior, which includes suicidal ideation and suicide attempts, greatly outnumbers the rate of death by suicide; for instance, over 800,000 individuals were admitted to the hospital for suicide attempts in 2013 (Centers for Disease Control and Prevention [CDC], 2015). Despite its public health significance, suicide remains difficult to predict; however, the identification of risk and protective factors may inform the development of targeted prevention and intervention efforts.

Common risk factors for suicide and suicide-related behavior include demographic characteristics, such as age and sex, and psychopathology, such as symptoms of depression and anxiety, among other contributors (Barrios, Everett, Simon, & Brener, 2000; Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005; Nepon, Belik, Bolton, & Sareen, 2010). As well, non-suicidal self-injury (NSSI), or deliberate self-harm (Kerr, Muehlenkamp, & Turner, 2010), which differs from suicide due to a lack of lethal intent, is associated with increased likelihood of engaging in suicidal behavior over time (Andover, Morris, Wren, & Bruzzese, 2012; Nock & Favazza, 2009). In fact, NSSI, which is more prevalent than suicide, is often referred to as a "gateway" to suicide (Whitlock et al., 2012) and, as suggested by a recent meta-analysis, is predictive of future suicidal behavior; however, although a risk factor, not all individuals who engage in NSSI go on to engage in suicide-related behaviors (Muehlenkamp & Gutierrez, 2004; Whitlock & Knox, 2007).

What is less established, however, are the factors differentiating those who go on to engage in suicidal behavior from those who do not (Hamza, Stewart, & Willoughby, 2012). Not all individuals who experience symptoms of anxiety or depression, or who engage in self-harm, also engage in suicide-related behavior, perhaps due to individual-level protective factors that might buffer against suicide risk. One such protective factor is self-compassion, which is encompasses the characteristics of mindfulness, common humanity, and self-kindness (Neff, 2003), and which is beneficially related to overall psychological health (Neff, Kirkpatrick, & Rude, 2007), including lower levels of anxiety and depression (Neff & McGehee, 2010). Less research exists, however, regarding the association between self-compassion and harm-related outcomes such as NSSI and suicide-related behavior (e.g., Van Vliet & Kalnins, 2011), but preliminary evidence suggests that self-compassion may serve as a buffer against such poor outcomes (Bryan, Graham, & Roberge, 2015; Tesh, Learman, & Pulliam, 2013).

Further, no published research has examined a comprehensive model of suicide risk that attempts to explain the progression from symptoms of psychopathology to NSSI to suicide-related behavior, accounting for protective factors that might ameliorate such effects. As such, in the current study, we examined the associations between symptoms of depression and anxiety and suicide-related behavior, and the potential mediating role of non-suicidal self-injury. In addition, we examine the potential buffering effect of self-compassion, as a hypothesized moderator of these associations. In the following sections, we discuss the epidemiology and etiology of suicide and suicide-related behavior, including risk factors (e.g., anxiety, depression, NSSI) and protective factors (e.g., self-compassion) that might contribute to, or deter against, suicide-related behavior.

Prevalence of Suicide and Suicide-Related Behavior

Over 800,000 individuals die by suicide worldwide each year, making it the 15th leading cause of death across age groups and the 2nd leading cause of death among individuals 15-29 years old (World Health Organization [WHO], 2014). In the United States, suicide is the 10th leading cause of death and the 2nd leading cause of death in young adults aged 15 to 24 years old, with an individual dying by suicide every 13 minutes (CDC, 2015). Suicide rates continue to rise, both nationally and globally (WHO, 2015; Xu et al., 2014); however, these rates of suicide may be underestimated, reported as accidents or homicides, given the social stigma often surrounding suicide (Timmermans, 2005).

Even more common than death by suicide is suicide-related behavior, including suicidal ideation and suicide attempts, and it is estimated that, in the United States, there are as many as 25 suicide attempts for each death by suicide (Crosby, Han, Ortega, Parks, & Gfroerer, 2011). Prevalence of suicide attempts worldwide is 0.4%, or approximately 20 attempts for every death by suicide (WHO, 2015). Terminologically, suicide-related behavior (Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007) encompasses a continuum, ranging from suicidal ideation, or thoughts of suicide, to planning for suicide and, last, suicide attempts and death by suicide (Kachur, Potter, Powell, & Rosenberg, 1995). Suicidal ideation is defined as thoughts about killing oneself (e.g., "I wish I were dead"), and can include thoughts about a plan for suicide (i.e., the means one would use). A suicide attempt is defined as intentional self-inflicted injury performed to result in death, which differs from a death by suicide in that the individual does not end their life, as an attempt may or may not result in injury (Kazdin, 2000; Nock & Kessler, 2006). These behaviors decrease in prevalence as their severity increases, as 3.7% of U.S. adults report ideation, 1.0% report a plan for suicide, .5% endorse a history of past suicide attempt(s),

and .01% die by suicide annually. These rates equate to 8.3 million adults experiencing suicidal thoughts, 2.2 million adults making a plan for suicide, and 1 million adults attempting suicide, in the past year (CDC, 2015; Crosby et al., 2011).

Demographic, socioeconomic, and environmental factors can independently, and in conjunction with one another, affect risk for suicide-related behavior and death by suicide. To begin, there are sex, ethnicity, and sexual orientation-related differences in rates of suicide-related behavior and death by suicide. Females are three times as likely as males to attempt suicide, whereas males are four times as likely to die by suicide as females (Canetto & Sakinofsky, 1998). Native Americans and Whites in the U.S. die by suicide more frequently than other ethnic groups (Goldston, Molock, Whitbeck, Murakami, Zayas, & Nagayama Hall, 2008), and, LGBT individuals are at greater risk for suicidal outcomes compared to non-LGBT persons (King et al., 2008).

Young adults of college age, and who are attending college, may be at particular risk for suicide-related behavior (Barrios et al., 2000), possibly due to the stressors unique to this age and environment, such as interpersonal difficulties, academic pressures, and the transition to the college setting (Hirsch & Ellis, 1996; Hurst, Baranik, & Daniel, 2013). Suicidal ideation within the past twelve months is reported by 6% of undergraduate students (Drum, Brownson, Burton, Denmark, & Smith, 2009), compared to 3.7% of the general adult population (Crosby et al., 2011). Beyond ideation, 92% of students who report suicidal ideation in the past year also report a plan for suicide (Drum et al., 2009), a higher rate compared to the adult U.S. population (1%) (Crosby et al., 2011). It must be acknowledged that some research suggests that college students engage in less suicidal behavior than same-age, non-collegiate counterparts, perhaps due to self-coping and availability of campus-based resources (Arria, O'Grady, Caldeira, Vincent, Wilcox,

& Wish, 2009). Despite this, there are approximately 1,100 college student deaths by suicide every year, although this number may be inaccurate as underreporting of suicides is of concern among college campuses, with between 25-30% of suicides potentially mislabeled as accidental deaths (Schwartz, 1990).

In sum, rates of suicide-related behavior and death by suicide are rising nationally and globally, and young adults of college age are particularly vulnerable to suicide risk. Given its low base rate, it is difficult to predict suicide; however, suicidal ideation and attempts occur with greater frequency and are easier to target with interventions (Christensen et al., 2014). The success of clinical interventions rests on the identification of pertinent risk and protective factors and an understanding of how they work together.

Etiological Origins of Suicide-Related Behavior and Death by Suicide

Death by suicide and suicide-related behavior are multi-faceted biopsychosocial phenomena, and numerous theoretical propositions exist suggesting that suicide-related behavior derives from some combination of diatheses (i.e., genetic; childhood abuse) that contribute to vulnerability, maladaptive cognitive-emotional functioning, and interpersonal dysfunction (Joiner, 2005; Shneidman, 1993; van Heeringen, 2003). Yet, suicidal behavior remains difficult to predict, with risk and protective factors conceptualized as either fixed, variable, distal or proximal in nature (Berman, Jobes, & Silverman, 2006).

Fixed Risk Factors for Suicide-Related Behavior

Fixed factors are those that are stable and unchangeable, meaning they cannot be targeted via direct intervention, and include demographic factors such as race and sex, and predispositions such as temperament and genetic factors (Berman et al., 2006). For instance, differences exist between males and females with regard to suicide attempts and death by suicide

(Bilsker & White, 2011; Callanan & Davis, 2012; Hawton, 2000); in 2014, men died by suicide at a rate of 20.7 per 100,000 compared to women, who died by suicide by a rate of 5.8 per 100,000. Of the 40,000 deaths by suicide in 2014, in the United States, 77.4% were males and 22.6% were females (CDC, 2015). Sex differences in rates of suicide deaths may be due, in part, to suicide methodology, as women are more likely to select less lethal means of suicide, such as overdose, compared to men, who more often select firearms (Callanan & Davis, 2012). Men are also more likely to manifest impulsive or aggressive personality traits than women, which may contribute to suicide risk (Turecki, 2005). Males are also less likely to engage in help-seeking behaviors compared to their female counterparts (Luoma, Martin, & Pearson, 2002); for example, among a community sample, females who died by suicide were twice as likely to have sought mental health services over their lifetime compared to their male counterparts (Kung, Pearson, & Liu, 2003).

In terms of race and ethnicity, suicidal ideation is most prevalent in individuals who identify as multiracial, with White, Native American/American Indian and Native Hawaiian persons also at elevated risk; Blacks, Asian Americans, and Hispanics report the lowest percentage of suicidal thoughts (Perez-Rodriguez, Baca-Garcia, Oquendo, & Blanco, 2008). When considering intersectionality of identity, white males are most at risk, accounting for 70% of all suicides in the United States (Bilsker & White, 2011). The increased risk for suicide among white males may be due to more limited social support networks and financial strain, as examples (Bilsker & White, 2011). Possible explanations for discrepant rates of suicide-related behavior and suicide deaths across race/ethnic groups, beyond the increased risk among white males, include variance in cultural attitudes toward suicide, disparities in suicide awareness and knowledge, varying impact of psychosocial risk factors and differential access to resources

12

(Durant, Mercy, Kresnow, Simon, Potter, & Hammond, 2006; Goldston et al., 2008; Ramchand & Roth, 2014).

Personality traits may also be conceptualized as fixed factors impacting suicide, given their dispositional quality and stability over time (Berman et al., 2006), although some evidence suggests that such characteristics (i.e., big-five personality traits) may change throughout the lifespan and, in some instances, can be addressed therapeutically (Klimstra, Bleidorn, Asendorph, van Aken, & Denissen, 2013; Specht, Egloff, & Schmukle, 2011). Examples of personality factors considered risk factors for suicide-related behavior include the presence of neuroticism, negative affectivity and introversion, as well as low levels of extraversion and self-esteem (Bluml et al., 2013; Brezo, Paris, & Turecki, 2006; Kerby, 2003; Lakey, Hirsch, Nelson, & Nsamenang, 2014; Roy, 1998; Yen et al., 2009). Individuals classified as internalizing or emotionally-dysregulated, or who exhibit dependent or hostile characteristics, are also at greater risk for suicide attempts (Ortigo, Westen, & Bradley, 2009).

Regarding biological and genetic risk factors, suicidal outcomes are routinely linked to serotonin deficits and its cascade of effects including violent behavior, aggression, and impulsivity (Mann, 2003; Seo, Patrick, & Kennealy, 2008). Brain structure and neurobiology also predispose certain individuals for death by suicide and suicide-related behavior. The frontal lobe, particularly the prefrontal cortex, is heavily implicated in suicide-related behavior (Raust et al., 2007; van Heeringen, 2003). Research comparing attempters to non-attempters also indicates higher brain activity in the orbitofrontal cortex, which may serve as a marker of greater sensitivity to disapproval and a tendency to filter out positive stimuli (Jollant et al., 2008). Finally, genetic factors appear to impact risk for suicide. In a meta-analysis of family and twin studies conducted by Voracek and Loibl (2007), both suicide-related behavior (55%) and death

by suicide (21-50%) exhibited heritability. Preliminary research also suggests that specific blood biomarkers (i.e., SAT1) may differentiate individuals who attempt suicide from those who do not (Le-Niculescu et al., 2013); however, these findings are preliminary, included a limited sample, and examined suicidal attempts, not ideation.

Variable Risk Factors for Suicide-Related Behavior

In contrast to fixed factors, variable factors are those which change over time and/or which may be more amenable to change via intervention and prevention, such as age and symptoms of psychopathology, among others (Berman et al., 2006). To begin, risk for suicide varies with age, given specific life events and stressors unique to those age groups (Beautrais, 2003; Maris, 2002). For young adults, overall, suicide rates have risen for nearly a decade and young adults in college, despite being at lower risk for death by suicide compared to other age groups, are at heightened risk for suicidal ideation (Drum et al., 2009). Risk factors for suicidal behavior in college students often stem from transitional stressors related to the collegiate experience, including changes to social support networks, parent-child conflict, and academic and financial pressures (Arria et al., 2009; Lamis & Jahn, 2013; Thompson, Eggert, & Herting, 2000). However, the decreased risk for suicide attempt and death by suicide in this population may be due, in part, to reduced access to means, such as firearms, and enhanced access to services (e.g., free sessions at counseling center) on college campuses (Miller & Hemenway, 2002). Across all age groups, individuals 45 to 64 years old, and 85 and older, are at the highest risk for suicide when compared to other age groups. Risk in middle age is due, perhaps, to economic and financial strain, and risk among older adults is often tied to the impact of disease, deteriorating health, and diminishing social support networks (Bilsker & White, 2011; Garand, Mitchell, Dietrick, Hijawi, & Pan, 2006).

With regard to psychopathology as a variable factor in suicide risk, it is important to note that approximately 95% of individuals who die by suicide have a diagnosable psychiatric disorder, typically depression but also including bipolar disorder, substance use disorders, eating disorders, and stress disorders, as examples (Busch, Fawcett, & Jacobs, 2003; Cavanagh, Carson, Sharpe, & Lawrie, 2003). Psychopathology represents a variable factor in that symptoms are amenable to treatment and, by decreasing symptoms of psychological disorders, risk for suicidal outcomes may be decreased (Bergmans & Links, 2009; Hoertel et al., 2015). Yet, there is variability within mental health, considering the ebb and flow of symptom presence and severity, and comorbidity of symptoms from differing disorders. Thus, it is important to acknowledge the impact of sub-clinical psychopathology, such as symptoms of depression and anxiety, as opposed to formal diagnoses, as sub-clinical symptoms are more prevalent than diagnoses and often still exhibit a severe prognostic trajectory (Brown & Schiraldi, 2003; Cuijpers & Smit, 2008; Ng, Yan Chan, & Schlaghecken, 2012).

Subthreshold symptoms of generalized anxiety disorder have twice the prevalence of a diagnosis of GAD (Haller, Cramer, Lauche, Gass, & Dobos, 2014), and subclinical levels of anxiety and depression are related to cognitive-emotional disruption, including negative attention bias, impaired behavioral inhibition, and memory impairments (Kizilbash, Vanderploeg, & Curtiss, 2002; Ng et al., 2012). If left untreated, subclinical symptoms have the potential to develop into more severe forms of psychopathology; for instance, individuals with subclinical depression are at four times greater risk of developing a major depressive disorder within twelve months compared to individuals without depressive symptoms (Horwath, Johnson, Klerman, & Weissman, 1994). Of importance to the current study, college students with subclinical depressive symptoms are at an elevated risk for suicidal ideation compared to students without

depressive symptoms, although at lower risk compared to peers with formal diagnoses and more symptoms (Cukrowicz et al., 2011).

Symptoms of Depression as a Risk Factor

Among the disorders most comorbid with suicide-related behavior, depression is typified by symptoms such as negative mood, diminished interest and pleasure in daily activities, feelings of worthlessness, recurrent thoughts of death, and suicidal ideation and attempts (APA, 2013; Arsenault-Lapierre, Kim, & Turecki, 2004). Mood disorders, including major depression and bipolar disorder, are present in approximately 60% of suicide deaths (Bertolote, Fleischmann, De Leo, & Wasserman, 2003). Given that the lifetime prevalence of mood disorders (e.g., major depression, dysthymia) in the United States is approximately 28.8%, with 16.6% of individuals meeting the criteria for major depressive disorder during their lifetime (Kessler et al., 2005), there may be a large segment of the population at risk for suicide-related behavior. Among U.S. regional studies of college students, 33% of undergraduates reported mild to severe depressive symptoms over the past week (Beiter, 2015). Nationally, in a meta-analysis on college student depression, including studies from 1990 to 2010, the mean prevalence of depression among college students was 30.6%, a rate higher than that among individuals in the general population (16.6%) (Ibrahim, Kelly, Adams, & Glazebrook, 2013).

Depressive symptoms and suicide may share underlying biological (e.g., neurotransmitters) and environmental (e.g., abuse) causal mechanisms (Mann et al., 2000), further highlighting their strong association. For both depressive symptoms and suicide-related behavior, biological factors, such as neurotransmitter imbalance, are implicated. According to the monoamine hypothesis of suicide and depression, three monoamine neurotransmitters (dopamine, norepinephrine, and serotonin) are related to depressive symptoms (Nutt, 2008), and

are also involved in suicide-related behavior (Ryding, Lindstrom, & Traskman-Bendz, 2008).

Differences in brain structure are also related to depression and suicide-related behavior; reduced

brain matter and activity in the prefrontal cortex, which regulates mood, may contribute to such

poor outcomes (Drevets, 2000). Genetic and familial factors are also linked to increased risk for

depression and suicide, with twin studies suggesting heritability of 40 to 50% and family studies

documenting 2-3 times greater risk for major depression among first-degree relatives (Lohoff,

2010). Similarly, twin studies on the genetics of suicide demonstrate a heritability of 30-55% for

suicide-related behavior (Voracek & Loibi, 2007).

Environmentally, risk factors for depressive symptoms include, among others, stressful

life events, interpersonal dysfunction, and childhood sexual abuse (Cheasty, Clare, & Collins,

1998; Hammen, 2003; Kendler, Karkowski, & Prescott, 1999), factors also related to suicidal

behavior. In one example, a longitudinal study of individuals with depression, 27% of the

sample attempted suicide during the ten-year study period, and factors which were predictive of

future suicide attempt included poor maternal attachment and thwarted social adjustment (May,

Klonsky, & Klein, 2012). Stressful life events are also highly associated with risk for major

depressive disorder; for example, in samples of Caucasian female twins, stressful life events

including assault, divorce, financial problems, illness, job loss, legal issues, disruptions in social

support, and work difficulties contributed to the onset of major depressive disorder (Kendler et

al., 1999). Among a sample of Chinese women, stressful life events including rape, physical

abuse, and serious neglect were highly associated with risk for major depressive disorder (Tao et

al., 2011) and, likewise, in university students and adolescents, number of stressful life events is

related severity of symptoms of depression (Sokratous, Merkouris, Middleton, & Karanikola,

2013; Williamson, Birmaher, Anderson, Al-Shabbout, & Ryan, 1995).

Symptoms of Anxiety as a Risk Factor

Beyond depressive symptoms, anxiety disorders are also associated with suicidal ideation and suicide attempts (Sareen et al., 2005). Characterized by an excessive fear response to a real threat, worry related to future threats, and consistent perceptions of dread and apprehension, including agitation (APA, 2013), anxiety disorders are the most common psychiatric disorders in the general population, with a lifetime prevalence of 29% (Kessler et al., 2005). As well, anxiety symptoms are the most common mental health concern within the college population (Mistler, Reetz, Krylowicz, & Barr, 2012), with approximately 40% of students reporting mild to severe anxiety symptoms (Beiter et al., 2015). Of concern, given our current collegiate sample, adolescents and young adults diagnosed with anxiety are 8 times more likely to experience suicidal ideation and 6 times as likely to attempt suicide, than individuals without anxiety disorders (Boden, Fergusson, & Horwood, 2007). In the general population, approximately 11-14% of individuals in the general population with an anxiety disorder report a lifetime history of suicidal ideation, and 3-5% report previous suicide attempts (Sareen et al., 2005); overall, up to 70% of individuals who attempt suicide meet the criteria for an anxiety disorder diagnosis, although they may remain undiagnosed (Nepon et al., 2010).

Similar to the association between depression and suicide-related behavior, anxiety and suicide-related behavior also have some biological and environmental etiological commonalities that may partially explain their comorbidity. In both anxiety and suicide, neurotransmitter imbalances are contributory mechanisms, as serotonin, dopamine, and gamma-aminobutyric acid (GABA) are involved in anxiety modulation, with an imbalance of these chemicals resulting in anxiety symptoms (Nikolaus, Antke, Beu, & Muller, 2010). As with suicide, anxiety has a genetic component. Among individuals with a first-degree relative with an anxiety disorder,

18

three to five times greater risk for anxiety disorders exists. Genetic transmission of anxiety disorders is well-documented in twin studies, which indicate that phobic disorder, generalized anxiety disorder, and panic disorder have a heritability of 35%, 32%, and 44%, respectively (Merikangas & Pine, 2002). Rates of suicide are also elevated among individuals whose family history includes death by suicide and attempted suicide (Brent & Mann, 2005). Adolescents and young adults who attempt suicide are more than twice as likely to have a family member who has attempted suicide, compared to individuals without a family history of suicide-related behavior (Fergusson, Beautrais, & Horwood, 2003). Additionally, male suicide attempters with a family history of death by suicide are at ten times greater risk for suicide, compared to men without a family history of suicide attempt or death by suicide (Kim et al., 2005).

In terms of environmental elements contributing to both anxiety and suicide-related behavior, stressful life events and interpersonal difficulties, among other risk factors, contribute to their development and maintenance. Traumatic events including childhood abuse, sexual victimization, and exposure to threatening stimuli can trigger anxiety symptoms (Leskin & Sheikh, 2002; MacMillan et al., 2001), and are risk factors for suicide. Specific populations may be at particular risk for the experience of heightened anxiety symptoms and, therefore, for risk for suicidal behavior. For young adults, social and interpersonal disruptions often contribute to anxiety symptoms, including those of generalized anxiety disorder (Eng & Heimberg, 2006; Kadison & DiGeronimo, 2004) and, for college students, academic and parental pressures may be key contributors to both anxiety and suicide risk.

Distal Risk Factors for Suicide-Related Behavior

Whereas variable (i.e., psychopathology) and fixed factors (i.e., sex and race) differ in their stability over time and responsiveness to intervention, distal and proximal factors differ in

their duration and immediacy. Distal elements refer to those factors which are long-standing with a long-term impact, such as past emotional experiences and suicide history, and can be conceptualized as developmental vulnerabilities for suicide-related behavior (Berman et al., 2006). As examples, childhood experiences such as neglect and physical and sexual abuse are established risk factors for suicide among inpatient psychiatric samples, individuals who died by suicide, and persons who have a past history of suicide attempts (Beautrais, 2001; Sfoggia, Pacheco, & Grassi-Oliveira, 2008). Similarly, among samples with alcohol use disorders, factors such as a history of emotional, physical, and sexual abuse, as well as previous emotional and physical neglect, are significantly related to suicide attempts (Roy, 2003).

History of suicide attempts, which is variable in frequency and severity across persons, is one of the strongest predictors of future engagement in suicidal behavior (Beautrais, 2002; Horwitz, Czyz, & King, 2015). As an example, 20% of individuals who die by suicide have attempted suicide in the past, and individuals who have a prior history of suicide attempt are at 38 times greater risk for death by suicide compared to individuals with no suicide history (Harris & Barraclough, 1997). Among adolescents and young adults in psychiatric emergency settings, lifetime history of suicide attempt and non-suicidal self-injury, were predictive of future suicide attempt (Horwitz et al., 2015).

Proximal Risk Factors for Suicide-Related Behavior

In contrast to distal factors, proximal factors, often conceptualized as triggers, are more-recent precipitants of suicide-related behavior. These factors often overlap with distal factors (i.e., relationship stress), but differ in their immediacy and can include factors such as perceived stress, recent interpersonal issues, and access to lethal means (Berman et al., 2006). Recent stressful life events, including trauma, death of a loved one, financial difficulties, job loss, and

relationship dissolution are all predictive of suicide (Duberstein, Conwell, Conner, Eberly, Evinger & Caine, 2004). Interpersonal stress within the past year is predictive of suicide attempt in inpatient samples (Weyrauch, Roy-Byrne, Katon, & Wilson, 2001), and among adolescent inpatients, stressful life events have an association with suicide-related behavior (Adams, Overholser, & Spirito, 1994). For college students, who are the focus of the current study, factors such as peer conflict and academic failure, contribute to risk for suicide-related behavior (Tang, Xue, & Qin, 2015). Interestingly, suicidal ideation, itself, can be a proximal risk factor for suicide attempts and death by suicide. One third of individuals who experience suicidal ideation go on to make a plan for, and attempt, suicide and, further, most individuals who transition from suicidal ideation to suicide attempt do so within twelve months of the start of their suicidal ideation (Nock, et al., 2008), which provides some broad temporal proximity of risk.

In addition to the aforementioned discrete categorization of risk factors into distal versus proximal, and fixed versus variable, groupings, there are also risk factors that are more pervasive, and which span across numerous of these dimensions (Moscicki, 2001). For instance, a risk factor may be both fixed and distal, such as a history of endogenous depression or anxiety, or may be variable and proximal, such as current non-suicidal self-injury. Theoretical models, in some cases, serve to rectify these discrete categorizations by contributing to a conceptualization of suicide that takes into consideration the impact of various risk factors for suicide-related behavior, across dimensions of risk.

Theoretical Underpinnings of Suicide-Related Behavior and Death by Suicide

There are numerous, comprehensive theories which posit that suicide-related behavior stems from diatheses (i.e., genetic; childhood abuse) that contribute to vulnerability to suicidal

21

behavior, including via maladaptive cognitive-emotional functioning and interpersonal

dysfunction (Beck et al., 1990; Joiner, 2005; Shneidman, 1993; van Heeringen, 2003). As but

one example, a stress-diathesis model of suicide, which considers the impact of both distal and

proximal factors, suggests that past, or even unalterable, risk factors create an underlying

susceptibility to psychopathology and suicide-related behavior (van Heeringen, 2003). Further,

triggering events, or proximal factors, may interact with this underlying predisposition, making

individuals more likely to engage in suicide-related behavior.

Mann and colleagues (1999) proposed a widely-accepted stress-diathesis model that

forms the basis of much suicide research, and which focuses on the impact of neurobiology and

psychopathology on suicide-related behavior. This model posits that psychosocial distress (i.e.,

job loss, dissolution of relationships) and psychiatric disorders (i.e., depression) are the stress

components of the model whereas diatheses are long-standing effects of adverse genetics or

experiences, such as childhood abuse (Mann & Haghgighi, 2010). Additional models implicate

neural activity and cognitive processes as diatheses, or vulnerabilities, to suicide-related

behavior. Individuals who attempt suicide exhibit neural circuitry abnormalities including lower

glucose uptake in the prefrontal cortex, as well as differences in the processing of negative

emotions, as evidenced by greater activity in the right lateral orbitofrontal cortex and decreased

activity in the right superior frontal gyrus (Jollant et al., 2008).

Beyond a stress-diathesis model, researchers have proposed other theoretical explanations

for suicide and suicide-related behavior. Shneidman's theory of suicide (1993) asserts that

psychache, or subjectively intense and unrelenting psychological and emotional pain, is a

primary risk factor contributing to suicide, and may be a stronger predictor of suicide-related

behavior than hopelessness (Pompili, Lester, Leenaars, Tatarelli, & Girardi, 2008). Other

22

theories of suicide that are based in cognitive-behavioral theory posit that hopelessness (i.e.,

negative feelings regarding the future, decreased motivation, and lowered expectations), as a

cognitive-emotional component, coupled with previous suicidal behavior, as a behavioral

component, are predictive of future engagement in suicide-related behavior (Beck, 1990; Beck,

1996).

Rudd's (2000) cognitive-behavioral theory of suicidal behavior also incorporates

hopelessness as a risk factor for suicidal outcomes, suggesting the presence of a "suicidal mode"

whereby individuals with poor tolerance for distress, who feel unlovable and who experience

hopelessness and helplessness, are at increased risk for suicide related behavior. These theories

are supported empirically, as in psychiatric patients and hospitalized individuals, hopelessness is

related to death by suicide over 90% of the time (Beck et al., 1990; Beck, Brown, Berchick,

Stewart, & Steer, 2006) and history of suicide-related behavior is predictive of future suicidal

behavior (Beck et al., 1999).

Interpersonal dysfunction, including loneliness and social isolation, has long been a

component of theories of suicide (Boardman, Grimbaldeston, Handley, Jones, & Willmott, 1999)

and, in general, suicide rates decrease with increased connections to their social network (Joiner,

Hollar, & Van Orden, 2006; Lester & Bean, 1992; Mijuskovic, 1980). Beginning with

Durkheim, who proposed that suicide was a socially-facilitated phenomenon derived from

anomic (e.g., loneliness) and egoistic (e.g., detached from society) risk factors (Jones, 1986), a

large body of research has substantiated that social isolation is, indeed, a risk factor for suicide

(Bearman & Moody, 2004; Berkman, Glass, Brissette, & Seeman, 2000; Maris, 1997). A

prominent modern perspective on suicide is Joiner's Interpersonal Theory of Suicide (IPTS),

which posits that unmet interpersonal needs coupled with acquired capability contribute to risk

for suicide (Joiner, 2005). Thwarted interpersonal needs include thwarted belongingness, or the unmet need to belong among others, along with perceived burdensomeness, or the perception that one is a liability to others, whereas acquired capability for suicide is conceptualized as a loss of fear of death and a tolerance for physical pain that may reduce suicide hesitancy (Van Orden et al., 2010). Of note, acquired capability may develop as a result of chronic harm to the self, including previous suicide attempts and non-suicidal self-injury (Joiner, 2005), making reduction of NSSI an important component of a comprehensive suicide prevention plan.

Non-Suicidal Self-Injury: A Gateway to Suicide-Related Behavior

Related to, and often confused with, suicidal behavior is non-suicidal self-injury (NSSI), which is typified by deliberate self-injurious behaviors (Kerr et al., 2010) that occur without intent to die and in the absence of suicidal ideation (Muehlenkamp, 2005; Nock & Favazza, 2009; Silverman et al., 2007). Despite the absence of lethal intent, NSSI is a strong predictor of future suicide-related behavior and death by suicide, and is often conceptualized as a "gateway" to suicidal behavior, with repetitive NSSI reducing inhibition related to, and increasing acquired capacity for, suicide (Nock, Joiner, Gordon, Richardson, & Prinstein, 2006; Whitlock et al., 2012). Approximately 70% of adolescents who report past engagement in NSSI attempt suicide (Nock et al., 2006) and, across the lifespan, 50 to 85% of individuals who engage in NSSI have also attempted suicide (Stanley, Winchel, Molco, Simeon, & Stanley, 1992).

Non-suicidal self-injury is currently included in the DSM-5 as its own disorder, in contrast to past versions of the DSM, when its conceptualization was as a symptom of other disorders (i.e., borderline personality disorder). A diagnosis of NSSI requires that an individual engage in self-inflicted bodily damage on at least five occasions within the past year, with the expectation that the behavior will relieve negative affect, ameliorate interpersonal distress,

and/or foster positive feelings (APA, 2013). Self-inflicted bodily damage can take the form of a wide range of behaviors, including burning skin with cigarettes, hitting and injuring limbs, scratching and interfering with wound healing, and repetitive rubbing in attempts to irritate the skin (Nock & Favazza, 2009). Cutting, however, is the most popular method, with approximately 70 to 90% of individuals reporting cutting over the course of their disorder (Klonsky, 2007). It is important to note that NSSI is differentiated from self-harm that stems from other psychological disorders such as intellectual disability and autism (In-Albon, Ruf, & Schmid, 2013).

The prevalence of NSSI differs greatly across a variety of demographic characteristics, including age, sex, ethnicity, and sexual orientation. Among adult populations, the prevalence of NSSI is approximately 1 to 4% (Jacobson & Gould, 2007), whereas 15% of adolescents and 17% of college students report engaging in NSSI, and individuals aged 18 to 25 years old are at the highest risk for NSSI (Rodham & Hawton, 2009). With regard to sex differences, findings are mixed, with most research indicating that females are three times as likely to engage in NSSI as male counterparts are; however, these differences in prevalence are contested, with some literature suggesting that the gap in prevalence is less distinct (Whitlock & Rodham, 2013). Differences between sexes also exists for NSSI methodology, with females more likely to engage in cutting behaviors and males more likely to report hitting methods (i.e., punching objects) (Sornberger, Heath, Toste, & McLouth, 2012). Little research has investigated the factors contributing to sex differences in prevalence and methodology of NSSI. However, preliminary findings posit that gender differences may stem from differential emotion regulation experiences and functioning, such as socialization of emotions (i.e., shame versus anger among women and men, respectively) or female response to emotion (i.e, greater propensity among women to

engage in rumination), as well as sex-based effects including hormonal differences (i.e,

testosterone versus estradiol) (Bresin & Schoenleber, 2015).

Ethnically and socio-culturally, Caucasians, Native Americans, Hispanics, and

individuals who identify as multi-racial are at the highest risk for NSSI, compared to African

Americans and Asian Americans (Kuentzel, Arble, Boutros, Chugani, & Barnett, 2012; Wester

& Trepal, 2015). Such differences in the prevalence of NSSI across cultural groups have, in part,

been tied to a sense of ethnic belonging (i.e., sense of affirmation, commitment to ethnic group),

with Caucasian students reporting the lowest levels of ethnic belonging compared to African

Americans and Asian Americans (Wester & Trepal, 2015). The impact of various risk and

protective factors for NSSI also differs across ethnicities; for example, a relation exists between

social anxiety and NSSI among young adult ethnic minorities, but not among white individuals.

In terms of risk factors, substance use is a more salient indicator of risk for NSSI among whites

compared to ethnic minorities and, when considering protective factors, peer support is a more

salient protective factor for ethnic minorities compared to their white counterparts (Polanco-

Roman, Tsypes, Soffer, & Miranda, 2014).

Differences in prevalence of NSSI also exist across sexual orientation; individuals who

identify as sexual minorities are at greater risk for NSSI compared to heterosexual counterparts

(Batejan, Jarvi, & Swenson, 2015). Within-group differences also exist, as young adults who

identify as bisexual or questioning are at higher risk for NSSI compared to lesbian/gay young

adults (Batejan et al., 2015; Sornberger, Smith, Toste, & Heath, 2013). Vulnerability to

engagement in NSSI for sexual minorities may be due, in part, to minority stress, which refers to

social stressors such as discrimination and victimization that are a result of minority status

(Muehlenkamp, Hilt, Ehlinger, & McMillan, 2015).

Conceptually, NSSI may serve different purposes across social/interpersonal and cognitive-emotional functioning (Bentley, Nock, & Barlow, 2014). NSSI behavior can be categorized as either a positive reinforcer, meaning it generates intrapersonal or interpersonal reinforcement (e.g., signal for help, to secure belongingness in a group), or a negative reinforcer, where it serves as a maladaptive mechanism to cope with an undesired emotional state or social event (e.g., allows excusal from an anxiety-provoking situation). Indeed, it is posited that NSSI may be utilized as a form of interpersonal communication, or "social signaling," in which individuals who struggle to communicate their distress verbally, or who do not get a desired response from verbal communication, may engage in self-injury to communicate heightened distress (Nock, 2008; Wedig & Nock, 2007).

NSSI may also be oft-employed as a form of affective regulation, decreasing distress and, thereby, being reinforced for future usage (Bentley et al., 2014). Although the assumption is often made that NSSI must be painful, it may actually elicit pleasant or desirable sensations, again increasing likelihood of recurrence (Selby, Nock, & Kranzler, 2013). From a physiological perspective, the physical pain of NSSI can trigger the body to release endorphins, ultimately leading to mood enhancement (Stanley et al., 2010). Psychologically, NSSI may help to distract from negative emotions, such as anger, rejection and self-criticism, and may halt ruminative thoughts (Nock, Prinstein, & Sterba, 2009; Selby, Franklin, Carson-Wong, & Rizvi, 2013).

Risk for NSSI may stem from deleterious environmental, psychosocial, and biological factors. Childhood abuse or mistreatment, and familial hostility, often contribute to vulnerability for future NSSI, potentially altering neural anatomy (i.e., changes in gray matter volume, increased activity in frontal lobe, decreased usage of limbic system) and reducing the threshold

for distress tolerance while increasing responsivity to stressors. This reduced distress tolerance, in turn, may translate to reliance on maladaptive coping strategies (i.e., NSSI) to avoid distress (Ballard, Bosk, & Pao, 2010). Exposure to others engaging in NSSI is also a potential antecedent to first incident of NSSI, with social contagion demonstrated among self-injurers, similar to suicide contagion (Jarvi, Jackson, Swenson, & Crawford, 2013).

Individuals who engage in NSSI are more likely to be diagnosed with psychopathology, including mood disorders and borderline personality disorder (Nitkowski & Petermann, 2011). Approximately 42% of individuals who self-injure meet the criteria for major depressive disorder (Nock & Kessler, 2006), and depression is predictive of engagement in NSSI (Marshall, Tilton-Weaver, & Stattin, 2013). Among college students and adult populations, individuals with anxiety disorders, particularly panic and post-traumatic stress disorders, are also at increased risk for NSSI (Bentley, Cassiello-Robbins, Vittorio, Sauer-Zavala, & Barlow, 2015), and those with generalized anxiety disorder and social phobia are more likely to engage in NSSI repetitively over time (Chartrand, Sareen, Toews, & Bolton, 2012). It has been theorized that the comorbidity between anxiety and depressive symptoms and NSSI may be due, in part, to the ability of NSSI to ameliorate anxious or otherwise negative feelings (Nock, 2014).

Protective Factors: Points of Intervention to Decrease Suicide Risk

Although psychopathology, such as anxiety and depressive symptoms, and engagement in NSSI, are established risk factors for suicide-related behavior, not all individuals who experience these risk factors become suicidal, perhaps due to individual-level protective factors that might buffer against risk (McLean, Maxwell, Platt, Harris, & Jepson, 2008). In the presence of contributors to vulnerability, protective factors offer a point of clinical intervention that, if targeted, can decrease risk for suicide, highlighting the importance of their identification.

28

Research on protective factors examines environmental, sociocultural and inter- and intra-personal elements that may result in resiliency against suicide-related behavior (Blum et al., 2003). The concept of suicide resiliency suggests that suicidal individuals may overcome suicidal ideation and may refrain from suicide attempts, to the extent that they are able to manifest positive beliefs about their life, have the ability and resources to seek out help, and have the self-efficacy to overcome stressors contributing to suicidal thoughts (Osman et al., 2004). Protective factors are typically categorized as individual attributes (e.g., positive outlook, self-regulation, problem-solving skills), relationships (e.g., strong social network, positive familial ties), and community resources (e.g., access to health care, involvement in religious communities), all of which have the potential to serve as a buffer of suicide-related behavior (Borowsky et al., 2001).

When considering community resources, the extent to which individuals have access to necessary clinical care, including both mental and physical health services, may decrease risk for suicide and suicide-related behavior (Ahmedani & Vannoy, 2014). Broadly, in the United States, increased rates of federal spending on mental health care are associated with trends toward decreased risk for suicide across the lifespan (Tondo, Albert, & Baldessarini, 2006). When care is accessed, it is often successful. As an example, primary care interventions aimed at treating adolescent depression reduced suicide-related behavior by 55 percent (Leon, Marzuk, Tardiff, Bucciarelli, Piper, & Galea, 2006). Also at the public health level, restricted access to lethal means may be effective at preventing suicide (U.S. Public Health Service, 1999). Countries which have restricted access to lethal means, such as access to domestic gas (i.e., coal gas with high carbon monoxide content), pesticides, and access to sites where individuals often

attempt suicide (i.e., bridges, tall buildings), have observed population-wide decreases in death by suicide by up to 30-50% (Barber & Miller, 2014).

At the psychosocial and cultural levels, elements such as familial relationships and group-level belief systems, including religiousness and spirituality, may operate as protective factors against suicide-related behavior. Adolescents who report a strong familial connection, with greater parental involvement and emotional support, are less likely to attempt suicide (Flouri & Buchanan, 2002; Israelashvili et al., 2006). A sense of social belonging, or connectedness to others, is linked to decreased risk for suicidal behavior (Hatcher & Stubbersfield, 2013) and, as well, sense of connectedness, or perception of interpersonal closeness, may also buffer risk. Among two college samples, students who reported fewer social ties or confidants experienced greater suicidal ideation and suicide-related behavior (Whitlock et al., 2011; Whitlock, Wyman, & Barreira, 2012).

As well, cultural factors including help-seeking behaviors, stigma toward and distrust of mental health services, and collectivism versus individualism within communities, impact rates of suicide across sociocultural communities (Goldston, Molock, Whitbeck, Murakami, Zayas, & Nagayama Hall, 2008). American Indian, Latino, and Asian adolescents and their families may be less likely to seek mental health services due to cultural beliefs or values that contribute to stigma toward mental illness or health care utilization, thereby increasing risk for suicide (Goldston et al., 2008). Other sociocultural factors, such as levels of religiousness, which may differ across sociocultural groups and within communities, influence rates of suicide. In a United States sample, individuals who attended religious services, or who relied on religion for strength and guidance, report greater reasons for living and greater moral objections to suicide, and are less likely to attempt or die by suicide (Dervic, Oquendo, Grunebaum, Ellis, Burke, &

30

Mann, 2004; Kleiman & Liu, 2014; Taylor, Chatters, & Joe, 2011). Beyond organized religion, both adults and adolescents who identify as spiritual, and who can identify meaningful existential or transcendent beliefs, are at a decreased risk for suicide attempt compared to non-spiritual counterparts (Kyle, 2013; Rasic, Belik, Elias, Katz, Enss, & Sareen, 2009).

Individual-level protective factors which may contribute to suicide resilience include greater levels of self-esteem, social problem solving skills, dispositional optimism, and trait hope (Fergusson et al., 2003; Hirsch, Chang, & Jeglic, 2012; Hirsch, Conner, & Duberstein, 2007; Hirsch, Wolford, LaLonde, Brunk, & Morris, 2007; Mitchell, Cukrowicz, Van Allen, & Seegan, 2015), among others. Reasons for living may also buffer suicide risk, in both clinical and non-clinical samples, and include elements such as responsibility to family and friends, adaptive coping and problem-solving skills, meaningful interpersonal relationships, and spirituality (Beautrais, Collings, & Ehrhardt, 2005; Linehan, Goodstein, Nielsen, & Chiles, 1983; Malone et al., 2000). Additionally, psychosocial factors such as the fulfillment of basic psychological needs (i.e., autonomy, competence, and relatedness), and the presence of forgiveness, among others, may buffer risk for suicide among young adults and college students (Britton, Van Orden, Hirsch, & Williams, 2014; Hirsch, Webb, & Jeglic, 2011; Lakey, Hirsch, Nelson & Nsamenang, 2014).

Self-Compassion as a Protective Factor

One particular individual-level protective factor, self-compassion, may have utility for suicide prevention, given a growing body of evidence suggesting its beneficial relation with a diverse array of physical and mental health behaviors and outcomes (i.e., less depression and perceived stress, more positive health behaviors) among college student and community samples (Hall, Row, Wuensch, & Godley, 2013; Sirois, Kitner, & Hirsch, 2015). Defined as kindness

31

and understanding toward oneself, acceptance of negative experiences and "an emotionally positive self-attitude," as opposed to self-criticism (Neff, 2003; Neff & Dahm, 2014), self-compassion stems from Buddhist philosophy, and encompasses three factors: self-kindness, common humanity, and mindfulness. Self-kindness refers to an understanding and accepting approach to self-appraisal, as opposed to viewing oneself in a highly critical manner. Second, common humanity refers to the perception that one's experiences are universal to the human experience, rather than viewing experiences as isolated or alienating. Finally, mindfulness refers to awareness of one's thoughts and feelings, but allowing distance from these thoughts (Neff, 2003).

Theory suggests that self-compassion stems from attachment and affiliation in childhood, meaning that individuals with secure attachments and supportive relationships learn how to, similarly, treat themselves in a compassionate manner (Gilbert, 2009). This assertion is supported by research indicating that low levels of self-compassion may stem from critical familial environments, dysfunctional families, childhood abuse, and insecure attachment (Neff & McGehee, 2010; Wei, Liao, Ku, & Shaffer, 2011). Although self-compassion may stem from childhood experiences, it is malleable in that it can be fostered, clinically, within a therapeutic setting (Gilbert & Procter, 2006).

With regard to the underlying mechanisms of action between self-compassion and health outcomes, little previous research has been conducted. In studies of college students and community members, self-compassion was a mediator of the relation between attachment anxiety and well-being among college students and community samples (Wei et al., 2011), suggesting that individuals with dysfunctional relationships are more likely to be self-critical in the context of interpersonal functioning. Self-compassion also mediates the relation between

childhood abuse and emotional dysregulation, such that individuals with higher levels of self-compassion are better able to regulate their emotions, despite childhood maltreatment (Vettese, Dyer, Li, & Wekerle, 2011). These patterns of effects suggest that the potential benefits of self-compassion may be due, in part, to lower levels of negative self-evaluation and maladaptive emotion in the context of stressful situations (Leary, Tate, Adams, Allen, & Hancock, 2007).

Self-compassion may operate in a two-fold fashion, first, by physiologically deactivating the body's stress system (e.g., amygdala "fight or flight" response) and reducing feelings of threat and, second, by activating the self-soothing system, or the ability to calm oneself during times of distress (e.g.., release of oxytocin, similar to the effect of physical touch), ultimately promoting emotional resilience (Gilbert & Irons, 2005). Individuals who experience secure attachment, or compassion and soothing from a caretaker in times of distress during childhood, may similarly learn to direct compassion towards themselves and engage in self-soothing, with childhood experiences explaining the development of this physiological response (Gilbert, 2009). This assertion of physiological underpinnings has preliminary support. In a study of college students, completing a self-compassion activity in which participants envisioned an individual providing unconditional love and acceptance, resulted in reduced levels of cortisol, a stress hormone, as well as increased heart-rate variability, which promotes self-soothing and resilience during times of stress (Porges, 2007; Rockliff, Gilbert, McEwan, Lightman, & Glover, 2008).

In general, individuals high in self-compassion experience psychological resilience and positive mental health (Neff & McGehee, 2010), including decreased anxiety and depression, and better interpersonal functioning (MacBeth & Gumley, 2012; Neff & Beretvas, 2013). Conversely, individuals low in self-compassion more often manifest negative mental and physical health outcomes, including emotional distress, and increased alcohol abuse (Vettese et

33

al., 2011), compared to individuals high in self-compassion who are more likely to engage in health promoting behaviors (Sirois, Kitner, & Hirsch, 2015).

Preliminary evidence also suggests that self-compassion is beneficially related to suicidal outcomes. Mindfulness and self-compassion were related to reduced suicide risk in individuals who experienced intimate partner abuse (Tesh et al., 2013) and, in a study of military veterans, self-compassion was related to reduced suicide risk (Bryan et al., 2015). Research with youths indicates that children and adolescents with higher levels of self-compassion were less likely to attempt suicide (Tanaka, Wekerle, Schmuck, & Paglia-Boak, 2011; Vettese et al., 2011). Among a sample of youth at risk for trauma-related psychopathology, at a 6-month follow-up, self-compassion was related to lower levels of posttraumatic stress, depression, and suicide-related behavior (Zeller, Yuval, Nitzan-Assayag, & Bernstein, 2014). Given that self-criticism is highly predictive of suicide-related behavior, even more so than perfectionism, anxiety, and depression (Donaldson, Spirito, & Farnett, 2000), and considering that self-compassion is, in some ways, the conceptual opposite of self-criticism, it may be that self-compassion is a critical component to be utilized in the prevention of suicide.

Conclusion

Psychopathology, including symptoms of anxiety and depression, as well as self-harming behaviors (i.e., NSSI), are well-established risk factors for suicide (Arsenault-Lapierre et al., 2004; Nock et al., 2006), whereas potential protective factors, such as self-compassion, are less understood (Neff & Dahm, 2014). Further, no comprehensive models exist that examine a "pathway" to suicidal outcomes in college students that involves NSSI and self-compassion as a potential protective factor.

As such, we examined the associations between symptoms of anxiety and depression and suicide related behavior and, further, the potential mediating role of non-suicidal self-injury. We examined the potential moderating role of self-compassion on these mediated relations; that is, between psychopathology and NSSI, between NSSI and suicide related behavior, and between psychopathology and suicide related behavior.

Hypothesis 1. At the bivariate level, we hypothesized that symptoms of depression and anxiety will be positively related to non-suicidal self-injury and suicide related behavior, and that NSSI and suicide related behavior will be positively related. We also hypothesized that self-compassion will be inversely related to depressive and anxiety symptoms, NSSI, and suicide related behavior.

Hypothesis 2. At the multivariate level, we hypothesized that anxiety and depressive symptoms will be related to suicide related behavior, and that non-suicidal self-injury will mediate the relations between depressive symptoms and suicide related behavior, and between anxiety symptoms and suicide related behavior, such that greater levels of psychopathology will be related to greater NSSI and, in turn, to more suicide related behavior.

Hypothesis 3. Finally, we hypothesized that self-compassion (and all subscales of the self-compassion scale) will moderate the relations between depressive/anxiety symptoms, NSSI, and suicide related behavior on all paths of the model (i.e., depressive/anxiety symptoms and NSSI; NSSI and suicide related behavior; depressive/anxiety symptoms and suicide related behavior), such that these associations would be weakened by the presence of self-compassion.

CHAPTER 2

METHODS

Procedures

Data in this study were collected as part of a larger Institutional Review Board-approved study conducted by the Laboratory of Rural Psychological and Physical Health in the Department of Psychology at East Tennessee State University. Data collection took place as part of ETSU PEAKS (Prevention through Education, Awareness, and Knowledge of Suicide), a campus-wide suicide prevention program funded by the Garrett Lee Smith Memorial Act and funded by the Substance Abuse and Mental Health Services Administration (SAMSHA). Participants ($N = 338$) were undergraduate students enrolled at East Tennessee State University. Self-report questionnaires were administered through SONA, a campus-wide online research system which supplies the Department of Psychology with an undergraduate participant pool. SONA is used to recruit and compensate participants for their time, with students in the current study receiving course credit or extra credit as compensation for their participation. The use of random assignment of computer-generated identification numbers insures participant confidentiality. All participants were provided electronic informed consent, and a list of campus, local, and national mental health resources was provided to all participants at the conclusion of the study.

Participants

Our sample consisted of 338 undergraduate students who ranged in age from 18 to 58, with an average age of 21.81 years old ($SD = 5.33$). Our sample was primarily female ($N = 225$; 67%), with 2 students identifying as transgender (.6%). Participants were predominantly White ($N = 294$; 87%), with Black ($N = 18$; 5.5%), Asian ($N = 10$; 3%), and Hispanic/Latino ($N = 6$;

1.8%) students comprising the remainder of the sample. Student participants, overall, were first year undergraduates ($N = 119$, 35.2%), full-time ($N = 313$, 92.6%), and U.S. citizens ($N = 327$, 97%). Approximately one-third of students lived on-campus ($N = 111$; 32.8%), one-third off-campus on their own ($N = 118$; 34.9%), and one-third off-campus with family ($N = 109$; 32.2%).

Rationale for Sample

The use of a college sample for our study was justified given the prevalence of the variables of interest (i.e., NSSI, suicide behavior, and symptoms of depression and anxiety) among college students. Our outcome, suicidal behavior (taking into account suicidal ideation), is often more widespread among college students compared to the general population (Drum, Brownson, Burton, Denmark, & Smith, 2009), and suicide is the 2nd leading cause of death in young adults ages 15-24 (CDC, 2015). Additionally, most studies find a disproportionate prevalence of depression and non-suicidal self-injury within this population, compared to the general population (Herman et al., 2011; Rodham & Hawton, 2009).

Measures

In addition to self-report measures of our variables of interest, participants completed a demographic questionnaire assessing, among other characteristics, sex, age, and race.

Depressive Symptoms

The Beck Depression Inventory-2 (BDI-2; Beck, Steer, & Brown, 1996) is a 21-item self-report questionnaire which assesses depressive symptomatology, including changes in sleep and appetite, fatigue, and difficulty concentrating. Each item is scored on a four-point Likert scale from 0 to 3 with the exception of two items that contain only one response item. For example, a participant is prompted to rate their loss of pleasure on a scale of 1 ("I get as much pleasure as I ever did from the things I enjoy") to 4 ("I can't get any pleasure from the things I used to

37

enjoy"). Responses are scored through summation, with higher scores representing the greater presence and severity of depressive symptoms; a score of 0 to 13 is classified as minimal, 14 to 19 is considered mild, 20 to 28 moderate, and 29 to 57 (the maximum score) is categorized as severe depression. The BDI-2 has excellent reliability both in outpatient samples (α = .92) and college samples (α = .93), and good convergent validity with the Hamilton Psychiatric Rating Scale for Depression-Revised among a sample of psychiatric outpatients (α = .71) (Arbisi, 2001). Within our sample, the internal consistency of the BDI-2 was excellent (α = .95).

Anxiety Symptoms

The Beck Anxiety Inventory (BAI; Beck & Steer, 1993) is a 21-item self-report questionnaire which assesses common anxiety symptoms including "numbness or tingling," "heart pounding/racing," "hands trembling," and "difficulty in breathing." Each item is scored on a four-point Likert scale ranging from 0 ("not at all") to 3 ("severely—it bothered me a lot"), with a total score (0 to 63) generated by summing all items. Participants are prompted to report the extent to which a symptom has bothered them over the past month. A score of 0 to 21 represents low anxiety, 22 to 35 is indicative of moderate anxiety, and 36 to 63 represents severe anxiety. Among clinical populations, the convergent validity of the BAI with the Brief State Inventory is high (α =.78) (deBeurs, Wilson, Chambless, Goldstein, & Feske, 1997). The internal consistency of the BAI across samples including psychiatric patients and college students is excellent (α = .91) (DeAyala, Vonderharr-Carlson, & Kim, 2005), and was comparably excellent among our sample (α = .94).

Non-Suicidal Self-Injury

Non-suicidal self-injury was assessed using the Self-Harm Inventory (SHI; Sansone, Wiederman, & Sansone, 1998), a 22-item self-report questionnaire which assesses the presence

of deliberate self-harm. Participants are prompted to respond either yes (0) or no (1) to whether they have intentionally participated in a variety of self-harm behaviors, including "burning yourself," "had accidents on purpose," and "cutting yourself." A total score is generated by summing all of the affirmative responses, with a possible total score ranging from 0 to 22. A score of 5 is considered the clinical cut-off for self-harm behaviors (Sansone et al., 1998), but research within non-clinical college populations via analysis of item distributions concluded that a score of 5 typically indicates mild self-harm behavior, with these scores typically indicating that individuals engage in hitting, banging their head, and scratching, and that a score of 11 was indicative of more severe self-harm behavior, such as cutting and burning. Other studies with college samples indicate good internal consistency ($\alpha = .83$) (Latimer, Covic, Cumming, & Tennant, 2009), and the current study had good internal consistency ($\alpha = .87$).

Suicide-Related Behaviors

The Suicidal Behaviors Questionnaire- Revised (SBQ-R; Osman et al., 2001) is a four-item self-report questionnaire used to assess the presence of symptoms of suicidal behavior and their severity, including lifetime suicidal behavior ("Have you ever thought about or attempted to kill yourself?"), suicidal behavior in the past year ("How often have you thought about killing yourself in the past year?"), communication of intent ("Have you ever told someone that you were going to commit suicide, or that you might do it?"), and likelihood of future suicide attempt ("How likely is it that you will attempt suicide someday?"). Each of the four questions is scored on a variable Likert scale that ranges from 5 to 7 response levels depending on the question. Responses are summed for a total score which ranges from 0 (no suicidal behavior or ideation) to 19, with higher scores indicating the presence of greater suicidal behavior. Among college samples, a cutoff score of 7 is used to distinguish suicidal and non-suicidal individuals (Osman et

al., 2001). The SBQ-R has convergent validity with other measures of suicidal behavior, including the Scale for Suicidal Ideation ($r = .69$) and the Reasons for Living Inventory ($r = -.34$) (Cotton, Peters, & Range, 1995). The SBQ-R also has high internal consistency among college students ($\alpha = .97$) and good internal consistency among clinical samples ($\alpha = .87$) (Osman et al., 2001). In the current study, the internal consistency of the SBQ-R was good ($\alpha = .81$).

Self-Compassion Scale

Self-compassion was measured using the Self-Compassion Scale (SCS; Neff, 2003), a 26-item self-report questionnaire which assesses the 3 components of self-compassion, including self-kindness (10-items), common humanity (8-items), and mindfulness (8-items). Sample items include "I try to be understanding and patient towards the aspects of my personality I don't like" and "I try to see my failings as part of the human condition." Responses to items are scored on a 5-point Likert-scale from 1 ("almost never") to 5 ("almost always"). An overall self-compassion score is generated by averaging the mean score on each subscale, with a maximum possible score of 30. Among college students, the internal consistency reliability of the overall measure is excellent ($\alpha = .92$), and adequate for the various subscales (self-kindness ($\alpha = .77$); self-judgement ($\alpha = .77$); common humanity ($\alpha = .79$); isolation ($\alpha = .79$); mindfulness ($\alpha = .75$); over identification ($\alpha = .75$)) (Neff, 2003). In our sample, total internal consistency was good ($\alpha = .80$), and subscale internal consistency ranged from adequate to good (self-kindness ($\alpha = .85$); self-judgement ($\alpha = .82$); common humanity ($\alpha = .78$); isolation ($\alpha = .83$); mindfulness ($\alpha = .78$); over identification ($\alpha = .80$)).

Statistical Analyses

Bivariate Analyses

We conducted bivariate analyses to assess the association between, and independence of, study variables. Pearson's product-moment correlation coefficients were used to determine independence, with a coefficient of $r \geq .80$ demonstrating multicollinearity (Field, 2005).

Mediation

Simple mediation analyses, consistent with Hayes (2013), were used to examine two separate models, one which examines the potential mediating role of NSSI on the relation between symptoms of anxiety symptoms and suicidal behavior, and the other which examines the potential mediating role of NSSI on the relation between symptoms of depression and suicidal behavior. Mediation analysis examines a potential underlying mechanism that may explain the relation between an independent and dependent variable. In simple mediation, the relation between the independent and dependent variable is divided into direct effects, or the direct relationship the independent variable has on the dependent variable and indirect effects, or the effect of the independent variable on the dependent variable, transmitted through the mediator.

All analyses were conducted using "PROCESS," (Hayes, 2013) a statistical module used in conjunction with SPSS Version 22.0 (IBM Corp, 2013). Hayes' model of mediation does not require the assumption of normal distribution for indirect effects by using bootstrapping, which creates a sample distribution via an iterative random re-sampling process with replacement to construct a distribution that allows estimates of accuracy of sample statistics versus population parameters (i.e., confidence intervals, error); current analyses utilized a bootstrapping rate of 10,000 resamples. Analyses were conducted using model 4 of "PROCESS," generating 95%

41

confidence intervals of the indirect effect of the predictor (anxiety or depressive symptoms) on the outcome (suicidal behavior), via the mediator (NSSI). In all models, age, race, and sex were covaried, given their associations with our variables of interest. For instance, there are age differences in the risk of manifestation of NSSI and suicide (Bozzay, Liu, & Lkeiman, 2014), and sex and ethnic/racial differences exist in the prevalence of mood disorders, NSSI, and suicidal behavior (Barrocas, Hankin, Young, & Abela, 2012; Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007).

Moderated Mediation (Conditional Indirect Effects Model)

Further, we developed moderated-mediation models to assess the potential moderating effect of self-compassion on all paths of both aforementioned simple mediation models. Moderated mediation examines conditional indirect effects, meaning that the indirect effect found in the simple mediation model is impacted by another variable. This moderator variable interacts with the predictor variable such that the effect of the predictor variable varies across levels of the moderator. In the anxiety symptom model, moderation analysis was used to examine the potential moderating effect of self-compassion on the relationship between anxiety symptoms and NSSI (a path), NSSI and suicidal behaviors (b path), and anxiety symptoms and suicidal behaviors (c path). Similarly, in the depressive symptom model, moderation analysis was used to examine the potential moderating effect of self-compassion on the relationship between depressive symptoms and NSSI (a path), NSSI and suicidal behaviors (b path), and depressive symptoms and suicidal behaviors (c path). In addition to the total self-compassion score, the moderating role of each of the three subscales (self-kindness, common humanity, and mindfulness) was examined.

Analyses were conducted using model 59 of "PROCESS." As with simple mediation, moderated mediation analyses utilize bootstrap resampling to generate 95% confidence intervals of conditional indirect effects. Results are interpreted such that a confidence interval which does not contain zero indicates that a conditional indirect effect is present in the model.

CHAPTER 3

RESULTS

Demographics

Our sample of 338 undergraduate students was primarily female ($n = 225$; 67%), with two students identifying as transgender (.6%) and the remainder of the sample identifying as male ($n = 111$; 32.4%). Our sample ranged in age from 17 to 58, with an average age of 21.81 years ($SD = 5.33$). Student race/ethnicity was largely White ($n = 294$; 87%), with Black ($n = 18$; 5.5%), Asian ($n = 10$; 3%), and Hispanic/Latino ($n = 6$; 1.8%) students comprising the remainder of the sample. Ten students did not report their race. In terms of enrollment, participants were primarily first year undergraduates ($n = 119$, 35.2%), followed by sophomore ($n = 74$, 22%), junior ($n = 73$, 21.7%), and senior students ($n = 59$, 17.5%), with the remainder of students reporting as "other." The majority of students reported being full-time ($n = 313$; 92.6%) and domestic ($n = 327$; 97%). As well, one-third of students reported living on-campus ($n = 111$; 32.8%), one-third off campus on their own ($n = 118$; 34.9%), and one-third off-campus with family ($n = 109$; 32.2%). See Table 1 for demographic information.

Table 1

Descriptive Statistics for Demographic Variables

Demographic Variables	Frequency	Percentage
Sex		
Female	225	67
Male	109	32.4
Transgender	2	0.6
Race		
White	294	89.6
Black	18	5.5
Asian	10	3.0
Hispanic/Latino	6	1.8
Academic Level		
Undergrad, 1st year	119	35.3
Undergrad, 2nd year	74	22.0
Undergrad, 3rd year	73	21.7
Undergrad, 4th year	59	17.5
Graduate student	1	0.3
Other	11	3.3

For descriptive statistics for each variable and scale in the study, see Table 2; further, in the following paragraphs, we provide clinical cut-off scores and mean scores for non-clinical samples, as comparison to scores from our current study. On the Beck Depression Inventory, a score of 0 to 13 is classified as minimal, 14 to 19 is considered mild, 20 to 28 moderate, and 29 to 57 (the maximum score) is categorized as severe depression. Among a non-clinical student sample, the mean score on the BDI was 12.6 ($SD = 9.9$), which is slightly higher than our current sample ($M = 10.58$, $SD = 11.39$) (Beck, 1996). On the Beck Anxiety Inventory, a score of 0 to 21 represents low anxiety, 22 to 35 is indicative of moderate anxiety, and 36 to 63 represents

severe anxiety. Within the current sample, the mean was 13.77 ($SD = 11.83$), which is slightly

higher than a previous non-clinical student sample ($M = 13.1$, $SD = 9.6$) (Creamer, Foran, &

Bell, 1995).

Table 2

Levels of Demographic, Predictor, and Criterion Variables by Total Sample

Variable	Total Sample	
	M	SD
Suicidal Behavior	2.23	3.30
Depressive Symptoms	10.58	11.39
Anxiety Symptoms	13.77	11.83
Non-Suicidal Self-Injury	3.27	3.93
Self-Compassion	17.88	3.52

Note: Suicidal Behavior = Suicidal Behavior Questionnaire – Revised ($n = 336$), Depressive Symptoms = Beck Depression Inventory- 2nd Edition ($n = 335$), Anxiety Symptoms = Beck Anxiety Inventory ($n = 338$), NSSI = Self-Harm Inventory ($n = 337$), Self-Compassion = Self-Compassion Scale ($n = 334$).

With regard to the Self Harm Inventory, a score of 5 is considered the clinical cut-off for

self-harm behaviors. Among a non-clinical student sample, the average score was 5.16 ($SD = $

3.6) (Latimer et al., 2009) which is slightly higher than the scores reported in our current sample

($M = 3.27$, $SD = 3.93$). In terms of suicidal behavior, among college samples, a cutoff score of 7

is used to distinguish suicidal and non-suicidal individuals on the SBQ-R (Osman et al., 2001).

Among our current sample, the average score was 2.23 ($SD = 3.30$), which is less than in

previous research among non-clinical undergraduate students ($M = 5.01$, $SD = 1.37$). Finally, on

46

the Self-Compassion Scale, among a non-clinical sample, the mean score was 18.25 ($SD = 3.75$) (Neff, 2003), which was comparable to the average score within our sample ($M = 17.88$, $SD = 3.52$).

Bivariate Correlations among Study Variables

Pearson's product moment correlation analyses were utilized to test our first hypothesis, which was supported. All bivariate correlations were in anticipated directions. Suicidal behavior was significantly positively related to depressive symptoms ($r=.51$, $p<.001$), anxiety symptoms ($r=.46$, $p<.001$), and NSSI ($r=.46$, $p<.001$) and negatively related to self-compassion ($r=-.37$, $p<.001$). Similarly, depressive symptoms were positively related to anxiety symptoms ($r=.63$, $p <.001$) and NSSI ($r=.45$, $p<.001$) and negatively related to self-compassion ($r=-.50$, $p<.001$). Anxiety symptoms were positively related to NSSI ($r=.39$, $p<.001$) and negatively related to self-compassion ($r=-.37$, $p<.001$). NSSI was negatively related to self-compassion ($r=-.37$, $p<.001$) (See Table 3).

Table 3

Bivariate Correlations of Study Variables

	Depressive Symptoms	Anxiety Symptoms	NSSI	Self-Compassion	Self-Kindness	Common Humanity	Mindfulness
Suicidal Behavior	.51	.46	.46	-.35	-.27	-.21	-.23
Depressive Symptoms	-	.63	.45	-.50	-.35	-.33	-.35
Anxiety Symptoms		-	.39	-.37	-.23	-.19	-.28
NSSI			-	-.37	-.30	-.20	-.18
Self-Compassion				-	.77	.55	.69
Self-Kindness					-	.55	.69
Common Humanity						-	.60

Note: Suicidal Behavior = Suicidal Behavior Questionnaire – Revised, Depressive Symptoms = Beck Depression Inventory- 2nd Edition, Anxiety Symptoms = Beck Anxiety Inventory, NSSI = Self-Harm Inventory, Self-Compassion = Self-Compassion Scale. All correlations were significant at *p*<.001.

Mediation Analyses

In a simple mediation model examining the mediating role of NSSI on the relation between depressive symptoms and suicidal behavior, hypotheses were supported. Greater depressive symptoms were significantly related to greater engagement in NSSI ($a = .15$, SE = .02, $p<.001$), as well as to greater suicidal behavior ($c = .12$, SE = .01, $p<.001$). Additionally, NSSI was significantly positively associated with suicidal behavior ($b = .23$, SE = .04, $p<.001$). The direct effect of depressive symptoms on suicidal behavior decreased in significance after accounting for the mediating effect of NSSI ($c' =.12$, SE=.01, $p <.001$), indicating mediation. Also, a specific indirect effect (ab = .03) was significant. In order to determine the presence of a true significant indirect effect, the biased confidence intervals must not contain a true zero, as was the case in our model (BCa 95% CIs [.02, .05]). Individuals who reported greater depressive symptoms reported greater engagement in NSSI and, in turn, more suicidal behavior (See Table 4) (Figure 1).

Table 4

Direct and Indirect Associations between Depressive Symptoms, Anxiety Symptoms, NSSI, and Suicidal Behavior

Path	Estimate (*SE*)	Bias corrected and accelerated 95% Confidence Interval
Suicidal Behavior		
c (Depressive Symptoms→ Suicidal Behavior)	.15 (.01)	
a (Depressive Symptoms → NSSI)	.15 (.02)	
b (NSSI → Suicidal Behavior)	.23 (.04)	
c'	.12 (.01)	
ab	.04 (.01)	[.02, .05]
Suicidal Behavior		
c (Anxiety Symptoms→ Suicidal Behavior)	.13 (.01)	
a (Anxiety Symptoms → NSSI)	.13 (.02)	
b (NSSI → Suicidal Behavior)	.27 (.04)	
c'	.10 (.01)	
ab	.04 (.01)	[.02, .06]

Note: Suicidal Behavior = Suicidal Behavior Questionnaire – Revised, Depressive Symptoms = Beck Depression Inventory- 2nd Edition, Anxiety Symptoms = Beck Anxiety Inventory, NSSI = Self-Harm Inventory, Self-Compassion = Self-Compassion Scale. All associations were significant at *p*<.001

NSSI

$a^{dep} = .15^{***}$
$a^{anx} = .13^{***}$

$b^{dep} = 0.23^{***}$
$b^{anx} = 0.27^{***}$

Depressive Symptoms

Anxiety Symptoms

$c^{dep} = 0.12^{***}$
$c^{anx} = 0.10^{***}$

Suicidal Behavior

$c^{dep'} = 0.12^{***}$
$c^{anx'} = 0.10^{***}$
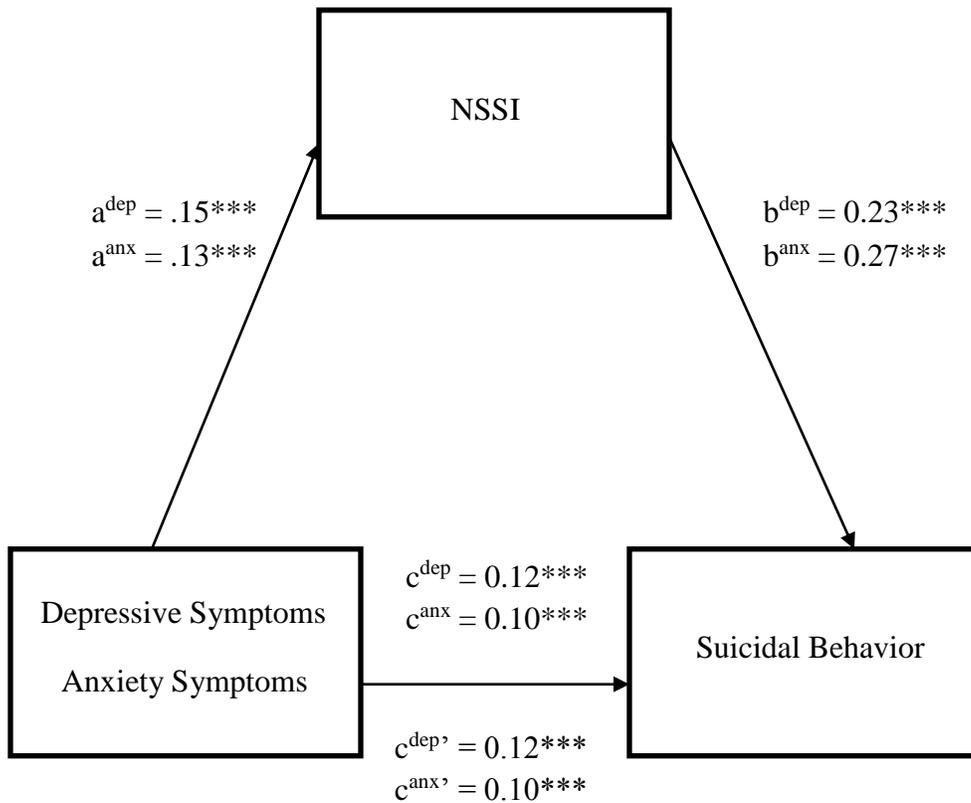
Figure 1. Simple Mediation Model: Depressive and Anxiety Symptoms and Suicidal Behavior: Conditional Indirect Effects of NSSI

Note: c^{dep}/c^{anx} = total effect (depressive symptoms related to suicidal behavior/anxiety symptoms related to suicidal behavior), ab^{dep}/ab^{anx} = total indirect effect (depressive symptoms related to suicidal behavior through non-suicidal self-injury/anxiety symptoms related to suicidal behavior through non-suicidal self-injury), $c^{dep'}/c^{anx'}$= indirect effect (depressive symptoms related to suicidal behavior accounting for non-suicidal self-injury/anxiety symptoms related to suicidal behavior accounting for non-suicidal self-injury)

Similarly, in a simple mediation model examining the mediating role of NSSI on the relation between anxiety symptoms and suicidal behavior, hypotheses were supported. Greater anxiety symptoms were significantly related to greater engagement in NSSI (a =.13, SE = .02, p<.001), as well as to greater suicidal behavior (c = .10, SE = .01, p<.001). Additionally, NSSI was positively associated with suicidal behavior (b = .27, SE = .05, p<.001). The direct effect of anxiety symptoms on suicidal behavior decreased in significance after accounting for the mediating effect of NSSI (c' =.10, SE=.01, p <.001), indicating mediation. Also, a specific indirect effect (ab = .04) was significant. Given that the biased confidence intervals did not contain a true zero (BCa 95% CIs [.02, .06]), a true significant indirect effect was present. Individuals who reported greater anxiety symptoms reported greater engagement in NSSI and, in turn, more suicidal behavior (See Table 4) (Figure 1).

Conditional Indirect Effect Analyses

In a conditional indirect effects model examining the moderating role of the total self-compassion score on all paths of the depression model, self-compassion significantly moderated the relation of depressive symptoms and NSSI (β=-.01, SE=.004, t(315)=-3.21, p<.01), but did not significantly moderate the relation between NSSI and suicidal behavior (β=-.02, SE=.01, t(315)=-1.71, p=.09) or between depressive symptoms and suicidal behavior (β=.01, SE=.004, t(315)=1.77, p=.08). Self-compassion operates as a protective factor on the "a" path of the model, weakening the association between depressive symptoms and NSSI, thereby ultimately decreasing suicide risk (See Table 5) (Figure 2).

Table 5

Conditional Indirect Effects of Self-Compassion: Depressive Symptom Model

Path	B(SE)	t	95% BCa CI
a (Depressive Symptoms x Self-Compassion → NSSI)	-.01(.004)	-3.21**	[-.02, -.01]
b (NSSI x Self-Compassion → Suicidal Behavior)	.02(.01)	-1.71	[-.05, .003]
c (Depressive Symptoms x Self-Compassion → Suicidal Behavior)	.01(.004)	1.77	[-.001, .02]

Note: Suicidal Behavior = Suicidal Behavior Questionnaire – Revised, Depressive Symptoms = Beck Depression Inventory- 2nd Edition, NSSI = Self-Harm Inventory, Self-Compassion = Self-Compassion Scale. *Note*: Unstandardized regression coefficients are reported. Bootstrap sample size = 10,000. BCa CI = Bias-corrected and accelerated confidence interval; CI values not containing 0 are considered significant. **$p<.01$
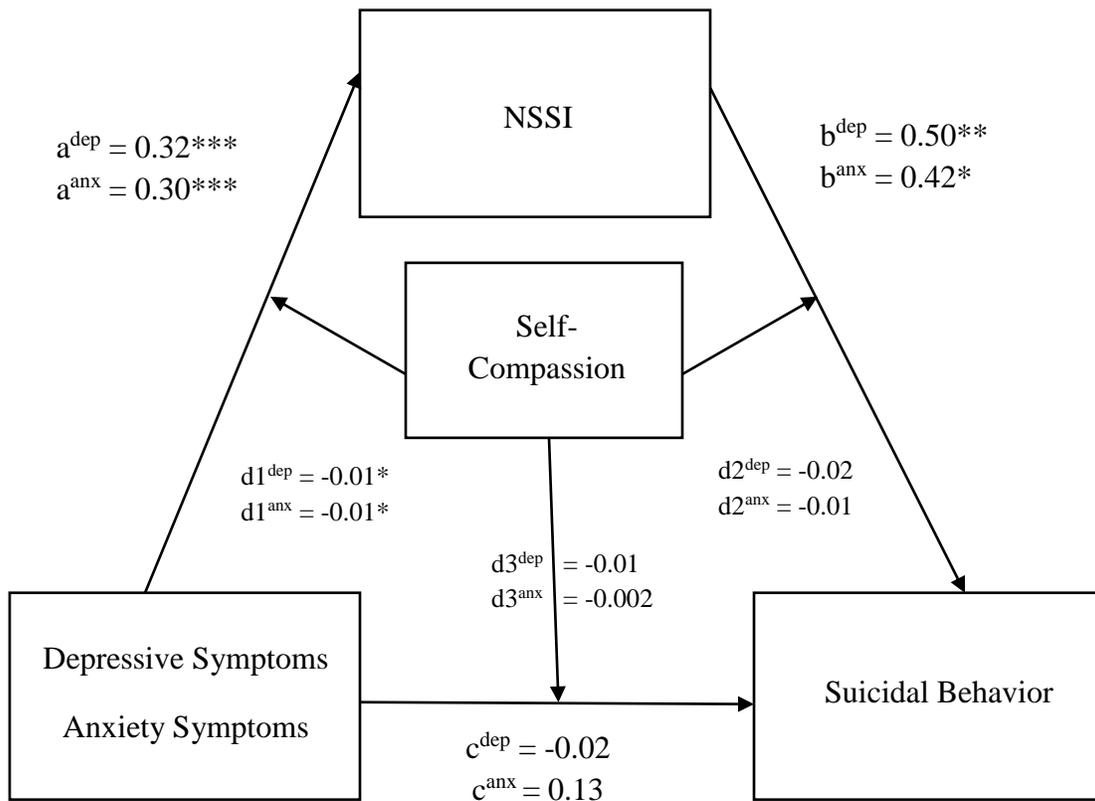
Figure 2. Moderated Mediation Model: Depressive and Anxiety Symptoms and Suicidal Behavior: Conditional Indirect Effects of NSSI and Self-Compassion

Note: a^{dep}/a^{anx} = indirect effect (depressive symptoms/anxiety symptoms related to non-suicidal self-injury), b^{dep}/b^{amx} = indirect effect (NSSI related to suicidal behavior) $d1^{dep}/d1^{anx}$ = conditional effect (self-compassion on the relation between depressive symptoms/anxiety symptoms and non-suicidal self-injury), $d2^{dep}/d2^{anx}$ = conditional effect (self-compassion on the relation between depressive symptoms/anxiety symptoms and suicidal behavior), $d3^{dep}/d3^{anx}$ = conditional effect (self-compassion on the relation between non-suicidal self-injury and suicidal behavior), c^{dep}/c^{anx} = direct effect (depressive symptoms/anxiety symptoms related to suicidal behavior).

In a conditional indirect effects model examining the moderating role of total self-compassion score on all paths of the anxiety model, self-compassion significantly moderated the relation of anxiety symptoms and NSSI (β=-.01, SE=.01, *t*(315)=-2.50, *p*<.01), but did not significantly moderate the relation between NSSI and suicidal behavior (β=-.01, SE=.01, t(315)=-1.03, *p*=.31), or between anxiety symptoms and suicidal behavior (β=-.002, SE=.004, t(315)=-.52, *p*=.60). Self-compassion operates as a protective factor on the "a" path of the model, weakening the association between anxiety symptoms and NSSI, consequently reducing risk for suicidal behavior (See Table 6) (Figure 2).

Table 6

Conditional Indirect Effects of Self-Compassion: Anxiety Symptom Model

Path	B(SE)	t	95% BCa CI
a (Depressive Symptoms x Self-Compassion → NSSI)	-.01(.01)	-2.50**	[-.02, -.003]
b (NSSI x Self-Compassion → Suicidal Behavior)	-.01(.01)	-1.03	[-.03, .01]
c (Depressive Symptoms x Self-Compassion → Suicidal Behavior)	-.002(.004)	.52	[-.01, .01]

Note: Suicidal Behavior = Suicidal Behavior Questionnaire – Revised, Anxiety Symptoms = Beck Anxiety Inventory, NSSI = Self-Harm Inventory, Self-Compassion = Self-Compassion Scale. *Note*: Unstandardized regression coefficients are reported. Bootstrap sample size = 5,000. BCa CI = Bias-corrected and accelerated confidence interval; CI values not containing 0 are considered significant. **p<.01*

Prior to examining the individual subscales of self-compassion as potential moderators, we examined their correlations to ensure they were not collinear. The three constructs were highly correlated, but did not have correlations greater than .80 (Field, 2005). Self-kindness was significantly positively related to common humanity (r=.55, p<.001) and mindfulness (r=.69, p<.001), and common humanity was positively related to mindfulness (r=.60, p<.001). When the subscales of self-compassion were examined as independent moderators in the depressive symptom model, self-kindness moderated the depressive symptom-NSSI linkage (β=-.02, SE=.004, t(315)=-4.05, p<.001), but did not significantly moderate the relation between NSSI and suicidal behavior or between depressive symptoms and suicidal behavior. Common humanity moderated the depressive symptom-NSSI linkage (β=-.01, SE=.01, t(315)=-2.19, p=.03) and the relation between depressive symptoms and suicidal behavior (β=.01, SE=.01, t(315)=2.29, p=.02), but did not significantly moderate the relation between NSSI and suicidal behavior. Mindfulness did not significantly moderate any paths of the model (See Table 7) (Figure 3).

Table 7

Conditional Indirect Effects of Self-Compassion Subscales: Depressive Symptom Model

Path	B(SE)	t	95% BCa CI
Self-Kindness			
a (Depressive Symptoms x Self-Kindness → NSSI)	-.02 (.004)	-4.05***	[-.02, -.01]
b (NSSI x Self-Kindness → Suicidal Behavior)	.02 (.01)	-1.37	[-.04, .01]
c (Depressive Symptoms x Self-Kindness → Suicidal Behavior)	.01 (.004)	1.62	[-.001, .01]
Common Humanity			
a (Depressive Symptoms x Common Humanity → NSSI)	-.01 (.01)	-2.19*	[-.02, -.001]
b (NSSI x Common Humanity → Suicidal Behavior)	.01 (.01)	2.29*	[-.04, .01]
c (Depressive Symptoms x Common Humanity → Suicidal Behavior)	-.02 (.01)	-1.37	[.002, .02]
Mindfulness			
a (Depressive Symptoms x Mindfulness → NSSI)	-.01 (.006)	-1.83	[.07, -.02]
b (NSSI x Mindfulness → Suicidal Behavior)	.01 (.01)	.75	[-.02, .04]
c (Depressive Symptoms x Mindfulness → Suicidal Behavior)	-.002 (.01)	-.38	[-.01, .01]

Note. Suicidal Behavior = Suicidal Behavior Questionnaire – Revised, Depressive Symptoms = Beck Depression Inventory- 2 nd Edition, NSSI = Self-Harm Inventory, Self-Compassion = Self-Compassion Scale ** p<.05, ** p<.01, *** p<.001*

Figure 3. Moderated Mediation Model: Depressive Symptoms and Suicidal Behavior:
Conditional Indirect Effects of NSSI and Self-Kindness, Common Humanity, and Mindfulness

Note: $a^{sk}/a^{ch}/a^{m}$ = indirect effect (depressive symptoms related to non-suicidal self-injury),
$b^{sk}/b^{ch}/b^{m}$ = indirect effect (NSSI related to suicidal behavior), $d1^{sk}/d1^{ch}/d1^{m}$ = conditional effect
(self-kindness/common humanity/mindfulness on the relation between depressive symptoms and
non-suicidal self-injury), $d2^{sk}/d2^{ch}/d2^{m}$ = conditional effect (self-kindness/common
humanity/mindfulness on the relation between depressive symptoms and suicidal behavior,
$d3^{sk}/d3^{ch}/d3^{m}$ = conditional effect (self-kindness/common humanity/mindfulness on the relation
between non-suicidal self-injury and suicidal behavior), $c^{sk}/c^{ch}/c^{m}$ = direct effect (depressive
symptoms related to suicidal behavior).

When the subscales of self-compassion were examined independently in the anxiety symptom model, self-kindness moderated the anxiety symptom-NSSI linkage (β=-.01, SE=.004, t(315)=-3.27, p<.01), but did not significantly moderate the relations between NSSI and suicidal behavior or anxiety symptoms and suicidal behavior. Similarly, common humanity moderated the anxiety symptom-NSSI linkage (β=-.01, SE=.005, t(315)=-2.15, p=.03), but did not significantly moderate the relation between NSSI and suicidal behavior, or anxiety symptoms and suicidal behavior. Mindfulness did not significantly moderate any paths of the model (See Table 8) (Figure 4).

Table 8

Conditional Indirect Effects of Self-Compassion Subscales: Anxiety Symptom Model

Path	B(SE)	t	95% BCa CI
Self-Kindness			
a (Anxiety Symptoms x Self-Kindness → NSSI)	-.01 (.004)	-3.27**	[-.02, -.01]
b (NSSI x Self-Kindness → Suicidal Behavior)	-.01 (.01)	-1.29	[-.04, .01]
c (Anxiety Symptoms x Self-Kindness → Suicidal Behavior)	-.0001 (.004)	-.03	[-.001, .01]
Common Humanity			
a (Anxiety Symptoms x Common Humanity → NSSI)	-.01 (.005)	-2.15*	[-.02, -.001]
b (NSSI x Common Humanity → Suicidal Behavior)	.007 (.01)	-.56	[-.04, .01]
c (Anxiety Symptoms x Common Humanity → Suicidal Behavior)	-.003 (.005)	.26	[.002, .02]
Mindfulness			
a (Anxiety Symptoms x Mindfulness → NSSI)	-.01 (.01)	-.90	[.07, -.02]
b (NSSI x Mindfulness → Suicidal Behavior)	.001 (.01)	.10	[-.02, .04]
c (Anxiety Symptoms x Mindfulness → Suicidal Behavior)	-.003 (.01)	-.53	[-.01, .01]

Note. Suicidal Behavior = Suicidal Behavior Questionnaire – Revised, Anxiety Symptoms = Beck Anxiety Inventory, NSSI = Self-Harm Inventory, Self-Compassion = Self-Compassion Scale
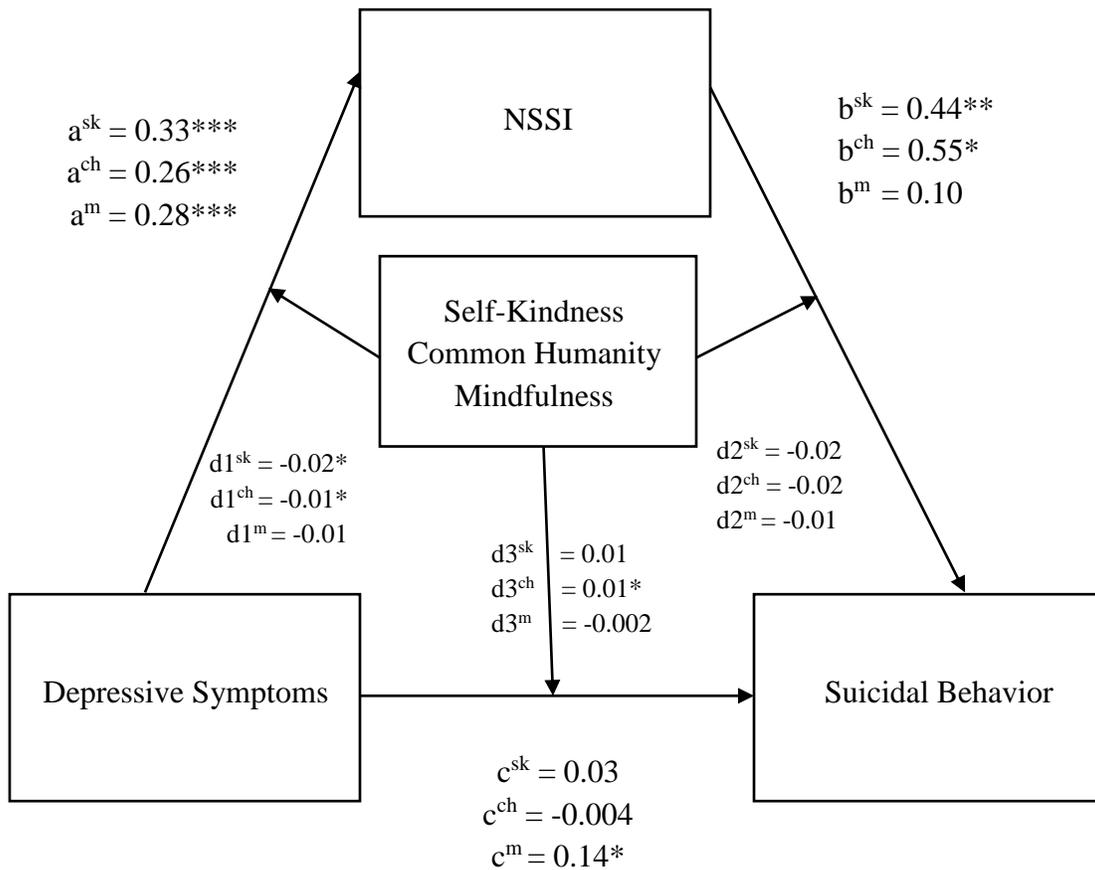
*p<.05, ** p<.01, *** p<.001
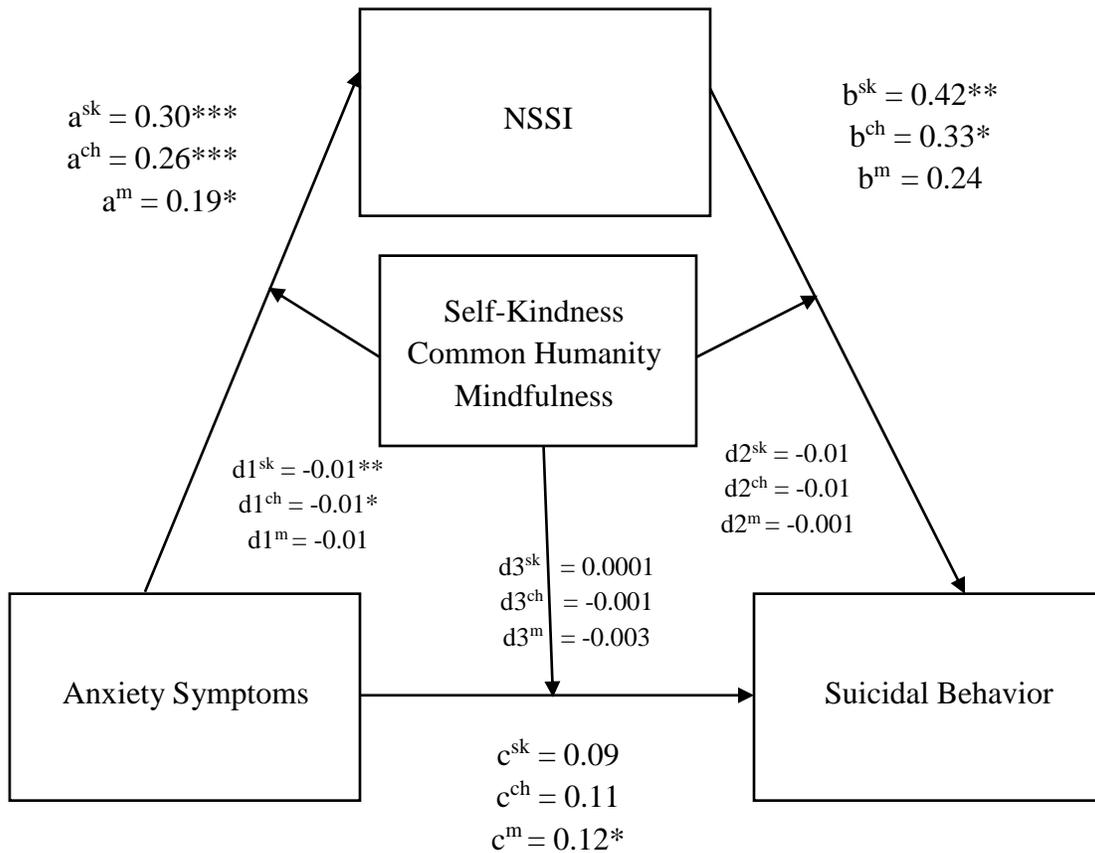
Figure 4. Moderated Mediation Model: Anxiety Symptoms and Suicidal Behavior: Conditional Indirect Effects of NSSI and Self-Kindness, Common Humanity, and Mindfulness

Note: $a^{sk}/a^{ch}/a^m$ = indirect effect (anxiety symptoms related to non-suicidal self-injury), $b^{sk}/b^{ch}/b^m$ = indirect effect (NSSI related to suicidal behavior), $d1^{sk}/d1^{ch}/d1^m$ = conditional effect (self-kindness/common humanity/mindfulness on the relation between anxiety symptoms and non-suicidal self-injury), $d2^{sk}/d2^{ch}/d2^m$ = conditional effect (self-kindness/common humanity/mindfulness on the relation between anxiety symptoms and suicidal behavior, $d3^{sk}/d3^{ch}/d3^m$ = conditional effect (self-kindness/common humanity/mindfulness on the relation between non-suicidal self-injury and suicidal behavior), $c^{sk}/c^{ch}/c^m$ = direct effect (anxiety symptoms related to suicidal behavior).

CHAPTER 4

DISCUSSION

Given that suicide is a significant public health concern, and that college students

represent a population at heightened risk, the identification of risk factors (e.g., psychopathology,

NSSI), as well as protective factors (e.g., self-compassion), is imperative. In our collegiate

sample, we examined the associations between symptoms of anxiety and depression and suicide-

related behavior, as well as the potential mediating role of non-suicidal self-injury. Further, we

examined the potential moderating role of self-compassion on these mediated relations; that is,

between psychopathology and NSSI, between NSSI and suicidal behavior, and between

psychopathology and suicidal behavior.

In terms of risk factors related to suicidal behavior, previous research documents the

robust relation between symptoms of depression and anxiety and suicide risk, which we

replicated in our study (Bertolete et al., 2003; Sareen et al., 2005); among our sample of college

students, as symptoms of anxiety and depression increase in severity, suicide risk is exacerbated.

Our hypothesis that NSSI would be significantly positively associated with suicidal behavior was

also supported, consistent with previous literature positing NSSI as a predictor of suicidal

behavior (Nock et al., 2006; Stanley et al., 1992; Whitlock et al., 2012). Although NSSI differs

from suicidal behavior given its absence of lethal intent, the two are still strongly associated, and

risk for both appears to be linked to psychopathology. Indeed, our hypothesis that symptoms of

anxiety and depression would be significantly positively associated with NSSI was also

supported, consistent with previous literature (Bentley et al., 2015; Chartrand et al., 2012). This

positive association may be due to the fact that NSSI is often employed as a maladaptive form of

emotional regulation (Bentley et al., 2014). Yet, although NSSI may temporarily relieve

negative emotions, it is not an effective form of problem-solving, meaning symptoms of anxiety and depression still remain despite temporary distraction from emotional pain (Trepal, Wester, & Merchant, 2015). Persons with anxiety and depression may also utilize NSSI as a form of social signaling, expressing distress to others and attempting to "bridge the gap" of social isolation often associated with depression and anxiety (Hankin & Abela, 2011).

Self-compassion was inversely related to symptoms of anxiety and depression, consistent with existing research documenting its salutary association with psychopathology (Hall et al., 2013; Sirois et al., 2014). Additionally, self-compassion was negatively related to engagement in NSSI, a premise not previously explored. Our findings suggest that self-compassion is related, in a protective manner, to decreased engagement in NSSI, perhaps as a result of the self-soothing mechanisms of self-compassion which, like NSSI, serve to diffuse the distress often accompanying anxiety and depression (Neff, 2012). Our results also support the limited literature suggesting that self-compassion ameliorates suicide risk, as self-compassion was negatively related to suicide-related behavior. Self-compassion may increase psychological resilience, generally, as documented by its protective role across an array of mental health outcomes, perhaps via its impact on cognitive-emotional, behavioral (e.g., NSSI) and physiological (e.g., activation of self-soothing processes) systems (Neff, 2003). As well, self-compassion may operate in opposition to other factors predictive of suicide risk, including emotion dysregulation and self-criticism (Donaldson et al., 2000; Leary et al., 2007), by promoting a more positive view of the self (self-kindness) and by acknowledging and mindfully distancing themselves from distressing thoughts.

In multivariate analyses, NSSI mediated the relation between symptoms of anxiety and depression and suicidal behavior, such that greater levels of psychopathology were related to

greater engagement in NSSI and, in turn, to more suicidal behavior. Previous research documents the direct association between symptoms of anxiety and depression and suicidal behavior (Bertolote, 2003; Sareen et al., 2005), as do our current findings; however, we expand the existing literature by documenting the role of NSSI as a potential point of linkage between symptoms of anxiety and depression and suicidal behavior.

According to the gateway theory of NSSI and suicidal behavior (Linehan, 1986; Whitlock et al., 2004), NSSI and suicide-related behavior exist on a continuum of self-injurious and increasingly lethal behaviors. The gateway theory posits that suicide-related behavior develops after engagement in NSSI, as repetitive engagement in NSSI may lead to "more extreme" self-injury, meaning suicide attempts and death by suicide. As well, this progression along the continuum of suicidality, from NSSI to suicidal behavior, is representative of Joiner's notion of acquired capacity for suicide, in which repetitive exposure to harm and pain (e.g., NSSI) increasingly permits engagement in lethal self-harming behaviors (Joiner, 2005).

As our findings suggest, anxiety and depression represent at least one potential pathway to engagement in NSSI (Bentley et al., 2004), with other precursors for NSSI including environmental (e.g., childhood abuse) and psychosocial factors (e.g., social contagion) (Ballard et al., 2010; Jarvi et al., 2013). Noting the developmental nature of many of these risk factors, and the transitional age group of most college students, provides some insight into the vulnerability of college students, who are often unequipped to deal with emotional difficulties and who are often separated from traditional support systems (Dyson & Renk, 2006). In terms of this pathway, students experiencing symptoms of anxiety or depression may engage in NSSI to distract from or cope with negative emotions and ruminative thoughts (Bentley et al., 2014). This process of "movement," from psychopathological symptoms to engagement in NSSI, may

continue to progress, resulting in suicidal behavior (Whitlock et al., 2012). Ultimately, individuals who experience symptoms of anxiety and depression may engage in NSSI as a form of affective regulation to alleviate their emotional suffering; such actions may provide temporary relief, but can eventually result in additional sadness, guilt, and anxiety (Klonsky, 2007; Nixon, Cloutier, & Aggarwal, 2002). As well, this repeated engagement in NSSI does not decrease symptoms of anxiety and depression but, rather, increases negative emotions over time and increases risk for suicidal behavior, as up to 70% of individuals who engage in repetitive NSSI attempt suicide over the course of their lifetime (Nock et al., 2006).

In moderated mediation models, and in support of hypotheses, self-compassion significantly moderated the relation between depressive symptoms and NSSI, and between anxiety symptoms and NSSI. That is, the presence of self-compassion weakened the association between symptoms of anxiety and depression and NSSI, suggesting a buffering effect that occurs in the transition from psychopathology to self-harm, and ultimately decreasing suicide risk. This beneficial effect may occur because self-compassion functions as an adaptive coping mechanism, effectively decreasing emotional distress and precluding the need to engage in NSSI as a maladaptive form of coping. As noted previously, self-compassion is conceptualized as a sense of kindness and understanding toward oneself, an acceptance of negative experiences and "an emotionally positive self-attitude" (Neff, 2003). Given that NSSI is often employed as a form of emotion regulation and distraction from painful thoughts, engaging in self-compassion may allow a person to accept and process negative feelings and emotions, rather than simply distracting from such feelings via self-injury. Importantly, engaging in self-compassion as a coping strategy, rather than NSSI, appears to promote positive emotions and counteract

psychophysiological reactions to stress, whereas engaging in NSSI produces more negative emotions over time (Klonsky, 2007; Nixon et al., 2002).

Beyond exploring overall self-compassion (i.e., total score) as a protective factor, we also examined the three subscales of self-compassion (i.e., self-kindness, common humanity, mindfulness) to understand more thoroughly how the components of self-compassion operate, perhaps differentially or with unique clinical utility, in the context of psychopathology, self-injury and suicide risk. First, self-kindness moderated the linkage between depressive symptoms and NSSI, and between anxiety symptoms and NSSI. Self-kindness refers to an understanding and accepting approach to self-appraisal, as opposed to self-critique (Neff, 2003) which is, in past research, related to engagement in NSSI (Hooley & St. Germain, 2013). Thus, our findings suggest that being kind to the self, despite the poor self-worth and feelings of self-doubt that often accompany depression and anxiety, may lessen the likelihood of transitioning from being psychologically symptomatic to self-injuring.

Somewhat similarly, common humanity moderated the depression-NSSI linkage, the depression-suicide linkage, and the anxiety-NSSI linkage. Common humanity refers to the perception that one's experiences are universal to the human experience, rather than the perception that one is isolated, alienated or suffering alone (Neff, 2003). Common to both anxiety and depression are feelings of social disconnectedness, loneliness, and perceived isolation (Mushtaq, Shoib, Shah, & Mushtaq, 2014). Thus, it may be that the clinical utility of common humanity arises in providing a cognitive framework which prompts individuals to recognize that they are not alone; even in our suffering, we can take comfort that others have had similar experiences, and have recovered and even thrived as a result (Kent, Rivers, & Wrenn, 2015; Neff & Dahm, 2014; Zeller, Yuval, Nitzan-Assayag, & Bernstein, 2015). Resolving such

existential isolation and, therefore, distress, may also help to facilitate perceived and actual social support, for when an anxious or depressed person comes to understand that they have commonalities with others, even in their suffering, they may begin to reintegrate with their interpersonal networks. In fact, self-compassion has been found to strengthen interpersonal functioning (Crocker & Canevello, 2008; Neff & Beretvas, 2012). Given that perceived social isolation, even existential isolation (Pinel, Long, Murdoch, & Helm, 2010; Yalom, 1980), is predictive of negative mental health outcomes and engagement in NSSI (Cacioppo & Hawkley, 2009; Wolff, Frazier, Esposito-Smythers, Burke, Sloan, & Spirito, 2013), addressing interpersonally-relevant negative cognitions may alleviate distress and, as a result of this decreased sense of isolation and distress, there may no longer be any need to engage in non-suicidal self-injury.

Finally, mindfulness did not significantly moderate any paths of either the anxiety or depressive symptom model. Mindfulness refers to an awareness of, but a distancing from, but not resisting or avoiding, one's distressful thoughts and feelings (Neff, 2003), and has demonstrated clinical utility in addressing anxiety and depression (Neff, 2003); as such, our findings seem contradictory to emerging literature suggesting that mindfulness is therapeutically beneficial across an array of mental health outcomes (Chiesa & Serretti, 2011), including NSSI and suicidal behavior (Heath, Carsley, De Riggi, Mills, & Mettler, 2016; Luoma & Villatte, 2012). One reason for the non-significance of our mindfulness-based findings may be due to the differences between mindfulness and the other sub-components of self-compassion. Whereas self-kindness and common humanity both involve cognitively reframing one's mindset to direct kindness toward oneself and recognizing the universality of one's experiences, mindfulness requires active engagement, as individuals must consciously acknowledge, yet distance

themselves from, negative thoughts and feelings, so as to avoid over-identification with negative emotions.

It may be, in contrast to the effects of self-kindness and common humanity, that the effect of mindfulness on symptoms of psychopathology is only effective if "done properly," perhaps by following a protocol for a mindfulness-focused, evidence-based intervention or being guided by a professional. It should be noted that much of the research on the effectiveness of mindfulness (e.g., beneficial impact on symptoms of depression and anxiety) is in the context of therapy trials where individuals are guided through manualized exercises and interventions, and where progress is tracked and feedback provided, over time (Hofmann, Sawyer, Witt, & Oh, 2010). Perhaps, in our study, which relied on self-report measures of mindfulness, and which did not attempt to teach or manipulate mindfulness, there is not enough structure or standardization to manifest a significant effect.

Intuitively, and in support of etiological theories of NSSI, it may also be that individuals with anxiety and depression who engage in NSSI are avoiding and distracting from their negative emotions, thereby engaging in non-acceptance, which is contrary to the processes of mindfulness (Gratz & Roemer, 2004; Gross, 2002). Further, for a person who is depressed or anxious, to mindfully focus on negative emotions may be counterproductive unless adequately supervised or trained, as acknowledgment and "releasing" of negative emotions may turn, instead, to a maladaptive and ruminative focus rather than a calming one (Lustyk, Chawla, Nolan, & Marlatt, 2009; Shapiro, 1992). Indeed, in previous research, among a sample of college students, rumination mediated the relation between self-compassion and depression and anxiety (Raes, 2010). Additionally, mindfulness-based stress reduction training resulted in increased mindfulness and decreased rumination and depression, among a non-clinical sample of adults

69

(Deyo, Wilson, Ong, & Koopman, 2009). In sum, mindfulness did not buffer risk for NSSI or suicide-related behavior in our psychopathology symptom-based model, perhaps due to a lack of "training" in appropriate implementation of mindfulness, as well as the potential risk for ruminative interference.

Also important to explore are our lack of significant findings for total self-compassion score as a moderator of any model pathway with suicide risk as the outcome, despite the existence of significant bivariate correlations with suicide risk and moderation occurring on non-suicide (NSSI) pathways. To begin, self-compassion did not significantly moderate the relation between symptoms of psychopathology and suicide. Although preliminary evidence suggests that higher levels of self-compassion are related to decreased risk for suicide, as did our bivariate results (Bryan et al., 2015; Tanaka et al., 2011; Tesh et al., 2013), we were unable to extend these findings to a mediation model, perhaps due to the fact that self-compassion is more salient at higher levels of distress (Leary et al., 2007; Neff, 2003). Given that the current sample was a non-clinical sample, it may be that, although self-compassion is inversely related to all of the variables within our study, the levels of distress in our sample were not high enough for the clinical utility of self-compassion to operate in a fashion that significantly decreased suicide risk.

As well, among individuals who are already engaging in NSSI, self-compassion does not significantly buffer risk for suicide. It may be that, at the point of engaging in NSSI, self-injury is reinforced as an effective means of coping, and may become an acquired capability, per the Interpersonal Theory of Suicide (IPTS) (Joiner, 2005), making the transition to more-severe and potentially lethal forms of self-injury along the suicidality continuum a greater likelihood. Such perceptual changes regarding death and pain may be a stronger influence than the beneficial effect of self-compassion; for instance, individuals who are already engaging in NSSI may be at

70

a point of severity and conditioning, where positive cognitive-emotional factors have limited impact (Fredrickson, 2004). In fact, compared to the other components of the IPTS, acquired capability is the most difficult to treat clinically because a clinician cannot modify an individual's history of self-harm (Van Orden et al., 2010). It may also be that some persons, perhaps because of dispositional characteristics, such as affect, or because of symptoms of depression and anxiety, are unable to effectively engage in self-compassion. As examples, individuals who are high in neuroticism report lower levels of self-compassion (Neff, Rude, & Kirkpatrick, 2006; Thurackal, Corveleyn, & Dezutter, 2016), and persons with depression and anxiety report that it might be difficult to manifest feelings of compassion, in part due to the negative experiences associated with their illness (Pauley & McPherson, 2010). Given that individuals who engage in NSSI have higher levels of neuroticism (Allroggen et al., 2014), it may be that self-compassion is stifled and, indeed, that individuals may feel as if their illness experiences make them unable to manifest or benefit from self-kindness. Yet, as we report in another study, of US veterans, it is precisely at these difficult times that self-compassion should be activated and of maximum usefulness, suggesting that – if "unlocked" – and promoted, self-compassion might be a powerful tool in the prevention of suicide (Rabon, Brooks, Kaniuka, Sirois, & Hirsch, submitted for publication).

Limitations and Future Research

Our findings must be interpreted in the context of a few limitations. To begin, the cross-sectional design of our study precludes examination of causality; for instance, we are unable to discern whether symptoms of anxiety and depression truly preceded NSSI and suicidal behavior, or whether NSSI was predictive of suicidal behavior. However, as we relied on the extant theoretical and empirical literature to guide the design of our models, we are more confident of

71

their directionality; for example, symptoms of anxiety often present before engagement in NSSI, as does negative emotionality (Victor & Klonsky, 2013) and engagement in NSSI often precedes suicide-related behavior (Whitlock et al., 2012). Yet, future prospective and longitudinal research is necessary to assess the progressive impact of symptoms of psychopathology, over time, on engagement in NSSI, and the action of NSSI as a gateway to subsequent suicidal behavior.

Although the use of our sample was justified, given the higher rates of suicidal behavior among college students than in the general population, our use of a predominantly White, female sample may limit generalizability of findings. The prevalence of our variables of interest (i.e., NSSI, suicidal behavior) differs greatly across a variety of demographic characteristics, including age, sex, and ethnicity. That is, age differences exist in risk for NSSI and suicide (Bozzay et al., 2014), and sex and ethnic/racial differences exist in risk for mood disorders, NSSI, and suicidal behavior (Barrocas et al., 2012; Lloyd-Richardson et al., 2007; McLean et al., 2011). To address this limitation in our own study, we covaried these variables. However, future research is needed, with diverse samples, to determine if risk and protective factors for suicide operate similarly across populations.

Finally, we utilized self-report measures, which may limit the accuracy of our measurement, due to such methodological issues as socially-desirable reporting styles, low external validity, and the potential influence of participants' mood (Huprich, Bornstein, & Schmitt, 2011). Despite this, we utilized "gold standard" assessments in our study, all of which have sufficient psychometric properties. Future research using objective measures (e.g., medical records) is needed to improve validity. As well, technology-based assessments (e.g., ecological

moment surveying) could be utilized to assess symptoms of psychopathology or engagement in NSSI in the moment rather than retrospectively via surveys (Donker et al., 2013).

Implications

Our results provide continuing evidence of the struggles that college students have with mental health. Although the students within our sample reported lower levels of depression, NSSI, and suicidal behavior, compared to other collegiate samples (Beck, 1996; Latimer et al., 2009), symptoms of these mental health issues were still present within our sample, often at higher rates than for the general US population (e.g., depression) (Arnau, Meagher, Norris, & Bramson, 2001) and, in the case of anxiety, at higher rates than other collegiate samples (Creamer et al., 1995). Our findings also lend support to the gateway theory of suicide, as NSSI significantly mediated the psychopathology symptom-suicide relation, illuminating a point-of-transition and potential intervention, in the suicide continuum. Finally, we provide preliminary evidence for the utility of self-compassion in the treatment of symptoms of psychopathology and self-harm, as self-compassion buffered the depression/anxiety symptom-NSSI linkage. As such, we suggest that interventions which 1) screen for anxiety and depression, 2) target NSSI, and/or 3) bolster self-compassion, may be effective deterrents of suicide risk and can be delivered at the individual, campus and community levels.

To begin, screening for symptoms of depression and anxiety, and for the presence of NSSI, may help to identify individuals at increased risk for suicidal behaviors, providing a point of action for college campuses and clinicians alike. For example, student health and counseling centers could use screening tools such as the Patient Health Questionnaire (PHQ-9; Kroenke, & Spitzer, 2002) and the Generalized Anxiety Disorder 7-Item (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006), to identify at-risk students. Additionally, college campuses may

73

utilize brief self-harm screening questions (e.g., Have you ever had thoughts of purposely hurting yourself without wanting to die?) to identify students at risk for NSSI (Klonsky & Olino, 2008), or the Suicide Behaviors Questionnaire – Revised, which assesses history of and risk for suicidal behavior (Osman et al., 2001). Once identified via screening procedures, our findings may also inform consequent clinical interventions with at-risk students.

As in previous research, and as suggested by our findings, therapeutically targeting symptoms of anxiety and depression, as well as engagement in NSSI, may decrease risk for suicidal behaviors. Evidenced-based interventions, such as Cognitive Behavioral Therapy and Acceptance and Commitment Therapy, may lower anxiety/depression and, consequently, may set in motion a protective effect that extends to a lessening of NSSI and decreased suicide risk (Driessen & Hollon, 2010; Kanter, Baruch, & Gaynor, 2006; Otte, 2011).

In terms of addressing engagement in NSSI, Problem Solving Therapy (e.g., coping skills training and psychoeducation regarding emotion regulation), Cognitive Behavioral Therapy (e.g., identifying maladaptive thoughts and negative self-schemas) and Dialectical Behavior Therapy (e.g., skills training, contingency management, validation and acceptance practices) are all efficacious interventions (Gonzales & Bergstrom, 2013; Stanley, Brodsky, Nelson, & Dulit, 2007). Common to these interventions is their focus on 1) adapting one's relationship with negative cognitive patterns, and 2) building positive coping skills, while decreasing reliance on maladaptive coping mechanisms. As negative thoughts often accompany self-injury, cognitive techniques that help an individual to restructure their negative appraisals (e.g., fear of worst happening, feel like a complete failure) can decrease engagement in NSSI. Additionally, behavioral activation and psychosocial skill building (e.g., interpersonal effectiveness, distress tolerance, emotion regulation) can be used to facilitate engagement in adaptive and positive

74

behaviors and events (e.g., spending time with friends and family, exercising, engaging in social activities) as a way to address symptoms of anxiety and depression, instead of engaging in the use of NSSI as a maladaptive means of coping (Hopko, Sanchez, Hopko, Dvir, & Lejuez, 2003). Encouraging healthy social relationships may be important for students with depression and anxiety, as NSSI is often used as a form of social signaling when distressed (Nock, 2008; Wedig & Nock, 2007). Helping clients to strengthen their ties to social support networks, and encouraging them to engage in social activities that increase access to reinforcing experiences and relationships, may help to decrease symptoms of psychopathology, as well as self-injuring and suicidal sequelae (Christoffersen, Mohl, DePanfilis, & Vammen, 2015; Kleiman & Liu, 2014).

Finally, therapeutically bolstering self-compassion may decrease risk for engagement in NSSI, ultimately reducing risk for suicide-related behavior. In our bivariate analyses, self-compassion was beneficially related to all other study variables, including depression, anxiety, NSSI and suicidality and, although these effects did not persist in multivariate models, our findings suggest that the promotion of self-compassion may be beneficial for mental well-being. Therapies that teach self-compassion, including compassion-focused therapy (CFT) and mindful self-compassion (MSC), may effectively ameliorate symptoms of psychopathology and increase emotional well-being (Gilbert, 2009; Neff & Germer, 2013). More specifically, within our study, self-kindness and common humanity, but not mindfulness, exhibited an ameliorative effect; thus, clinical interventions that target these specific facets of self-compassion (e.g., loving kindness, affectionate breathing, soothing touch, self-compassion letter writing) may be most effective at decreasing suicide risk.

75

Conclusion

Until now, no published research has examined a comprehensive model of suicide risk that attempts to explain the progression from psychopathology to NSSI to suicide-related behavior, accounting for protective factors that might ameliorate such effects. We found that NSSI mediated the relation between symptoms of anxiety/depression and suicide-related behavior, and that self-compassion moderated the psychopathology-NSSI linkage, weakening this pathway. Future prospective, longitudinal research with diverse samples and objective measurement techniques is necessary to substantiate our findings. However, despite the aformentioned limitations, our findings can guide clinical intervention and prevention initiatives; for instance, screening for and therapeutically targeting anxiety, depression, and NSSI, as well as therapeutically bolstering self-compassion, may be effective strategies to decrease suicide risk among young adults attending college.

REFERENCES

Adams, D. M., Overholser, J. C., & Spirito, A. (1994). Stressful life events associated with
adolescent suicide attempts. *Canadian Journal of Psychiatry, 39*(1), 43-48. Retrieved from
www.ncbi.nlm.nih.gov/pubmed/8193997

Ahmedani, B. K., & Vannoy, S. (2014). National pathways for suicide prevention and health
services research. *American Journal of Preventative Medicine, 47*(3S2), S222-S228. doi:
10.1016/j.amepre.2014.05.038

Allroggen, M., Kleinrahm, R., Rau, T. A., Weninger, L., Ludolph, A. G., Plener, P. L. (2014).
Nonsuicidal self-injury and its relation to personality traits in medical students. *Journal of
Nervous and Mental Disorders, 202*(4), 300-304. doi: 10.1097/NMD.0000000000000122

American Psychiatric Association [APA]. (2013). *Diagnostic and statistical manual of mental
disorders* (5th ed.). Washington, DC: American Psychiatric Association.

Andover, M. S., Morris, B. W., Wren, A., & Bruzzese, M. E. (2012). The co-occurrence of non-
suicidal self-injury and attempted suicide among adolescents: distinguishing risk factors
and psychosocial correlates. *Child and Adolescent Psychiatry and Mental Health, 6*(11), 1-
7. doi:10.1186/1753-2000-6-11

Arbisi, P. (2001). Review of the Beck Depression Inventory - II. In J.C. Impara & B.S. Plake
(Eds) *The fourteenth mental measurement yearbook*. (pp. 121-123). Lincoln, NB: The
Buros Institute of Mental Measurements.

Arnau, R., Meagher, M., Norris, M., & Bramson, R. (2001) Psychometric evaluation of the Beck
Depression Inventory-II with primary care medical patients. *Health Psychology, 20*, 112–
119. doi: 10.1037//0278-6133.20.2.112

Arria, A. M., O'Grady, K. E., Caldeira, K. M., Vincent, K. B., Wilcox, H. C., & Wish, E. D. (2009). Suicide ideation among college students: A multivariate analysis. *Archives of Suicide Research, 13*(3), 230-246. doi:10.1080/13811110903044351

Arsenault-Lapierre, G., Kim, C., & Turecki G. (2004). Psychiatric diagnoses in 3275 suicides: A meta-analysis. *BMC Psychiatry, 4*(37). doi: 10.1186/1471-244X-4-37

Ballard, E., Bosk, A., & Pao, M. (2010). Invited commentary: Understanding brain mechanisms of pain processing in adolescents' non-suicidal self-injury. *Journal of Youth and Adolescence, 39*, 327-334. doi: 10.1007/s10964-009-9457-1

Barber, C. W., & Miller, M. J. (2014). Reducing a suicidal person's access to lethal means of suicide: A research agenda. *American Journal of Preventative Medicine, 47*(3S2), S264-S272. doi: 10.1016/j.amepre.2014.05.028

Barrios, L. C., Everett, S. A., Simon, T. R., & Brener, N. D. (2000). Suicide ideation among US college students. Associations with other injury risk behaviors. *Journal of American College Health, 48*(5), 229-233. doi: 10.1080/07448480009599309

Barrocas, A. L., Hankin, B. L., Young, J. F., & Abela, J. R. (2012). Rates of nonsuicidal self-injury in youth: Age, sex, and behavioral methods in a community sample. *Pediatrics, 130*(1), 39-45. doi: 10.1542/peds.2011-2094

Batejan, K. L., Jarvi, S. M., & Swenson, L. P. (2015). Sexual orientation and non-suicidal self-injury: A meta-analytic review. *Archives of Suicide Research, 19*(2), 131-150. doi: 10.1080/13811118.2014.957450

Bearman, P. S., & Moody, J. (2004). Suicide and friendships among American adolescents. *American Journal of Public Health, 94*(1), 89-95. doi: 10.2105/ajph.94.1.89

Beautrais, A. L. (2001). Suicides and serious suicide attempts: Two populations or one?

    Psychological Medicine, 31(5), 837-845. doi: https://doi.org/10.1017/S0033291701003889

Beautrais, A. L., (2003). Understanding suicidal behaviour: The suicidal process approach to

    research, treatment and prevention. *Australian and New Zealand Journal of Psychiatry,*

    37(1), 128-129. doi: 10.1046/j.1440-1614.2003.t01-6-01119h.x

Beautrais, A. L., Collings, S. C. D., Ehrhardt, P., & Henare, K. (2005). *Suicide prevention: A*

    review of evidence of risk and protective factors, and points of effective intervention.

    Wellington, New Zealand: Ministry of Health. Retrieved from

    https://www.researchgate.net/publication/230663445

Beck, A. T., Brown, G., Berchick, R. J., Stewart, B. L., & Steer, R. A. (2006). Relationship

    between hopelessness and ultimate suicide: A replication with psychiatric outpatients.

    FOCUS, 4(2), 291-296. doi: http://dx.doi.org/10.1176/foc.4.2.291

Beck, A. T., & Steer, R. A. (1993). *Beck Anxiety Inventory Manual*. San Antonio, TX:

    Psychological Corporation.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *BDI–II, Beck Depression Inventory: Manual*

    (2nd ed.). Boston: Harcourt Brace.

Beiter, R., Nash, R., McCrady, D., Rhoades, M., Linscomb, M. Clarahan, M., & Sammut, S.

    (2015). The prevalence and correlates of depression, anxiety, and stress in a sample of

    college students. *Journal of Affective Disorders, 173*(1), 90-96. doi:

    10.1016/j.jad.2014.10.054

Bentley, H., Cassiello-Robbins, C. F., Vittorio, L., Sauer-Zavala, S., & Barlow, D. H. (2015).The

    association between nonsuicidal self-injury and the emotional disorders: A meta-analytic

    review. *Clinical Psychology Review, 37*, 72-88. doi: 10.1016/j.cpr.2015.02.006

Bentley, K. H., Nock, M. K., & Barlow, D. H. (2014). The four-function model of nonsuicidal self-injury: Key directions for future research. *Clinical Psychological Science, 2*(5), 638-656. doi: 10.1177/2167702613514563

Bergmans, Y., & Links, P. S. (2009). Reducing potential risk factors for suicide-related behavior with a group intervention for clients with recurrent suicide-related behavior. *Annals of Clinical Psychiatry, 21*(1), 17-25. Retrieved from www.ncbi.nlm.nih.gov/pubmed/19239829

Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social Sciences and Medicine, 51*(6), 843-857. doi: 10.1016/S0277-9536(00)00065-4

Berman, A. L., Jobes, D. A., & Silverman, M. M. (2006). *Adolescent suicide: Assessment and intervention* (2nd ed.). Washington, DC: American Psychological Association

Bertolote, J. M., Fleischmann, A., De Leo, D., & Wasserman, D. (2003). Suicide and mental disorders: Do we know enough? *British Journal of Psychiatry, 183*, 382-383. doi: 10.1192/bjp.183.5.382

Bilsker, D., & White, J. (2011). The silent epidemic of male suicide. *British Columbia Medical Journal, 53*(10), 529-534. Retrieved from http://www.bcmj.org/sites/default/files/BCMJ_53_Vol10_suicide.pdf

Blum, R. W., Halcon, L., Beuhring, T., Pate, E., Campbell-Forrester, S., & Venema, A. (2003). Adolescent health in the Caribbean: Risk and protective factors. *American Journal of Public Health, 93*(3), 456-460. Retrieved from www.ncbi.nlm.nih.gov/pubmed/12604495

Blüml, V., Kapusta, N. D., Doering, S., Brähler, E., Wagner, B., & Kersting, A. (2013).

    Personality factors and suicide risk in a representative sample of the German general

    population. *PLoS ONE, 8*(10), e76646. doi:10.1371/journal.pone.0076646

Boardman, A. P., Grimbaldeston, A. H., Handley, C., Jones, P. W., & Willmott, S. (1999). The

    North Staffordshire suicide study: A case-control study of suicide in one health district.

    Psychological Medicine, 29, 27−33. Retrieved from

    https://www.ncbi.nlm.nih.gov/pubmed/10077291

Boden, J. M., Fergusson, D. M., & Horwood, L. J. (2007). Anxiety disorders and suicidal

    behaviours in adolescence and young adulthood: Findings from a longitudinal study.

    Psychological Medicine, 37(3), 431-440. doi: 10.1017/S0033291706009147

Borowsky, I. W., Ireland, M., & Resnick, M. D. (2001). Adolescent suicide attempts: Risk and

    protectors. *Pediatrics, 107*(3), 485-493. doi: 10.1542/peds.107.3.485

Bozzay, M. L., Liu, R. T., & Lkeiman, E. M. (2014). Gender and age differences in suicide

    mortality in the context of violent death: Findings from a multi-state population-based

    surveillance system. *Comprehensive Psychiatry, 55*(5), 1077-1084. doi:

    10.1016/j.comppsych.2014.03.017

Brent, D. A. & Mann, J. J. (2005). Family genetic studies, suicide, and suicidal behavior.

    American Journal of Medicinal Genetics Part C: Seminars in Medical Genetics, 133C(1),

    13-24. doi: 10.1002/ajmg.c.30042

Bresin, K., & Schoenleber, M. (2015). Gender differences in the prevalence of nonsuicidal self-

    injury: A meta-analysis. *Clinical Psychology Review, 38*, 55-64. doi:

    10.1016/j.cpr.2015.02.009

Brezo, J., Paris, J., & Turecki, G. (2006). Personality traits as correlates of suicidal ideation, suicide attempts, and suicide completions: A systematic review. *Acta Psychiatrica Scandinavica, 113*(3), 180-206. doi: 10.1111/j.1600-0447.2005.00702.x

Britton, P. C., Van Orden, K. A., Hirsch, J. K., & Williams, G. C. (2014). Basic psychological needs, suicidal ideation, and risk for suicidal behavior in young adults. *Suicide & Life-Threatening Behavior, 44*(4), 362-371. doi: 10.1111/sltb.12074

Brown, S. & Schiraldi, G. (2003). Reducing sub-clinical symptoms of anxiety and depression: A comparison of two college courses. *Journal of Health Education, 35*(3), 158-164. doi: 10.1080/19325037.2004.10603632

Bryan, C., Graham, E., & Roberge, E. (2015). Living a life worth living: Spirituality and suicide risk in military personnel. *Spirituality in Clinical Practice, 2*(1), 74-78. doi: 10.1037/scp0000056

Busch, K. A., Fawcett, J., & Jacobs, D. (2003). Clinical correlates of inpatient suicide. *Journal of Clinical Psychiatry, 64*, 14-19. doi: 10.4088/JCP.v64n0105

Callanan, V. J., & Davis, M. S. (2012). Gender differences in suicide methods. *Social Psychiatry and Psychiatric Epidemiology, 47*(6), 857-869. doi: 10.1007/s00127-011-0393-5

Canetto, S. S., & Sakinofsky, I. (1998). The gender paradox in suicide. *Suicide and Life-Threatening Behavior, 28*(1), 1-23. doi: 10.1111/j.1943-278X.1998.tb00622.x

Cacioppo, J. T., & Hawkley, L. C. (2009). Perceived social isolation and cognition. *Trends in Cognitive Sciences, 13*(10), 447-454. doi: 10.1016/j.tics.2009.06.005

Cavanagh, J. T., Carson, A. J., Sharpe, M., & Lawrie, S. M. (2003). Psychological autopsy studies of suicide: A systematic review. *Psychological Medicine, 33*(3), 395-405. doi: http://dx.doi.org/10.1017/S0033291702006943

Centers for Disease Control and Prevention [CDC]. (2015). *Suicide and self-inflicted injury*.

Retrieved from http://www.cdc.gov/nchs/fastats/suicide.htm

Chartrand, H., Sareen, J., Toews, M., & Bolton, J. M. (2012). Suicide attempts versus nonsuicidal

self-injury among individuals with anxiety disorders in a nationally representative

sample. *Depression and Anxiety, 29*(3), 172-179. doi: 10.1002/da.20882

Cheasty, M., Clare, A. W., & Collins, C. (1998). Relation between sexual abuse in childhood and

adult depression: Case-control study. *British Medical Journal, 316*(7126), 198-201. doi:

10.1136/bmj.316.7126.198

Chiesa, A. & Serretti, A. (2011). Mindfulness based cognitive therapy for psychiatric disorders: A

systematic review and meta-analysis. *Psychiatry Research*, *187*(3), 441-453. doi:

10.1016/j.psychres.2010.08.011

Christensen, H., Calear, A. L., Van Spijker, B., Gosling, J., Petrie, K., Donker, T., & Fenton, K.

(2014). Psychosocial interventions for suicidal ideation, plans, and attempts: A database of

randomised controlled trials. *BioMed Central Psychiatry, 14*(86), doi:10.1186/1471-244X-

14-86

Christoffersen, M. N., Mohl, B., DePanfilis, D., & Vammen, K. S. (2015). Non-Suicidal Self-

Injury--Does social support make a difference? An epidemiological investigation of a

Danish national sample. *Child Abuse & Neglect, 44*, 106-116. doi:

10.1016/j.chiabu.2014.10.023

Conner, K. R., Houston, R. J., Swogger, M. T., Conwell, Y., You, S., He, H., Gamble, S. A.,... &

Duberstein, P. R. (2012). Stressful life events and suicidal behavior in adults with alcohol

use disorders: Role of event severity, timing, and type. *Drug and Alcohol Dependency,*

120(1-3), 155-161. doi: 10.1016/j.drugalcdep.2011.07.013

Cotton, C. R., Peters, D. K., & Range, L. M. (1995). Psychometric properties of the Suicidal

    Behaviors Questionnaire. *Death Studies, 19*(4), 391-397. doi:

    10.1080/07481189508252740

Creamer, M., Foran, J., & Bell, R. (1995). The Beck Anxiety Inventory in a non-clinical sample.

    Behavior Research and Therapy, 33(4), 477-485.

Crocker, J., & Canevello, A. (2008). Creating and undermining social support in communal

    relationships: The role of compassionate and self-image goals. *Journal of Personality and*

    Social Psychology, 95(3), 555-575. doi: 10.1037/0022-3514.95.3.555

Crosby, A. E., Han, B., Ortega, L. A. G., Parks, S. E., & Gfroerer, J. (2011). Suicidal thoughts and

    behaviors among adults aged > 18 years -- United States, 2008-2009. *Surveillance*

    Summaries, 60(SS13), 1-22. Retrieved from

    http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6013a1.htm

Cuijpers, P., & Smit, F. (2008). Subclinical depression: A clinically relevant condition? *Tijdschrift*

    voor psychiatrie, 50(8), 519-528. doi: http://dx.doi.org/10.1016/S0924-9338(10)70153-X

Cukrowicz, K. C., Schlegel, E. F., Smith, P. N., Jacobs, M. P., Van Orden, K. A., Paukert, A. L.,

    Pettit, J. W., & Joiner, T. E. (2011). Suicide ideation among college students evidencing

    subclinical depression. *Journal of American College Health, 59*(7), 575-581. doi:

    10.1080/07448481.2010.483710

DeAyala, R. J., Vonderharr-Carlson, D. J., & Kim, D. (2005). Assessing the reliability of the Beck

    Anxiety Inventory scores. *Educational and Psychological Measurement, 65*(5), 742-756.

    doi: 10.1177/0013164405278557

deBeurs, E., Wilson, K. A., Chambless, D. L., Goldstein, A. J., Feske, U. (1997). Convergent and

    divergent validity of the Beck Anxiety Inventory for patients with panic disorder and

agoraphobia. *Depression and Anxiety, 6*(4), 140-146. doi: 10.1002/(SICI)1520-6394(1997)6:4<140::AID-DA2>3.0.CO;2-G

Dervic, K., Oquendo, M. A., Grunebaum, M. F., Ellis, S., Burke, A. K., & Mann, J. J. (2004). Religious affiliation and suicide attempt. *American Journal of Psychiatry, 161*(12), 2303-2308. doi: 10.1176/appi.ajp.161.12.2303

Deyo, M., Wilson, K. A., Ong, J., & Koopman, C. (2009). Mindfulness and rumination: Does mindfulness training lead to reductions in the ruminative thinking associated with depression? *Explore, 5*(5), 265-271. doi: 10.1016/j.explore.2009.06.005

Donaldson, D., Spirito, A., & Farnett, E. (2000). The role of perfectionism and depressive cognitions in understanding the hopelessness experienced by adolescent suicide attempters. *Child Psychiatry and Human Development, 31*(2), 99-111. doi: 10.1023/A:1001978625339

Donker, T., Petrie, K., Proudfoot, J., Clarke, J., Birch, M. R., & Christensen, H. (2013). Smartphones for smarter delivery of mental health programs: A systematic review. *Journal of Medical Internet Research, 15*(11), e247. doi: 10.2196/jmir.2791

Drevets, W. C. (2000). Neuroimaging studies of mood disorders. *Biological Psychiatry, 48*(8), 813-829. doi: 10.1016/S0006-3223(00)01020-9

Driessen, E., & Hollon, S. D. (2010). Cognitive behavioral therapy for mood disorders: Efficacy, moderators and mediators. *The Psychiatric Clinics of North America*, *33*(3), 537-555. doi: 10.1016/j.psc.2010.04.005

Drum, D. J., Brownson, C., Burton Denmark, A., & Smith, S. E. (2009). New data on the nature of suicidal crises in college students: Shifting the paradigm. *Professional Psychology: Research and Practice, 40*(3), 213–222. doi: 10.1037/a0014465

Duberstein, P. R., Conwell, Y., Conner, K. R., Eberly, S., & Evinger, J. S., & Caine, E. D. (2004). Poor social integration and suicide: Fact or artifact? A case-control study. *Psychological Medicine, 34*(7), 1331-1337. doi: https://doi.org/10.1017/S0033291704002600

Durant, T., Mercy, J., Krewsnow, M. J., Simon, T., Potter, L., & Hammond, W. R. (2006). Racial differences in hopelessness as a risk factor for a near lethal suicide attempt. *Journal of Black Psychology, 32*(3), 285-302. doi: 10.1177/0095798406290468

Dyson, R., & Renk, K. (2006). Freshmen adaptation to university life: Depressive symptoms, stress, and coping. *Journal of Clinical Psychology, 62*(10), 1231-1244. doi: 10.1002/jclp.20295

Eng, W. & Heimberg, R. G. (2006). Interpersonal correlates of generalized anxiety disorder: Self versus other perception. *Journal of Anxiety Disorders, 20*, 380-387. doi: 10.1016/j.janxdis.2005.02.005

Fergusson, D.M., Beautrais, A.L., & Horwood, L.J. (2003). Vulnerability and resiliency to suicidal behaviours in young people. *Psychological Medicine, 33*, 61–73. doi: 10.1017/S0033291702006748

Field, A. P. (2005). *Discovering statistics using SPSS* (*2nd ed.*). London: Sage.

Flouri, E., Buchanan, A., & Bream, V. (2002). Adolescents' perceptions of their fathers' involvement: Significance to school attitudes. *Psychology in the Schools, 39*(5), 575-582. doi: 10.1002/pits.10055

Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions*, *359*(1449), 1367-1378. doi: 10.1098/rstb.2004.1512

Garand, L., Mitchell, A. M., Dietrick, A., Hijawi, S. P., & Pan, D. (2006). Suicide in older adults: Nursing assessment of suicide risk. *Issues in Mental Health Nursing, 27*(4), 355-370. doi: 10.1080/01612840600569633

Gilbert, P. (2009). *The compassionate mind*. London: Constable.

Gilbert, P., & Irons, C. (2005). Focused therapies and compassionate mind training for shame and self-attacking. In P. Gilbert, (Ed.), *Compassion: Conceptualisations, research and use in psychotherapy* (pp. 263-325). London: Routledge

Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology and Psychotherapy, 13*, 353-379. doi: 10.1002/cpp.507

Goldston, D. B., Molock, S. D., Whitbeck, L. B., Murakami, J. L., Zayas, L. H., & Hall, G. C. (2008). Cultural considerations in adolescent suicide prevention and psychosocial treatment. *American Psychologist, 63*(1), 14-31. doi: 10.1037/0003-066X.63.1.14.

Gonzales, A. H., & Bergstrom, L. (2013). Adolescent non-suicidal self-injury (NSSI) interventions. *Journal of Child and Adolescent Psychiatric Nursing*, *26*(2), 124-130.

Grandclerc, S., De Labrouhe, D., Spodenkiewicz, M., Lachal, J., & Moro, M. R. (2016). Relations between nonsuicidal self-injury and suicidal behavior in adolescence: A systematic review. *PLoS One*, *11*(4), e0153760. doi: 10.1111/jcap.12035

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment, 36*, 41-54. doi: 10.1007/s10862-008-9102-4

Gross, J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology, 39*, 281–291. doi: 10.1017/S0048577201393198

Hall, C. W., Row, K. A., Wuensch, K. L., & Godley, K. R. (2013). The role of self-compassion in physical and psychological well-being. *Journal of Psychology, 147*(4), 311-323. doi: 10.1080/00223980.2012.693138

Haller, H., Cramer, H., Lauche, R., Gass, F., & Dobos, G. J. (2014). The prevalence and burden of subthreshold generalized anxiety disorder: A systematic review. *BioMed Center Psychiatry, 14*, 128. doi: 10.1186/1471-244X-14-128

Hammen, C. (2003). Mood disorders. In I. Weiner (Series Ed.) & T. Widiger and G. Stricker (Vol. Eds.), *Comprehensive Handbook of Psychology: Vol. 8. Clinical Psychology* (pp. 93-118). New York, NY: John Wiley & Sons.

Hamza, C. A., Stewart, S. L., & Willoughby, T. (2012). Examining the link between nonsuicidal self-injury and suicidal behavior: A review of the literature and an integrated model. *Clinical Psychology Review, 32*, 482-495. doi: 10.1016/j.cpr.2012.05.003

Hankin, B. L., & Abela, J. R. (2011). Nonsuicidal self-injury in adolescence: Prospective rates and risk factors in a 2 1/2 year longitudinal study. *Psychiatry Research, 186*(1), 65–70. doi: http://dx.doi.org/10.1016/j.psychres.2010.07.056

Harris, E. C., & Barraclough, B. (1997). Suicide as an outcome for mental disorders. A meta-analysis. *British Journal of Psychiatry, 170*, 205-228. doi: 10.1192/bjp.170.3.205

Hatcher, S., & Stubbersfield, O. (2013). Sense of belonging and suicide: A systematic review. *Canadian Journal of Psychiatry, 58*(7), 432-436. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/23870726

Hawton, K. (2000). Sex and suicide. Gender differences in suicidal behaviour. *British Journal of Psychiatry: The Journal of Mental Science, 177*, 484-485. doi: 10.1192/bjp.177.6.484

Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-based Approach*. New York, NY: The Guilford Press.

Heath, N. L., Carsley, D., De Riggi, M. E., Mills, D., & Mettler, J. (2016). The relationship between mindfulness, depressive symptoms, and non-suicidal self-injury among adolescents. *Archives of Suicide Research*, *16*, 1-15. doi: 10.1080/13811118.2016.1162243

Herman, S., Archambeau, O. G., Deliramich, A. N., Kim, B., Chiu, P. H., & Freuh, B. C. (2011). Depressive symptoms and mental health treatment in an ethnoracially diverse college student sample. *Journal of American College Health, 59*(8), 715-720. doi: 10.1080/07448481.2010.529625

Hirsch, J.K., Chang, E.C., & Jeglic, E.L. (2012). Social problem solving and suicide ideation and attempts: Ethnic differences in the moderating effects of loneliness and life stress. *Archives of Suicide Research, 16*(4), 303-315. doi: 10.1080/13811118.2013.722054

Hirsch, J.K., Conner, K.R., & Duberstein, P.R. (2007). Optimism and suicide ideation among young adult college students. *Archives of Suicide Research, 11*, 177-185. doi: 10.1080/13811110701249988

Hirsch, J.K., & Ellis, J.B. (1996). Differences in life stress and reasons for living among college student suicide ideators and non-ideators. *College Student Journal, 30*, 377–386. Retrieved from http://psycnet.apa.org/psycinfo/1997-07633-008

Hirsch, J. K., Webb, J. R., & Jeglic, E. L. (2011). Forgiveness, depression, and suicidal behavior among a diverse sample of college students. *Journal of Clinical Psychology, 67*(9), 896-906. doi: 10.1002/jclp.20812

Hirsch, J., Wolford, K., LaLonde, S., Brunk, L., & Parker-Morris. (2007). Dispositional optimism as a moderator of the relationship between negative life events and suicide ideation and attempts. *Cognitive Therapy and Research, 31*(4), 533-546. doi: 10.1007/s10608-007-9151-0

Hoertel, N., Franco, S., Wall, M. M., Oquenado, M. A., Kerridge, B. T., Limosin, F., & Blanco, C. (2015). Mental disorders and risk of suicide attempt: A national prospective study. *Molecular Psychiatry, 20*, 718-726. doi: 10.1038/mp.2015.19

Hoffman, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 78(2), 169-183. doi: 10.1037/a0018555

Hooley, J. M. & St. Germain, S. A. (2013). Nonsuicidal self-injury, pain, and self-criticism: Does changing self-worth change pain endurance in people who engage in self-injury. *Clinical Psychological Science*, *2*(3), 297-305. doi: 10.1177/2167702613509372

Hopko, D. R., Sanchez, L., Hopko, S. D., Dvir, S., & Lejuez, C. W. (2003). Behavioral activation and the prevention of suicidal behaviors in patients with borderline personality disorder. *Journal of Personality Disorders*, *17*(5), 460-478. doi: 10.1521/pedi.17.5.460.22970

Horwath, E., Johnson, J., Klerman, G. L., & Weissman, M. M. (1994). What are the public health implications of subclinical depressive symptoms? *Psychiatric Quarterly, 65*(4), 323-337. doi: 10.1007/BF02354307

Horwitz, A. G., Czyz, E. K., & King, C. A. (2015). Predicting future suicide attempts among adolescent and emerging adult psychiatric emergency patients. *Journal of Clinical Child and Adolescent Psychology, 44*(5), 751-761. doi: 10.1080/15374416.2014.910789

Huprich, S. K., Bornstein, R. F., & Schmitt, T. (2011). Self-report methodology is insufficient for improving the assessment and classification of Axis II personality disorders. *Journal of Personality Disorders, 25*, 557-570. doi: 10.1521/pedi.2011.25.5.557

Hurst, C. S., Baranik, L. E., & Daniel, F. (2013). College student stressors: A review of the qualitative research. *Stress & Health, 29*(4), 275-285. doi: 10.1002/smi.2465

IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.

Ibrahim, A. K., Kelly, S. J., Adams, C. E., & Glazebrook, C. (2013). A systematic review of studies of depression prevalence in university students. *Journal of Psychiatric Research, 47*(3), 391-400. doi: 10.1016/j.jpsychires.2012.11.015

In-Albon, T., Ruf, C., & Schmid, M. (2013). Proposed diagnostic criteria for the DSM-5 of nonsuicidal self-injury in female adolescents: Diagnostic and clinical correlates. *Psychiatry Journal, 2013*, 1-12. doi: 10.1155/2013/159208

Israelashvili, M., Gilad-Osovitzki, S. & Asherov, J. (2006). Female adolescents' suicidal behavior and mothers' ways of coping. *Journal of Mental Health, 15*, 533-542. doi:10.1080/09638230600902567

Jacobson, C. M., & Gould, M. (2007). The epidemiology and phenomenology of non-suicidal self-injurious behavior among adolescents: A critical review of the literature. *Archives of Suicide Research, 11*(2), 129-147. doi: 10.1080/13811110701247602

Jarvi, S., Jackson, B., Swenson, L., & Crawford, H. (2013). The impact of social contagion on non-suicidal self-injury: A review of the literature. *Archives of Suicide Research, 17*(1), 1-19. doi: 10.1080/13811118.2013.748404

Joiner, T.E. (2005). *Why people die by suicide*. Cambridge, MA: Harvard University Press.

Joiner, Jr., T. E., Hollar, D., & Van Orden, K. A. (2006). On Buckeyes, Gators, Super Bowl

  Sunday, and the Miracle on Ice: "Pulling Together" is associated with lower suicide rates.

  Journal of Social and Clinical Psychology, 25, 180-196. doi: 10.1521/jscp.2006.25.2.179

Jollant, F., Lawrence, N. S., Giampietro, V., Brammer, M. J., Fullana, M. A., Drapier, D. Courtet,

  P., & Philllips, M. L. (2008). Orbitofrontal cortex response to angry faces in men with

  histories of suicide attempts. *American Journal of Psychiatry, 165*(6), 740-748. doi:

  10.1176/appi.ajp.2008.07081239

Jones, R. A. (1986). *Emile Durkheim: An Introduction to Four Major Works*. Beverly Hills, CA:

  Sage Publications.

Kachur, S., Potter, L., Powell, K., & Rosenberg, M. (1995). Suicide: Epidemiology, prevention,

  treatment. *Adolescent Medicine: State of the Art Review, 6*(2), 171–182. Retrieved from

  http://www.ncbi.nlm.nih.gov/pubmed/10358309

Kadison, R., & DiGeronimo, T. F. (2004). *College of the overwhelmed: The campus mental health

  crisis and what to do about it*. San Francisco, CA: Jossey-Bass

Kanter, J. W., Baruch, D. E., & Gaynor, S. T. (2006). Acceptance and Commitment Therapy and

  behavioral activation for the treatment of depression: Description and comparison. *The

  Behavior Analyst, 29*(2), 161-185. Retrieved from

  https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2223147/

Kazdin, A. E. (2000). *Encyclopedia of psychology (Vol. 8)*. Washington, DC: American

  Psychological Association.

Kendler, K. S., Karkowski, L. M., & Prescott, C. A. (1999). Causal relationship between stressful

  life events and the onset of major depression. *American Journal of Psychiatry, 156*(6),

  837-841. doi: 10.1176/ajp.156.6.837

Kent, M., Rivers, C. T., & Wrenn, G. (2015). Goal-Directed Resilience in Training (GRIT): A

   biopsychosocial model of self-regulation, executive functions, and personal growth

   (eudaimonia) in evocative contexts of PTSD, obesity, and chronic pain. *Behavioral

   Sciences*, *5*(2), 264-304. doi: 10.3390/bs5020264

Kerby, D. S. (2003). CART analysis with unit-weighted regression to predict suicidal ideation

   from Big Five traits. *Personality and Individual Differences, 35*, 249–261. doi:

   10.1016/S0191-8869(02)00174-5

Kerr, P. L., Muehlenkamp, J. J., & Turner, J. M. (2010). Nonsuicidal self-injury: A review of

   current research for family medicine and primary care physicians. *Journal of the American

   Board of Family Medicine, 23*(2), 240-259. doi: 10.3122/jabfm.2010.02.090110

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005).

   Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National

   Comorbidity Survey Replication. *Archives of General Psychiatry, 62*(6), 593-602. doi:

   10.1001/archpsyc.62.6.593.

Kim, C. D., Sequin, M., Therrien, N., Riopel, G., Chawky, N., Lesage, A. D., & Turecki, G.

   (2005). Familial aggregation of suicidal behavior: A family study of male suicide

   completers from the general population. *The American Journal of Psychiatry, 162*(5),

   1017-1019. doi: 10.1176/appi.ajp.162.5.1017

King, M., Semleyen, J., Tai, S. S., Killaspy, H., Osborn, D., Popelyuk, D., & Nazareth, I. (2008).

   A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay

   and bisexual people. *BMC Psychiatry, 8*(70), doi: 10.1186/1471-244X-8-70

Kizilbash, A. H., Vanderploeg, R. D., & Curtiss, G. (2002). The effects of depression and anxiety

    on memory performance. *Archives of Clinical Neuropsychology, 17*(1), 57-67. doi:

    http://dx.doi.org/10.1016/S0887-6177(00)00101-3

Kleiman, E. M., & Liu, R. T. (2014). Prospective prediction of suicide in a nationally

    representative sample: Religious service attendance as a protective factor. *British Journal*

    of Psychiatry: The Journal of Mental Science, 204, 262-266. doi:

    10.1192/bjp.bp.113.128900

Klimstra, T. A., Bleidorn, W., Asendorph, J. B., van Aken, M. A. G., & Denissen, J. J. A. (2013).

    Correlated change of Big Five personality traits across the lifespan: A search for

    determinants. *Journal of Research in Personality, 47*, 768-777.

    doi:10.1016/j.jrp.2013.08.004

Klonsky, E. D. (2007). The functions of deliberate self-injury: A review of the evidence. *Clinical*

    Psychology Review, 27, 226–239. doi:10.1016/j.cpr.2006.08.002

Klonsky, E.D. & Olino, T.M. (2008). Identifying clinically distinct subgroups of self-injurers

    among young adults: A latent class analysis. *Journal of Consulting and Clinical*

    Psychology, 76, 22-27. doi: 10.1037/0022-006X.76.1.22

Krieger, T., Altenstein, D., Baettig, I., Doering, N., & Holtforth, M. G. (2013). Self-compassion in

    depression: Associations with depressive symptoms, rumination, and avoidance in

    depressed outpatients. *Behavior Therapy, 44*, 501-513. doi: 10.1016/j.beth.2013.04.004

Kroenke, K., & Spitzer, R. L. (2002). The PHQ-9: A new depression diagnostic and severity

    measure. *Psychiatric Annals, 32*, 509-521. doi: http://dx.doi.org/10.3928/0048-5713-

    20020901-06

Kuentzel, J. G., Arble, E., Boutros, N., Chugani, D., & Barnett, D. (2012). Nonsuicidal self-injury in an ethnically diverse college sample. *American Journal of Orthopsychiatry, 82*(3), 291-297. doi: 10.1111/j.1939-0025.2012.01167.x.

Kung, H. C., Pearson, J. L., and Liu, X. (2003). Risk factors for male and female suicide decedents ages 15-64 in the United States. Results from the 1993 National Mortality Followback Survey. *Social Psychiatry and Psychiatric Epidemiology, 38*(8), 419-426. doi: 10.1007/s00127-003-0656-x

Kyle, J. (2013). Spirituality: Its role as a mediating protective factor in youth at risk for suicide. *Journal of Spirituality in Mental Health, 15*(1), 47-67. doi: 10.1080/19349637.2012.744620

Lamis, D. A., & Jahn, D. R. (2013). Parent-child conflict and suicide rumination in college students: The mediating roles of depressive symptoms and anxiety sensitivity. *Journal of American College Health, 61*(2), 106-113. doi: 10.1080/07448481.2012.754758

Lakey, C., Hirsch, J.K., Nelson, L., & Nsamenang, S.A. (2014). Effects of contingent self-esteem on depressive symptoms and suicidal behavior. *Death Studies, 38*(9), 563-570. doi: 10.1080/07481187.2013.809035

Latimer, S., Covic, T., Cumming, S. R., & Tennant, A. (2009). Psychometric analysis of the Self-Harm Inventory using Rasch modelling. *BMC Psychiatry, 9*(53). doi: 10.1186/1471-244X-9-53

Leary, M. R., Tate, E. B., Adams, C. E., Allen, A. B., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology, 92*(5), 887-904. doi: http://dx.doi.org/10.1037/0022-3514.92.5.887

Le-Niculescu, H., Levey, D. F., Ayalew, M., Palmer, L., Gavrin, L. M., Jain, N., Winiger, E.... & Niculescu, A. B. (2013). Discovery and validation of blood biomarkers for suicidality. *Molecular Psychiatry, 18*, 1249-1264. doi: 10.1038/mp.2013.95

Leon, A.C., Marzuk, P. M., Tardiff, K., Bucciarelli, A., Piper, T. M., & Galea, S. (2006). Antidepressants and youth suicide in New York City 1999-2002. *Journal of the American Academy of Child and Adolescent Psychiatry, 45*(9), 1054-1058. doi: http://dx.doi.org/10.1097/01.chi.0000227875.12286.a2

Leskin, G. A., & Sheikh, J. I. (2002). Lifetime trauma history and panic disorder: Findings from the National Comorbidity Survey. *Journal of Anxiety Disorders, 16*, 599–603. doi: http://dx.doi.org/10.1016/S0887-6185(02)00125-1

Lester, D., & Bean, J. (1992). Attribution of causes to suicide. *The Journal of Social Psychology, 132*(5), 679-680. doi: 10.1080/00224545.1992.9713907

Linehan, M. M. (1986). Suicidal people. One population or two? *Annals of the New York Academy of Sciences, 487*(1), 16–33. doi: 10.1111/nyas.1986.487.issue-1

Linehan, M. M., Goodstein, J. L., Neilsen, S. L., & Chiles, J. A. (1983). Reasons for staying alive when you are thinking of killing yourself: The Reasons for Living Inventory. *Journal of Counseling and Clinical Psychology, 51*(2), 276-286. doi: http://dx.doi.org/10.1037/0022-006X.51.2.276

Lloyd-Richardson, E. E., Perrine, N., Dierker, L., & Kelley, M. L. (2007). Characteristics and functions of non-suicidal self-injury in a community sample of adolescents. *Psychological Medicine, 37*(8), 1183-1192. doi: 10.1017/S003329170700027X

Lockard, A. J., Hayes, J. A., Neff, K., & Locke, B. D. (2014). Self-compassion among college

counseling center clients: An examination of clinical norms and group differences. *Journal*

of College Counseling, 17(3), 249-259. doi: 10.1002/j.2161-1882.2014.00061.x

Lohoff, F. W. (2010). Overview of the genetics of major depressive disorder. *Current Psychiatry*

Reports, 12(6), 539-546. doi: 10.1007/s11920-010-0150-6

Luoma, J. B., Martin, C. E., & Pearson, J. L. (2002). Contact with mental health and primary care

providers before suicide: A review of the evidence. *American Journal of Psychiatry, 159*,

909-916. doi: 10.1176/appi.ajp.159.6.909

Lustyk, M. K., Chawla, N., Nolan, R. S., & Marlatt, G. A. (2009). Mindfulness meditation

research: Issues of participant screening, safety procedures, and researcher training.

*Advances in Mind-Body Medicine, 24(*1), 20-30. Retrieved from

https://www.ncbi.nlm.nih.gov/pubmed/20671334

MacBeth, A. & Gumley, A. (2012). Exploring compassion: A meta-analysis of the association

between self-compassion and psychopathology. *Clinical Psychology Review, 32*(6), 545-

552. doi: 10.1016/j.cpr.2012.06.003

MacMillan, H. L., Fleming, J. E., Streiner, D. L., Lin, E., Boyle, M. H., Jamieson, E., ...,

Beardslee, W. R. (2001). Childhood abuse and lifetime psychopathology in a community

sample. *American Journal of Psychiatry, 158*(11), 1878-1883. doi:

10.1176/appi.ajp.158.11.1878

Malone, K. M., Oquendo, M. A., Haas, G. L., Ellis, S. P., Li, S., & Mann, J. J. (2000). Protective

factors against suicidal acts in major depression: Reasons for living. *Psychiatry, 157*(7),

1084-1088. doi: http://dx.doi.org/10.1176/appi.ajp.157.7.1084

Mann, J. J. (2003). Neurobiology of suicidal behavior. *Nature Reviews Neuroscience, 4*(10), 819-828. doi: 10.1038/nrn1220

Mann, J. J, & Haghgighi, F. (2010). Genes and environment: Multiple pathways to psychopathology. *Biological Psychiatry, 68*, 403–404. doi: 10.1016/j.biopsych.2010.07.006

Mann, J. J., Huang, Y. Y., Underwood, M. D., Kassir, S. A., Oppenheim, S., Kelly, T. M. …, & Arango, V. (2000). A serotonin transporter gene promoter polymorphism (5-HTTLPR) and prefrontal cortical binding in major depression and suicide. *Archives of General Psychiatry, 57*(8), 729-738. doi: 10.1001/archpsyc.57.8.729

Mann, J. J., Waternaux, C., Haas, G. L., & Malone, K. M. (1999). Toward a clinical model of suicidal behavior in psychiatric patients. *American Journal of Psychiatry, 156*, 181–189. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/9989552

Merikangas, K. R., & Pine, D. (2002). Genetic and other vulnerability factors for anxiety and stress disorders. In *Neuropsychopharmacology: The Fifth Generation of Progress.* Philadelphia, PA: Lippincott, Williams, and Wilkins.

Maris, R. W. (1997). Social suicide. *Suicide and Life-Threatening Behavior, 27*(1), 41-49. doi: 10.1111/j.1943-278X.1997.tb00501.x

Maris, R. W. (2002). Suicide. *Lancet, 360*, 319-326. doi: 10.1016/S0140-6736(02)09556-9

Marshall, S. K., Tilton-Weaver, L. C., & Stattin, H. (2013). Non-suicidal self-injury and depressive symptoms during middle adolescence: a longitudinal analysis. *Journal of Youth and Adolescence, 42*(8), 1234-1242. doi: 10.1007/s10964-013-9919-3.

May, A. M., Klonsky, E. D., & Klein, D. N. (2012). Predicting future suicide attempts among

    depressed suicide ideators: A 10-year longitudinal study. *Journal of Psychiatric Research,*

    46(7), 946-952. doi: 10.1016/j.jpsychires.2012.04.009

McLean, J., Maxwell, M., Platt, S., Harris, F., & Jepson, R. (2008). *Risk and protective factors for*

    suicide and suicidal behaviour: a literature review. Scottish Government Social Research:

    Edinborough.

Mijusckovic, B. (1980). Loneliness and suicide. *Journal of Social Philosophy, 11*(1), 11-17. doi:

    10.1111/j.1467-9833.1980.tb00610.x

Miller, M., & Hemenway, D. (2002). Firearm prevalence and the risk of suicide: A review.

    Harvard Health Policy Review, 2(2), 29-37. Retrieved from

    http://www.policyarchive.org/handle/10207/96444

Mistler, B.J., Reetz, D.R., Krylowicz, B., & Barr, V. (2012). *The Association for University of*

    College Counseling Center Directors Annual Survey. Retrieved from

    http://files.cmcglobal.com/Monograph_2012_AUCCCD_Public.pdf

Mitchell, S. M., Cukrowicz, K. C., Van Allen, J., & Seegan, P. L. (2015). Moderating role of trait

    hope in the relation between painful and provocative events and acquired capability for

    suicide. *Crisis, 36*(4), 249-256. doi: 10.1027/0227-5910/a000319

Moscicki, E. K. (2001). Epidemiology of completed and attempted suicide: Toward a framework

    for prevention. *Clinical Neuroscience Research, 1*(5), 310-323. doi: 10.1016/S1566-

    2772(01)00032-9

Muehlenkamp, J. J. (2005). Self-injurious behavior as a separate clinical syndrome. *American*

    Journal of Orthopsychiatry, 75, 324-333. doi: 10.1037/0002-9432.75.2.324

Muehlenkamp, J. J., & Gutierrez, P. M. (2004). An investigation of differences between self-injurious behavior and suicide attempts in a sample of adolescents. *Suicide and Life-Threatening Behavior, 34*(1), 12-23. doi: 10.1521/suli.34.1.12.27769

Muehlenkamp, J. J., Hilt, L. M., Ehlinger, P. P., & McMillan, T. (2015). Nonsuicidal self-injury in sexual minority college students: a test of theoretical integration. *Child and Adolescent Psychiatry and Mental Health, 9*(16), doi: 10.1186/s13034-015-0050-y

Mushtaq, R., Shoib, S., Shah, T., & Mushtaq, S. (2014). Relationship between loneliness, psychiatric disorders and physical health? A review on the psychological aspects of loneliness. *Journal of Clinical and Diagnostic Research, 8*(9), 1-4. doi: 10.7860/JCDR/2014/10077.4828

Neff, K. D. (2003). Development and validation of a scale to measure self-compassion. *Self and Identity, 2*, 223-250. doi: 10.1080/15298860309027

Neff, K. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2*(2), 85-101. doi: 10.1080/15298860390129863

Neff, K. D. (2012). The science of self-compassion. In C. Germer & R. Siegel (Eds.), *Compassion and Wisdom in Psychotherapy* (pp. 79-92). New York: Guilford Press.

Neff, K. D., & Beretvas, S. N. (2013). The role of self-compassion in romantic relationships. *Self and Identity, 12*(1), 78–98. doi: http://dx.doi.org/10.1080/15298868.2011.639548

Neff, K. D., & Dahm, K. A. (2014). Self-Compassion: What it is, what it does, and how it relates to mindfulness. To appear in in M. Robinson, B. Meier & B. Ostafin (Eds.) *Mindfulness and Self-Regulation*. New York: Springer.

Neff, K. D., & Germer, C. K. (2013). A pilot study and randomized controlled trial of the mindful
self-compassion program. *Journal of Clinical Psychology, 69*, 28–44. doi:
10.1002/jclp.21923

Neff, K. D., Kirkpatrick, K. L., & Rude, S. S. (2007). Self-compassion and adaptive psychological
functioning. *Journal of Research in Personality, 41*(1), 139-154. doi:
10.1016/j.jrp.2006.03.004

Neff, K. D., & McGehee, P. (2010). Self-compassion and psychological resilience among
adolescents and young adults. *Self and Identity, 9*(3), 225-240. doi:
http://dx.doi.org/10.1080/15298860902979307

Neff, K. D., Rude, S. S., & Kirkpatrick, K. L. (2007). An examination of self-compassion in
relation to positive psychological functioning and personality traits. *Journal of Research in
Personality, 41*, 908-916. doi: 10.1016/j.jrp.2006.08.002

Nepon, J., Belik, S. L., Bolton, J., & Sareen, J. (2010). The relationship between anxiety disorders
and suicide attempts: Findings from the national epidemiologic study on alcohol and
related conditions. *Depression and Anxiety, 27*(9), 791-798. doi: 10.1002/da.20674

Ng, J., Yan Chan, H., & Schlaghecken, F. (2012). Dissociating effects of subclinical anxiety and
depression on cognitive control. *Advances in Cognitive Psychology, 8*(1), 38-49. doi:
10.2478/v10053-008-0100-6

Nikolaus, S., Antke, C., Beu, M., & Müller, H. W. (2010). Cortical GABA, striatal dopamine and
midbrain serotonin as the key players in compulsive and anxiety disorders--results from in
vivo imaging studies. *Reviews in the Neurosciences, 21*, 119–39. doi:
10.1515/REVNEURO.2010.21.2.119

Nitkowski D., & Petermann, F. (2011). Non-suicidal self-injury and comorbid mental disorders: A review. *Fortschritte der Neurologie-Psychiatrie, 79*(1), 9-20, doi: 10.1055/s-0029-1245772

Nixon, M. K., Cloutier, P. F., & Aggarwal, S. (2002). Affect regulation and addictive aspects of repetitive self-injury in hospitalized adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry, 41*(11), 1333-1341. doi: 10.1097/00004583-200211000-00015

Nock, M. K. (2008). Actions speak louder than words: An elaborated theoretical model of the social functions of self-injury and other harmful behaviors. *Applied and Preventive Psychology, 12*, 159-168. doi: 10.1016/j.appsy.2008.05.002

Nock, M. K., Borges, G., Bromet, E. J., Alonso, J., Angermeyer, M., Beautrais, A., Bruffaerts, R., ... & Williams, D. (2008). Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. *British Journal of Psychiatry, 192*(2), 98-105. doi: 10.1192/bjp.bp.107.040113

Nock, M. K., & Favazza, A. (2009). Non-suicidal self-injury: Definition and classification. In M. K. Nock (Ed.), *Understanding nonsuicidal self-injury* (pp. 9–18). Washington, DC: American Psychological Association

Nock, M. K., Joiner, T. E., Gordon, K. H., Lloyd-Richardson, E. & Prinstein, M. J. (2006). Non-suicidal self-injury among adolescents: Diagnostic correlates and relation to suicide attempts. *Psychiatry Research, 144*(1), 65–72. doi: 10.1016/j.psychres.2006.05.010

Nock M. K., & Kessler, R. C. (2006). Prevalence of and risk factors for suicide attempts versus suicide gestures: Analysis of the national comorbidity study. *Journal of Abnormal Psychology, 115*(3), 616-623. doi: 10.1037/0021-843X.115.3.616

Nock, M. K., Prinstein, M. J., & Sterba, S. K. (2009). Revealing the form and function of self-injurious thoughts and behaviors: A real-time ecological assessment study among adolescents and young adults. *Journal of Abnormal Psychology, 118*, 816–827. doi:10.1037/2152-0828.1.S.36

Nutt, D. J. (2008). Relationship of neurotransmitters to the symptoms of major depressive disorder. *Journal of Clinical Psychiatry, 69*, 4-7. doi: 10.1007/springerreference_116852

Ortigo, K. M., Westen, D., & Bradley, R. B. (2009). Personality subtypes of suicidal adults. *Journal of Nervous and Mental Disease, 197*(9), 687-694. doi: 10.1097/NMD.0b013e3181b3b13f

Osman, A., Bagge, C. L., Gutierrez, P. M., Konick, L. C., Kopper, B. A., & Barrios, F. X. (2001). The Suicidal Behaviors Questionnaire-Revised (SBQ-R): Validation with clinical and nonclinical samples. *Assessment, 8*(4), 443-54. doi: 10.1177/107319110100800409

Osman, A., Gutierrez, P. M., Muehlenkamp, J. J., Dix-Richardson, F., Barrios, F. X., & Kopper, B. A. (2004). Suicide resilience inventory-25: Development and preliminary psychometric properties. *Psychological Reports, 94*(32), 1349-1360. doi: 10.2466/pr0.94.3c.1349-1360

Otte, C. (2011). Cognitive behavioral therapy in anxiety disorders: Current state of the evidence. *Dialogues in Clinical Neuroscience, 13*(4), 413-421. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/22275847

Pauley, G., & McPherson, S. (2010). The experience and meaning of compassion and self-compassion for individuals with depression or anxiety. *Psychology and Psychotherapy, 83*, 129-143. doi: 10.1348/147608309X471000

Pan, L. A., & Phillips, M. L. (2014). Toward identification of neural markers of suicide risk in adolescents. *Neuropsychopharmacology, 39*(1), 236-237. doi: 10.1038/npp.2013.233

Perez-Rodriguez, M. M., Baca-Garcia, E., Oquendo, M. A., & Blanco, C. (2008). Ethnic differences in suicidal ideation and attempts. *Prim Psychiatry, 15*(2), 44-53. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2846794/

Pinel, E. C., Long, A. E., Murdoch, E. Q., & Helm, P. (2010). A prisoner of one's own mind: Identifying and understanding existential isolation. *Personality and Individual Differences, 105*, 54-63. doi: http://dx.doi.org.iris.etsu.edu:2048/10.1016/j.paid.2016.09.024

Polanco-Roman, L., Tsypes, A., Soffer, A., & Miranda, R. (2014). Ethnic differences in prevalence and correlates of self-harm behaviors in a treatment-seeking sample of emerging adults. *Psychiatry Research, 220*(3), 927-934. doi: http://dx.doi.org/10.1016/j.psychres.2014.09.017

Pompili, M., Lester, D., Leenaars, A. A., Tatarelli, R., & Girardi, P. (2008). Psychache and suicide: A preliminary investigation. *Suicide & Life-Threatening Behavior, 38*(1), 116-121. doi: 10.1521/suli.2008.38.1.116

Porges, S. W. (2007). The polyvagal perspective. *Biological Psychology, 74*(2), 116-143. doi: 10.1016/j.biopsycho.2006.06.009

Rabon, J. K., Brooks, B. D., Kaniuka, A. R., Sirois, F., & Hirsch, J. K. (2017). *Self-compassion and suicide risk in veterans: When the going gets tough, do the tough benefit more from self-kindness?* Manuscript submitted to *Journal of Affective Disorders*.

Raes, F. (2010). Rumination and worry as mediators of the relationship between self-compassion and depression and anxiety. *Personality and Individual Differences, 48*, 757-671. doi: http://dx.doi.org/10.1016/j.paid.2010.01.023

Ramchand, R., & Roth, E. (2014). *Racial and ethnic differences in exposure to suicide prevention messaging, confidence in one's ability to intervene with someone at risk, and resource preferences*. Santa Monica, CA: RAND Corporation.

Rasic, D. T., Belik, S. L., Elias, B., Katz, L. Y., Enns, M., & Sareen, J. (2009). Spirituality, religion and suicidal behavior in a nationally representative sample. *Journal of Affective Disorders, 114*(1-3), 32-40. doi: 10.1016/j.jad.2008.08.007

Raust, A., Slama, F., Mathieu, F., Roy, I., Chenu, A., Koncke, D., ... & Bellivier, F. (2007). Prefrontal cortex dysfunction in patients with suicidal behavior. *Psychological Medicine, 37*(3), 411-419. doi: 10.1017/S0033291706009111

Rockliff, H., Gilbert, P., McEwan, K., Lightman, S., & Glover, D. (2008). A pilot exploration of heart rate variability and salivary cortisol responses to compassion-focused imagery. *Clinical Neuropsychiatry, 5*(3), 132-139. Retrieved from http://psycnet.apa.org/psycinfo/2008-15384-002

Rodham, K., & Hawton, K. (2009). Epidemiology and phenomenology of nonsuicidal self-injury. In M. K. Nock (Ed.), *Understanding nonsuicidal self-injury* (pp. 37–62). Washington, DC: American Psychological Association.

Roy, A. (1998). Is introversion a risk factor for suicidal behaviour in depression? *Psychological Medicine, 28*(6), 1457-1461. doi: 10.1017/S0033291798007028

Roy, A. (2003). Distal risk factors for suicidal behavior in alcoholics: Replications and new findings. *Journal of Affective Disorders, 77*(3), 267-271. doi: http://dx.doi.org/10.1016/S0165-0327(02)00173-8

Rudd, M. D. (2000). The suicidal mode: A cognitive-behavioral model of suicidality. *Suicide and Life-Threatening Behavior, 30*(1), 18-33. doi: 10.1111/j.1943-278X.2000.tb01062.x

Ryding, E., Lindström, M., & Träskman-Bendz, L. (2008). The role of dopamine and serotonin in

    suicidal behaviour and aggression. *Progress in Brain Research, 172*, 307-315. doi:

    10.1016/S0079-6123(08)00915-1

Sansone, R. A. Wiederman, M. W., & Sansone, L. A. (1998). The Self-Harm Inventory (SHI):

    Development of a scale for identifying self-destructive behaviors and borderline

    personality disorder. *Journal of Clinical Psychology, 54*(7), 973-983. doi:

    10.1002/(SICI)1097-4679(199811)54:73.0.CO;2-H

Sareen, J., Cox, B. J., Afifi, T. O., de Graaf, R., Gordon, J. G., ten Have, M., & Stein, M. B.

    (2005). Anxiety disorders and risk for suicidal ideation and suicide attempts: A population-

    based longitudinal study of adults. *Archives of General Psychiatry, 62*(11), 1249-1257.

    doi: 10.1001/archpsyc.62.11.1249

Schwartz, A. J. (1990). The epidemiology of suicide among students at colleges and universities in

    the United States. *Journal of College Student Psychotherapy, 4*, 25-44. doi:

    10.1300/J035v04n03_03

Selby, E. A., Franklin, J., Carson-Wong, A., & Rizvi, S. L. (2013). Emotional cascades and self-

    injury: Investigating instability of rumination and negative emotion. *Journal of Clinical*

    Psychology, 69(12), 1213-1227. doi: 10.1002/jclp.21966

Selby, E. A., Nock, M. K., & Kranzler, A. (2013). How does self-injury feel? Examining

    automatic positive reinforcement in adolescent self-injurers with experience

    sampling. *Psychiatry Research, 215*(2), 417-423. doi: 10.1016/j.psychres.2013.12.005

Seo, D., Patrick, C. J., & Kennealy, P. J. (2008). Role of serotonin and dopamine system

    interactions in the neurobiology of impulsive aggression and its comorbidity with other

clinical disorders. *Aggression and Violent Behavior, 13*(5), 383-395. doi: 10.1016/j.avb.2008.06.003

Sfoggia, A., Pacheco, M. A., & Grassi-Oliveira, R. (2008). History of childhood abuse and neglect and suicidal behavior at hospital admission. *Crisis, 29*(3), 154-158. doi: 10.1027/0227-5910.29.3.154

Shapiro, D. H. (1992). Adverse effects of meditation: a preliminary investigation of long-term meditators. *International Journal of Psychosomatics, 39*, 62-67. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/1428622

Shneidman, E. S. (1993). *Suicide as psychache: A clinical approach to self-destructive behavior*. Lanham, MD: Jason Aronson.

Silverman, M. M., Berman, A. L., Sanddal, N. D., O'Carroll, P. W., & Joiner, T. E (2007). Rebuilding the Tower of Babel: A revised nomenclature for the study of suicide and suicidal behaviors: Part 1: Background, rationale, and methodology. *Suicide and Life-Threatening Behavior, 37*, 248-263. doi: 10.1521/suli.2007.37.3.248

Sirois, F. M., Kitner, R., & Hirsch, J. K. (2015). Self-compassion, affect, and health-promoting behaviors. *Health Psychology, 34*(6), 661-669. doi: 10.1037/hea0000158

Sokratous, S., Merkouris, A., Middleton, N., & Karanikola, M. (2013). The association between stressful life events and depressive symptoms among Cypriot university students: A cross-sectional descriptive correlational study. *BioMed Center Public Health, 13*(1121), doi: 10.1186/1471-2458-13-1121

Sornberger, M. J., Heath, N. L., Toste, J. R., & McLouth, R. (2012). Nonsuicidal self-injury and gender: patterns of prevalence, methods, and locations among adolescents. *Suicide and Life-Threatening Behavior, 42*(3), 266-278. doi: 10.1111/j.1943-278X.2012.0088.x

Sornberger, M. J., Smith, N. G., Toste, J. R., & Heath, N. L. (2013). Nonsuicidal self-injury,

coping strategies, and sexual orientation. *Journal of Clinical Psychology, 69*(6), 571-583.

doi: 10.1002/jclp.21947

Specht, J., Egloff, B., & Schmukle, S. C. (2011). Stability and change of personality across the life

course: The impact of age and major life events on mean-level and rank-order stability of

the Big Five. *Journal of Personality and Social Psychology, 101*(4), 862-882. doi:

10.1037/a0024950

Spitzer, R. L., Kroenke, K., Williams, J. B., & Lowe, B. (2006). A brief measure for assessing

generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine, 166*(10), 1092-

1097. doi: 10.1001/archinte.166.10.1092

Stanley, B., Brodsky, B., Nelson, J. D., & Dulit, R. (2007). Brief dialectical behavior therapy

(DBT-B) for suicidal behavior and non-suicidal self injury. *Archives of Suicide Research,
11*(4), 337-341. doi: 10.1080/13811110701542069

Stanley, B., Sher, L., Wilson, S., Ekman, R., Huang, Y. Y., & Mann, J. J. (2010). Non-suicidal

self-injurious behavior, endogenous opioids and monoamine neurotransmitters. *Journal of

Affective Disorders, 124*(1-2), 134-140. doi: 10.1016/j.jad.2009.10.028

Stanley B., Winchel, R., Molco, A., Simeon, D., & Stanley, M. (1992). Suicide and the self-harm

continuum: Phenomenological and biochemical evidence. *International Review of

Psychiatry, 4*, 149–55. doi: 10.3109/09540269209066312

Substance Abuse and Mental Health Services Administration, *Results from the 2013 National

Survey on Drug Use and Health: Mental Health Findings, NSDUH Series H-49, HHS

Publication No. (SMA) 14-4887*. Rockville, MD: Substance Abuse and Mental Health

Services, 2014.

Tanaka, M., Wekerle, C., Schmuck, M. L., & Paglia-Boak, A. (2011). The linkages among childhood maltreatment, adolescent mental health, and self-compassion in child welfare adolescents. *Child Abuse and Neglect, 35*, 887-898. doi: 10.1016/j.chiabu.2011.07.003

Tang, F., Xue, F., & Qin, P. (2015). The interplay of stressful life events and coping skills on risk for suicidal behavior among youth students in contemporary China: a large scale cross-sectional study. *BMC Psychiatry, 15*, 182. doi: 10.1186/s12888-015-0575-x

Tao, M., Li, Y., Xie, D., Wang, Z., Qiu, J., Wu, W., Sun, J... & Gao, J. (2011). Examining the relationship between lifetime stressful life events and the onset of major depression in Chinese women. *Journal of Affective Disorders, 135*(1-3), 95-99. doi: 10.1016/j.jad.2011.06.054

Taylor, R. J., Chatters, L. M., & Joe, S. (2011). Religious involvement and suicidal behavior among African Americans and Black Caribbeans. *The Journal of Nervous and Mental Disease, 199*(7), 478-486. doi: 10.1097/NMD.0b013e31822142c7

Tesh, M., Learman, J., & Pulliam, R. M. (2013). Mindful self-compassion strategies for survivors of intimate partner abuse. *Mindfulness, 6*(2), 192-201. doi: 10.1007/s12671-013-0244-4

Thompson, E. A., Eggert, L. L., Herting, J. R. (2000). Mediating effects of an indicated prevention program for reducing youth depression and suicide risk behaviors. *Suicide and Life-Threatening Behavior, 30*(3), 252-271. doi: 10.1111/j.1943-278X.2000.tb00990.x

Thurackal, J. T., Corveleyn, J., & Dezutter, J. (2016). Personality and self-compassion: Exploring their relationship in an Indian context. *European Journal of Mental Health, 11*, 18-35. doi: 10.5708/EJMH.11.2016.1-2.2

Timmermans, S. (2005). Suicide determination and the professional authority of medical

    examiners. *American Sociological Review, 70*(2), 311-333. doi:

    10.1177/000312240507000206

Tondo, L., Albert, M. J., & Baldessarini, R. J. (2006). Suicide rates in relation to healthcare access

    in the United States: An ecological study. *Journal of Clinical Psychiatry, 67*, 517–523. doi:

    10.4088/JCP.v67n0402

Trepal, H.C., Wester, K. L., & Merchant, E. (2015). A cross-sectional matched sample study of

    nonsuicidal self-injury among young adults: support for interpersonal and intrapersonal

    factors, with implications for coping strategies. *Child and Adolescent Psychiatry and*

    *Mental Health, 9(*36), np. doi: 10.1186/s13034-015-0070-7.

Turecki, G. (2005). Dissecting the suicide phenotype: The role of impulsive–aggressive

    behaviours. *Journal of Psychiatry and Neuroscience, 30*(6), 398-408. Retrieved from

    https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1277022/

U.S. Public Health Service. (1999). *The surgeon general's call to action to prevent suicide.*

    Washington, DC: US Department of Health and Human Services.

Van Dam, N. T., Sheppard, S. C., Forsyth, J. P., & Earleywine, M. (2011). Self-compassion is a

    better predictor than mindfulness of symptom severity and quality of life in mixed anxiety

    and depression. *Journal of Anxiety Disorders, 25*(1), 123-130. doi:

    10.1016/j.janxdis.2010.08.011

van Heeringen, K. (2003). The neurobiology of suicide and suicidality. *The Canadian Journal of*

    Psychiatry, 48(5), 292-300. Retrieved from

    http://www.ncbi.nlm.nih.gov/pubmed/12866334

Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S., Selby, E. A., & Joiner Jr., T. E. (2010). The interpersonal theory of suicide. *Psychology Review, 117*(2), 575-600. doi: 10.1037/a0018697

Van Vliet, K. J., & Kalnis, G. R. C. (2011). A compassion-focused approach to nonsuicidal self-injury. *Journal of Mental Health Counseling, 33*(4), 295-311. doi: 10.17744/mehc.33.4.j7540338q223t417

Vettese, L. C., Dyer, C. E., Li, W. L., & Wekerle, C. (2011). Does self-compassion mitigate the association between childhood maltreatment and later emotional regulation difficulties? A preliminary investigation. *International Journal of Mental Health and Addiction, 9*, 480-491. doi: 10.1007/s11469-011-9340-7

Victor, S. E., & Klonsky, D. E. (2013). Daily emotion in non-suicidal self-injury. *Journal of Clinical Psychology*, 00, 1-12. doi: 10.1002/jclp.22037

Voracek, M., & Loibl, L. M. (2007). Genetics of suicide: A systematic review of twin studies. *Weiner Klinische Wochenschrift, 119*(15-16), 463-475. doi: 10.1007/s00508-007-0823-2

Wedig, M. M., & Nock, M. K. (2007). Parental expressed emotion and adolescent self-injury. *Journal of the American Academy of Child and Adolescent Psychiatry, 46*, 1171-1178. doi: 10.1097/chi.0b013e3180ca9aaf

Wei, M., Liao, K. Y., Ku, T. Y., & Shaffer, P. A. (2011). Attachment, self-compassion, empathy, and subjective well-being among college students and community adults. *Journal of Personality, 79*(1), 191-221. doi: 10.1111/j.1467-6494.2010.00677.x

Wester, K. L., & Trepal, G. C. (2015). Nonsuicidal self-injury: Exploring the connection among race, ethnic identity, and ethnic belonging. *Journal of College Student Development, 56*(2), 127-139. doi: 10.1353/csd.2015.0013

Weyrauch, K. F., Roy-Byrne, P., Katon, W., & Wilson, L. (2001). Stressful life events and

    impulsiveness in failed suicide. *Suicide and Life-Threatening Behavior, 31*(3), 311-319.

    doi: 10.1521/suli.31.3.311.24240

Whitlock, J.L. & Knox, K. (2007). The relationship between suicide and self-injury in a young

    adult population. *Archives of Pediatrics and Adolescent Medicine, 161*(7), 634-640. doi:

    10.1001/archpedi.161.7.634

Whitlock, J., Muehlenkamp, J., Eckenrode, J., Purington, A., Abrams, G. B., Barreira, P, & Kress,

    V. (2012). Nonsuicidal self-injury as a gateway to suicide in young adults. *Journal of*

    Adolescent Health, *52*(4), 486-492. doi: 10.1016/j.jadohealth.2012.09.010

Whitlock, J., Muehlenkamp, J. , Purington, A., Eckenrod, J., Barreira, J., Abrams, G. B., Marchell,

    T., ... & Knox, K. (2011). Non-suicidal self-injury in a college population: General trends

    and sex differences. *Journal of American College Health, 59*, 691–698. doi:

    10.1080/07448481.2010.529626

Whitlock, J., & Rodham, K. (2013). Understanding nonsuicidal self-injury in youth. *School*

    Psychology Forum: Research in Practice, 7(4), 1-18. Retrieved from

    http://www.selfinjury.bctr.cornell.edu/perch/resources/understanding-nonsuicidal-self-

    injury-in-youth-school-psychology-forum.pdf

Whitlock, J., Wyman, P. A., & Barreira, P. (2012). *Connectedness and suicide prevention in*

    college settings. Brofenbrenner Center for Translational Research, Cornell University.

    Retrieved from http://www.selfinjury.bctr.cornell.edu/perch/resources/connectedness-

    suicide-prevent.pdf

Williamson, D. E., Birmaher, D., Anderson, B., Al-Shabbout, M., & Ryan, N. D. (1995) Stressful

    life events in depressed adolescents: The role of dependent events during the depressive

episode. *Journal of the American Academy of Child and Adolescent Psychiatry, 34*(5), 591-598. doi: 10.1097/00004583-199505000-00011

Wolff, J., Frazier, E. A., Esposito-Smythers, C., Burke, T., Sloan, E., & Spirito, A. (2013). Cognitive and social factors associated with NSSI and suicide attempts in psychiatrically hospitalized adolescents. *Journal of Abnormal Child Psychology, 41*(6), 1005-1013. doi: 10.1007/s10802-013-9743-y

World Health Organization. (2014). *Preventing suicide: A global imperative*. Retrieved from http://www.who.int/mental_health/suicide-prevention/world_report_2014/en/

WHO. (2015). *Mental health atlas 2014*. Retrieved from www.who.int/mental_health/evidence/atlas/mental_health_atlas_2014/en/

Xu, J., Kochanek, K. D., Murphy, S. L., & Arias, E. (2014). *Mortality in the United States, 2012*. NCHS Data Brief No. 168. Hyattsville, MD: National Center for Health Statistics.

Yalom, I. D. (1980). *Existential psychotherapy*. New York: Basic Books.

Yates, T. M. (2004). The developmental psychopathology of self-injurious behavior: Compensatory regulation in posttraumatic adaptation. *Clinical Psychological Review, 24*, 35-74. doi: http://dx.doi.org/10.1016/j.cpr.2003.10.001

Yen, S., Shea, M. T., Sanislow, C. A., Skodol, A. E., Grilo, C. M., Edelen M. O., & Gunderson, J. G. (2009). Personality traits as prospective predictors of suicide attempts. *Acta Psychiatrica Scandinavica, 120*(3), 222–229. doi: 10.1111/j.1600-0447.2009.01366.x.

Zeller, M., Yuval, K., Nitzan-Assayag, Y., & Bernstein, A. (2014). Self-compassion in recovery following potentially traumatic stress: Longitudinal study of at-risk youth. *Journal of Abnormal Child Psychology, 43*(4), 645-653. doi: 10.1007/s10802-014-9937-y

VITA

ANDREA KANIUKA

Education:	M.A. Psychology, Clinical Psychology concentration East Tennessee State University, Johnson City, Tennessee, 2017
	B.A. Psychology, University of North Carolina Wilmington, Wilmington, North Carolina, 2014
	B.S. Statistics, University of North Carolina Wilmington, Wilmington, North Carolina, 2014
Professional Experience:	Psychological Testing Technician, The Center for Research, Assessment, and Treatment Efficacy, Asheville, North Carolina, 2016-2017
	Student Clinician, ETSU Behavioral Health and Wellness Clinic, Johnson City, Tennessee, 2015-2016
	Graduate Assistant, East Tennessee State University, Johnson City, Tennessee 2014-2017
Publications:	Ellis, J., Kaniuka, A., & Barnes, J. (2017) Differences in reasons for living in college methamphetamine users and non-users. *College Student Journal, 50*(3), 393-397.
	Hirsch, J. K., Kaniuka, A., Brooks, B., Hirsch, K. K., Cohn, T. J., & Williams, S. L. (2017). *Postelection distress and resiliency in LGBTQ communities: An overview of real data, not alternative facts.* APA Division 44 Newsletter, March 2017.
Honors and Awards:	Appalachian Student Research Forum 1st place master's candidate poster, East Tennessee State University, 2016
	Appalachian Student Research Forum 2nd place master's candidate oral presentation, East Tennessee State University, 2016
	Tennessee Psychological Association 1st place graduate student poster, Nashville, TN, 2015
	Appalachian Student Research Forum 1st place doctoral candidate poster, East Tennessee State University, 2015