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Towards an Understanding of College Student Distress, Suicidality, and Connectedness

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Towards an Understanding of College Student Distress, Suicidality, and Connectedness

by

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Dedication

This research is dedicated to those who struggle to find their reason to live or who have completed suicide. This work is also dedicated to the families, friends, and professionals who work so hard to give them hope.

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I did not take the traditional doctoral degree path. I finally found the University of Texas at Austin (UT) and Counseling Psychology after making many twists and turns along the way of life. This journey started with the support of my family. My Mom has been an unconditional source of support, love, and caring. She raised me to see life through an open mind and heart. She also still works tirelessly to help those in need and is a huge source of inspiration for how she has reinvented herself throughout life. My Father instilled importance of work ethic, high expectations, and also showed me the importance of discipline. These qualities did not come naturally at first but once I realized the sense of mastery and fulfillment that occurs after challenging oneself, I embraced them wholeheartedly. My Sister has been my biggest cheerleader and has always been by my side. She attended many of my collegiate regattas and has understood that my goals in life often come at the expense of seeing family. I am in awe of my sister's energy, love of life, and dedication towards the children with whom she works. I have been focused on athletics or academics for the majority of my adulthood. I hope my family knows that they too have a huge part of my heart, even though I have not always been there in person. I would not be here today if it were not for them.

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Towards an Understanding of College Student Distress, Suicidality, and Connectedness

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Suicide is a national problem and is the second leading cause of death among college students. The concern, however, does not rest solely for those students who seriously consider suicide, but also for those who struggle with distress and do not seek help. Scholars have called for suicide prevention efforts to take a population-based intervention approach, as the majority of campus counseling centers are under-resourced and overwhelmed with demand. Increasing connectedness on college campuses has been considered a key strategy for suicide prevention, as connectedness is linked to health and wellbeing and is also theorized to play an important role in preventing the desire for death. However, little is known about how connectedness manifests for college students and the ways in which connectedness is related to distress and suicidal thoughts. The current exploratory study builds upon existing research by examining the relationship between connectedness, distress, and suicidal thinking. More specifically, the study examines the extent to which connectedness protects students against the development of distress and suicidal thoughts. Moreover, it examines the relationship between gender, sexual orientation, and membership in student groups with connectedness, distress, and

suicidal thoughts. This information contributes to a fuller understanding of the factors that may protect people from suicidal thoughts and improve campus suicide prevention efforts, with the aim of bolstering the mental health of the college community. The study uses archival data from a national survey of college student coping collected in 2011 by The National Research Consortium of Counseling Centers in Higher Education.

Multiple and logistic regression were used to explore relationships between historical and demographic predictors, self-reported connectedness, distress, and suicidal thoughts during a stressful period. Results indicated that connectedness was negatively related to distress and suicidal thinking. Females endorsed lower connectedness and higher distress than males. Non-heterosexual students endorsed lower connectedness, higher distress, and higher odds of suicidal thinking compared to heterosexual students. Membership in student groups was related to higher connectedness and lower distress, differences were found in the types of groups of which students were members. Implications for population level campus interventions are discussed.

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Chapter One: Introduction

By the end of today approximately 100 people in the United States will die by completing suicide, which is about one person every 15 minutes (Centers for Disease Control and Prevention [CDC], 2010). Disturbingly, since the 1950's, suicide rates among adolescents and young adults have nearly tripled (CDC, 2010; Peters, Kochanek, & Murphy, 1998). Moreover, the topic of suicide in the college population has been of particular interest as college suicides have been increasingly publicized in the media due to recent events.

Estimates from nationally representative studies indicate that each year, more than half a million people will die by suicide worldwide (Joiner, 2005). According to the CDC, in 2007 more than 34,000 suicides occurred in the United States, or 11.26 suicides per 100,000 (CDC, 2010). In addition, each year 3.3% of Americans seriously consider suicide (i.e. active suicidal ideation), 1.0% develop a plan for suicide, and 0.6% attempt suicide (Kessler, Berglund, Borges, Nock, & Wang, 2005).

In terms of young people, the CDC reports suicide was the third leading cause of death for 15 to 24-year olds, and the second leading cause of death for 25 to 34-year olds (2010). It is important to emphasize that nonlethal suicide attempts are significantly more common than deaths from suicide, especially for this age group (Schwartz & Friedman, 2009). In a recent nationally representative sample, almost 14 percent of students in grades 9-12 reported that they seriously considered attempting suicide in the past 12 months (CDC, 2010). An estimated 2.9 million persons aged 18-29 years in the U.S. had suicidal thoughts in the past year (5.7% of the age-group population) and 821,000 (1.6%

of the age-group population) reported making suicide plans in the past year (CDC, 2011). What is most disturbing for professionals in the mental health field is that over 70 percent of people who engage in suicidal behavior never seek mental health services (Gallagher, 2009; Kisch, Leino, & Silverman, 2005; Schwartz, 2006b) and roughly half of these at-risk students never tell anyone about their suicidal thoughts (Burton Denmark, 2011).

Although the rate of completed suicide is lower among college students than their non-student peers (Schwartz, 1990; 2006b; 2011), it remains a major cause of premature death (Brener, Hassan, & Barrios, 1999; Silverman et al., 1997) accounting for approximately 1,100 student deaths annually (American Association of Suicidology [AAS], 2006; Wilcox et al., 2010). In terms of rates on college campuses, suicide is the second leading cause of death among college students, estimated at 7 per 100,000 compared to 15 per 100,000 in a National sample matched for age, sex, and ethnicity (Schwartz, 2006b; 2011; Suicide Prevention Resource Center [SPRC], 2004). Schwartz (2011) recently found a significant 18% increase in college student suicide rates over the past five years, "when compared with matched national samples, the relative risk of student suicide increased from .51 (1990-2004) to .58 (2004-2009)" (p. 366). While college student suicide rates are still lower than the national average, the degree to which being a student provides a suicide-protective benefit has diminished.

Suicidal ideation has been associated with poor psychological functioning (Reinherz, Tanner, Berger et al., 2006), future depressive disorders (Fergusson, Horwood, Ridder, & Beautrais, 2005; Steinhausen & Metzke, 2004), school dropout (Daniel, Walsh, Goldston et al., 2006), risky sexual behavior (Burge, Felts, Chenier et al.,

1995), aggressive behavior (Garrison, McKeown, Valois, & Vincent, 1993) and substance abuse (Fergusson et al., 2005). Additionally, Fergusson et al. (2005) found that students who struggle with suicidal ideation often experience a negative impact in their academic performance, with their interpersonal relationships, and there is also an emotional and financial toll. Further, suicidal thinking places students at an increased risk for contemplating and attempting suicide again later in life (Drum, Brownson, Burton Denmark, & Smith, 2009; Joiner et al., 2005; 2009; Brent, Johnson, Bartle et al., 1993). Drum and colleagues (2009) examined the subjective experience of college students' suicidality and found that over half of college students had experienced some thoughts about suicide during their lifetime and 18 percent of undergraduate students had seriously contemplated attempting suicide. These findings emphasize that the concern is not only for those students who die by suicide, but also for those who ideate, plan, attempt, and seriously consider taking their lives.

In addition to serious contemplation of suicide, countless students struggle with other mental health issues, including high levels of distress. Suicide is not the only mental health challenge faced by college students: depression, anxiety, non-suicidal self-injury, disordered eating, and many other forms of mental illness pose significant challenges to students' wellbeing and are as prevalent among college students as same-aged non-students (Blanco, Okuda, Wright et al., 2008). The challenge for college counseling centers, administrators, and clinicians is to understand how college students experience various forms of distress, as well as suicidality. And, to discover what factors may

contribute to or protect them against progressing to intense levels of suicidal behaviors and the risk of ultimately dying by suicide.

The recent high-profile suicide-related events on college campuses and the after-effects of media coverage of these tragedies have increased concern of mental health professionals (Drum et al., 2009). The mental health field, along with college administrators and national policymakers, are progressively more involved with the demanding task of not only attempting to decrease suicide among the college student population but also protecting their colleges and universities from liability (Drum et al., 2009). Unfortunately, many colleges find it difficult to fund requests to increase their mental health services and prevention efforts due to no increase in funding or budget(s). Acknowledging the severity of this problem in 2004, the U.S. House of Representatives passed the Garret Lee Smith Act (GLSA), which allocated $82 million to increase screening and prevention programs on college campuses (Stephenson, Pena-Shaff, & Quirk, 2006).

Despite the enactment of the GLSA, much is still unknown about the factors that prevent students from beginning to have thoughts about suicide or those that help to counteract students from having more severe and lethal thoughts about suicide. Increasing efforts to explore protective factors is vital because the targeted interventions may improve the overall wellbeing and resilience of the college student population, which may reduce the risk of suicidality on college campuses. One factor that has recently gained attention is the role of connectedness, which has been recognized as being intrinsically linked to health and wellbeing (Armstrong & Oomen-Early, 2009;

Baumeister & Leary, 1995; Joiner, Van Orden, Witte, & Rudd, 2009) and is theorized to play an important role in preventing the desire for death (Joiner, 2005). In fact, increasing connectedness on college campuses and across communities has been determined as a key strategy for national suicide prevention, both for college campuses and on a nation-wide level (SPRC, 2004; CDC, 2008). However, much has yet to be discovered with *how* connectedness manifests for the college student population. With a fuller understanding of the ways in which college student experience connectedness, college administrators may have opportunities to implement or expand population-based strategies to help foster a stronger sense of community on their campuses, thus bolstering the wellbeing of their students and prevent debilitating distress and suicidal behavior.

Several studies have examined the relationship between students' participation in sports and connectedness, finding higher levels of psychosocial functioning and a protective influence on suicidal behaviors (i.e. Harrison & Narayan, 2003; Sabo, Miller, Melnick, Farrell, & Burns, 2005; Taliaferro, Rienzo, Miller, Pigg, & Dodd, 2008). However, only a few have looked specifically at the college student population (i.e. Armstrong & Oomen-Early, 2009; Brown & Blanton, 2002; Arria, O'Grady, Caldeira, Vincent, Wilcox, & Wish, 2009) and virtually no studies have sought to understand if membership in other types of college extra-curricular activities fosters a sense of connectedness, and in doing so, protects students from distress and suicidal thoughts.

The current exploratory study builds upon existing research by examining more closely the relationship between connectedness, distress, and suicidal thinking. Moreover, it examines the role that gender, sexual orientation, and membership in student groups

may have with connectedness, distress, and suicidal thoughts. This information contributes to an improved understanding of the factors that may protect people from suicidal thoughts and enhance campus suicide prevention efforts, with the aim of bolstering the mental health of the college campus community.

Chapter Two: Review of the Literature

Distress Among College Students

Students have more opportunities than ever before to engage in organized groups on campus and extracurricular activities of many kinds. However, many students also experience a faster pace of life than past generations and live in a culture that has contributed to staggering levels of perceived isolation and anxiety (Whitlock, 2007). In other words, despite living in an age of hyper-engagement, convenient and constant forms of online communication, and an ever increasing presence of social media, young adults may be under-connected to the internal and external experiences that tend to help them feel like they matter and belong (Whitlock, Powers, & Eckenrode, 2006).

Further, while transition to college can be exciting and positive for many students, for others it can be isolating and extremely difficult. Students move away from home for the first time and experience disruptions in their long-standing relationships. Moreover, they experience a gap in sources of social support and support for coping, which can all be destabilizing and significantly interfere with emotional and mental health functioning (Dyson & Renk, 2006; Stroebe, Van Vliet, Hewston, & Willis, 2002). There is some debate about whether or not students experience more mental health problems today than in the past (Kitzrow, 2009) because some of the findings in the literature may reflect increases in help-seeking behavior as opposed to increases in the overall prevalence of disorders. It is important to note, that although college mental health professionals report increased numbers of students seeking mental health services, research also indicates an increase in the severity of the presenting cases (Hunt & Eisenberg, 2010). Even with the

speculation that more students are seeking mental health services, the American College Health Association-National College Health Assessment (ACHA-NCHA) (2008) found that only 24% of those diagnosed with depression were receiving treatment, and less than 20% of those with anxiety disorders reported receiving treatment (Blanco et al., 2008). The challenge for college counseling centers, administrators, and clinicians is to understand how college students experience various forms of distress, as well as the factors that may contribute to the increasing severity of distress that leads to suicidal thoughts and behaviors.

College Student Suicidality

In light of the challenges related to the transitions to college and the understanding that many serious mental health problems often emerge in late adolescence (Whitlock, Muehlenkamp, Purington, Eckendrode, Barreira, Abrams et al., 2011), it is not surprising that suicide is the second leading cause of death among college students (Schwartz, 2011; 2006b). It is estimated that 1,100 college students die by suicide every year – an average of three per day (AAS, 2006; National Mental Health Association/The Jed Foundation, 2002). Furthermore, 1.5 percent of the college population reports having made at least one suicide attempt in their lifetime (ACHA, 2006). Recent research also indicates that rates of completed suicides on college campuses are 50 percent lower than the national average (Silverman et al., 1997; Schwartz, 2006b). However, as stated earlier, the level of protection provided by being a student has lessened (Schwartz, 2011), meaning that the gap between students and the non-student national suicide rates has gotten smaller.

Recent research has shed light upon the possible contributing factors that help to explain the disparity between national and college suicide rates (Schwartz, 2006b; 2011), including: lower cost of health services on college campuses; prohibition of fire arms on college campuses; and heavy monitoring of alcohol and substance use (Silverman et al., 1997; Schwartz, 2011). Additionally, the decreasing proportion of men in college can explain the decline, as the suicide completion rate of men in college is higher than for women (Silverman et al., 1997).

Drum and colleagues (2009) discovered important findings from a nation-wide survey, which examined self-report data from students from over 70 colleges across the country. They found that suicidal thinking is far more common than many may realize, with over half of college students in their sample reporting some form of suicidal thinking in their lives. Furthermore, 18 percent of undergraduate students reported having seriously considered attempting suicide. Disturbingly, among those who had seriously considered suicide, 47% had three or more periods of serious ideation. Moreover, the exploratory study also revealed that 6 percent of undergraduates reported seriously considering attempting suicide in the past 12 months (Drum et al., 2009). These findings suggest that by the time students undergo a suicidal crisis in college, they are likely to have already had significant previous experiences with suicidality. Further, it suggests that suicidal ideation and attempts present a prevalent and recurrent problem for the college students across the country. Disturbingly, studies also suggest that the majority of college students who seriously consider suicide never seek mental health services (Drum et al., 2009; Gallagher, 2009; Kisch, Leino, & Silverman, 2005), meaning that many

students who complete suicide and also those who consider attempting suicide are often left unknown by campus professionals.

Theories of Suicide and Prevention Efforts

This section will discuss the main theories of suicide from past until present. Each of these theories is able to explain part of the landscape of suicidal behavior. A consistent theme and common thread exists amongst them: people who consider suicide tend to feel detached and disconnected from themselves and many feel isolated from the world around them. This section will also walk the reader through several of the main advancements in the United State's large-scale efforts to prevent suicide. Finally, this section will discuss the dramatic increase in suicide intervention and prevention efforts on college campuses over the past two decades.

Emile Durkheim: Failure of social integration.

Emile Durkheim (1858-1917), a French sociologist, developed a method of study and research that became the foundation for scientific inquiry about suicide (Durkheim, 1897/1963). He was the first researcher to consider the role of belongingness with suicide over a century ago. His seminal work titled, *Le Suicide* (1897), proposed that suicide could be explained as a result of a failure of social integration. His theory stated that people who are well integrated into society by multiple and strong relationships are unlikely to commit suicide, whereas un-integrated people who perceive themselves to be marginalized, are much more likely to kill themselves. According to Durkheim (1963), too little social integration leads to an increase in suicide because individuals lack a connection to something that transcends themselves. While somewhat controversial, his

theory remains a mainstay in the social sciences and studies continue to show that a lack of social integration increases the likelihood of suicide. The central tenet of his theory is that strong social ties are associated with a lower risk of suicide and, furthermore, societal forces can have both positive and negative effects on people.

U.S. begins efforts to prevent suicide.

Several decades after Durkheim's death and after many years of little advancement in the field of suicidology, the United States began large-scale efforts to prevent suicide. In 1958, through funds from the U.S. Public Health Service, the first suicide prevention center was established (National Strategy for Suicide Prevention [NSSP], 2001). A more direct Federal role in suicide prevention began in 1966 when the Center for Studies of Suicide Prevention was established at the National Institute of Mental Health (NIMH) (NSSP, 2001). During the next two decades, the American Association of Suicidology (AAS) and the American Foundation for Suicide Prevention (AFSP) were established. In 1983, the CDC established a violence prevention unit that shed light on the increase in youth suicide rates (NSSP, 2001). In response, the government created task forces in order to increase knowledge of risk factors for youth along with interventions that may curtail the increasing rates of suicidal behaviors. The next advancements included the United Nations (UN) combining efforts with the World Health Organization (WHO) to create an international strategy, which involved grassroots advocacy organizations, suicide attempt survivors, family members of people who completed suicide, and community activists who all encouraged the development of a national suicide prevention strategy for the U.S. (NSSP, 2001).

These advancements led to the landmark *Mental Health: A Report of the Surgeon General* (Satcher, 1999) and *Healthy People 2010* (Davis, 1998), and most recently the development of the *National Strategy for Suicide Prevention: Goals and Objectives for Action* (Department of Health & Human Services [DHHS], 2001), which has been a process to promote more investment in the goals of suicide prevention and to foster broad collaboration in prevention activities. The National Strategy endorses suicide prevention as a comprehensive and integrated approach to reduce the loss and suffering from suicide and suicidal behaviors across the life course. It encompasses the promotion, coordination, and support of activities that will be implemented across the country (as culturally appropriate), along with integrated programs for suicide prevention among Americans at national, regional, tribal, and community levels (NSSP, 2001).

Edwin Shneidman: Suicide as psychache.

In addition to the national public health approach to suicide prevention, the field of psychology began to build upon Emile Durkheim's work and delved into theories of what contributes and prevents one from suicidal thoughts, behaviors, and attempts. Viable theories other than Durkheim's eventually emerged in the latter half of the twentieth century. One of the most prominent theorists, and one of the originators of the first suicide prevention center previously mentioned, is Edwin Shneidman. Shneidman's views on suicide can be described as centering on thwarted psychological needs (Joiner, 2005). In his book, *Suicide as Psychache*, Shneidman (1993) defines psychache as "the psychological and emotional pain that reaches intolerable intensity; it's the hurt, anguish, soreness, aching, psychological pain in the psyche, the mind" (p. 51) and the primary

contributing cause of suicidal behaviors. He posits that psychache is unable to be tolerated because it results from basic needs that have been thwarted. He emphasizes that depression is quite different from suicide because a person can live a long and mostly happy life with depression, which is not true of an acutely suicidal state (Shneidman, 1993). He comments that depression never causes suicide; rather, suicide results from severe psychache – coupled with dysphoria, constriction of perceptual range, and the idea that death is preferable to life. By themselves, the clinical symptoms of depression are debilitating, but, by their nature, Shneidman describes, not deadly.

Roy Baumeister: Theory of belongingness.

Similar to Durkheim, social support is integral to Roy Baumeister's Theory of Belongingness, as social support is based on relationships and positive interactions with others. Baumeister and Leary (1995) refer to the theory of belongingness as human beings' pervasive drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships. They specify that satisfying the drive involves both the need for frequent, affectively pleasant interactions with a few other people. Secondly, these interactions must take place in the context of a temporally stable and enduring framework of affective concern for each other's welfare. In other words – "frequent interaction plus persistent caring" (p. 497).

Baumeister depicts the human being as innately driven toward establishing and sustaining belongingness. The natural quality presumably has an evolutionary basis. Competition for limited resources could also provide a powerful stimulus to form interpersonal connections, social groups, and lasting relationships in order to defend

oneself and protect one's resources against external threats (Baumeister & Leary, 1995). The theory of belongingness includes the tendency for people to experience affective distress when deprived of social contact or relationships, and an inclination to feel pleasure or positive affect from social contact and relatedness. Furthermore, Baumeister (1990) suggests that these affective mechanisms would stimulate learning by making positive social contact reinforcing and social deprivation punishing. If the need to belong is a fundamental need, then aversive reactions to a *loss* of belongingness may go beyond negative affect to include psychological dysfunction and distress, ranging from eating disorders to suicide (which are more common among people who are unattached). In sum, according to Baumeister and Leary (1995) people who are more socially connected report less psychological distress, including depression and low self-esteem, than people who are less connected.

David Rudd: Suicidal mode.

In addition to the past advancements in our attempts to understand suicidal behavior, David Rudd's (2001) cognitive behavioral conceptualization of the *suicidal mode* is one that is both empirically supported and clinically relevant. Rudd describes how the ten axioms of cognitive therapy, by Alford and Beck (1997), can be translated into "fundamental assumptions" (Rudd, Joiner, & Rahab, 2001, p. 22) when mapped onto suicidality and treatment. Rudd et al. (2001) break these assumptions down into the following: 1). The central pathway for suicidality is cognition (as in the private meaning assigned by the individual, called the *suicide belief system*). 2). The relationship between the *suicide belief system* (i.e. cognitive triad specific to the *suicide mode*) and the other

psychological and biological/physiological systems is interactive and interdependent. Rudd (2001) defines the suicidal belief system as the "representative triad, along with the conditional assumptions/rules, and compensatory strategies" (p. 25). 3). The *suicidal belief system* will vary from person to person, but there will also be commonality of identified *categories* (as in helplessness, feeling unlovable, and poor distress tolerance), which are all clouded by a pervasive sense of hopelessness. 4). People are predisposed to suicidality as a function of cognitive vulnerabilities, or *faulty cognitive construction*, which covary with certain patterns of comorbid syndromes and pathologies. 5). Suicidality and the *suicide belief system* reside at three levels, the automatic level, conscious level, and the unconscious level, with the conscious levels most amenable to therapeutic change. Rudd et al. (2001) states that the structural content of the suicide belief system, at all three levels, is contained within the *suicidal mode*.

Thomas Joiner: Interpersonal theory of suicide.

Current research has also begun to examine various components of the *Interpersonal Theory of Suicide*, which builds upon previous theories in its proposal that "an unmet need to belong is the specific interpersonal need involved in one's desire to end his or her life" (Baumeister & Leary, 1995, p. 1). The foundation of the theory is based upon three constructs, which are central to suicidal thoughts and behaviors; two primarily related to suicidal desire – thwarted belongingness and perceived burdensomeness – and one primarily related to capability – acquired capability for suicide (Van Orden et al., 2010). Thomas Joiner's Interpersonal Theory maps onto

Baumeister and Leary's (1995) first facet of the need to belong, with an individual's need for frequent and positive interactions (Van Orden et al., 2010).

Joiner and colleagues (2009) describe one's *failed belongingness* as loneliness and social alienation; it is the experience that one is alienated from others and not an integral part of a family, friends, or other valued groups. *Perceived burdensomeness* is a self-view that includes low self-esteem but goes further. The concept suggests that a person perceives him or herself as flawed, such that not only is the self brought down, but also simply existing in this world burdens family, friends, and even society (Joiner et al., 2009). The third piece to the Interpersonal Theory of Suicide is the *acquired capability* to enact lethal self-injury or suicide and the desire to do so. Joiner and colleagues (2009) theorize that those who complete suicide have acquired the capability to enact lethal self-injury, perceive they are a burden on loved ones, and feel they do not belong to a valued group or relationship (Joiner et al., 2009). According to this theory, the most dangerous form of suicide is caused by the simultaneous presence of these two interpersonal constructs, thwarted belongingness and perceived burdensomeness (Van Orden et al., 2010).

Suicide Behavior Warning Signs

The standardization and dissemination of warning signs for suicide have considerable appeal from both public health and clinical perspectives. Warning signs for suicide are regularly distributed to teachers, mental health professionals, primary care providers, as well as students, as part of suicide awareness curricula and programs administered in school districts and college campus education programs across the

country. Rudd (2008) asserts that it is important to differentiate between a sign (something observed by another) and a symptom (something reported to another); warning signs and risk factors are different constructs. Warning signs for suicide relates to one's current functioning, with a proximal rather than distal relationship to suicide behavior. Rudd (2008) goes on to suggest that warning signs help to assess what a client is doing (observable signs) or saying (expressed symptoms) that elevates his or her risk to die by suicide in the next few minutes, hours, or days.

Rudd et al. (2006) gives the following definition of a suicide warning sign, "A suicide warning sign is the earliest detectable sign that indicates heightened risk for suicide in the near term (i.e. within minutes, hours, or days). A warning sign refers to some feature of the developing outcome of interest (suicide) rather than to a distinct construct (e.g., risk factor) that predicts or may be related to suicide" (p. 258). An expert panel from the AAS agree on the following warning signs for suicide: hopelessness, rage/anger/seeking revenge, acting reckless or engaging in risky activities seemingly without thinking, feeling trapped (like there's no way out), increasing alcohol or drug use, withdrawing from family/friends/society, anxiety/agitation/ inability to sleep/sleeping all the time, dramatic mood changes, and no reason for living/no sense of purpose in life (www.suicidology.org).

Suicide Risk factors

Risk factors are, "well-defined constructs that are empirically derived and population dependent, including both clinical and nonclinical samples" (Rudd et al., 2006, p. 17). The literature differentiates between static variables (those that are

descriptive and enduring in nature) and dynamic variables (those that are more acute and alterable, varying in their meaning to the patient, intensity, and occurrence over time) (Rudd et al., 2001). Furthermore, risk factors are classified into proximal or distal. Proximal risk factors are situational, such as having access to a gun or a recent stressful event, which may occur leading up to a suicidal act (Moscicki, 1995). Distal risk factors include emotional vulnerabilities or character traits such as depression, impulsive behavior, or poor coping skills (Berman, Jobes, & Silverman, 2006).

Additionally, without the presence of a distal risk factor, a proximal risk factor may not result in suicidal behavior. Many studies have provided solid evidence regarding static and dynamic risk factors for adolescent and adult suicidal behavior, but research is more limited and yields conflicting results for young adults, and especially college students (Wilcox et al., 2010; Goldston et al., 2009). The period of adolescence through early adulthood and the transition to college and living independently in many cases are high-risk times for suicidal behaviors (Goldston et al., 2010; Arnett, 2000). Because of the overwhelming number of risk factors that have been identified in the literature, the risk factors that have been most consistently found to be significant for young adults will be discussed.

Gender disparities.

In terms of the difference between men and women in college and their non-collegiate counterparts, the suicide rate for college males is significantly lower than the rate for males nationally, with a relative risk of .53 the national sample. The rate for female students does not differ significantly from females nationally (Schwartz, 2011).

Research indicates that men are four times as likely than women to *die* by suicide, while women are three times as likely as men to *attempt* suicide (Silverman et al., 1997; CDC, 2010; Joiner, 2005).

This gender difference is labeled by suicidologists as the "gender paradox of suicidal behavior" (Canetto & Sakinofsky, 1998; Schrijver, Bollen, & Sabbe, 2011), which refers to the trend of females having higher rates of suicidal ideation and behavior than males, yet mortality from suicide is typically lower for females than for males. Limited research has examined the degree to which this gender paradox is present for college students. However, a recent review of the literature suggests that females engage in suicide ideation, plans, and attempts at higher rates than males in this age group, while adolescent males have been shown to complete suicide at higher rates than adolescent females (AAS, 2010) (for review see Evans, Hawton, Rodham, & Deeks, 2005). Women are also more likely to screen positive for major depression and anxiety disorders (Eisenberg, Gollust, Golberstein, & Hefner, 2007). Studies have shown that the pattern of male lethality is in part explained by their tendency towards highly lethal means (Joiner, 2005), with almost 60 percent using firearms to complete suicide (CDC, 2010). On the other hand, women attempt suicide more frequently but utilize less lethal means (Joiner, 2005), with about 40 percent choosing poison (i.e. overdosing) (CDC, 2010). Some studies have found conflicting results with the protective quality of college for students who differ demographically. For example, Stephenson et al. (2005) found that suicide rates for older women (over 25-years old) have a suicide rate that is 169% of the national rate for women of the same age range.

Ethnicity/race disparities.

An important statistic about U.S. suicide demographics is that African Americans in general are less likely to endorse suicidal thoughts and behaviors as compared to Caucasians (McIntosh, 2002). This difference has been explained in regards to social support and religiosity. African Americans tend to experience more social support and tend to be more religious, some researchers propose that these protective factors contribute to African Americans being less likely to endorse suicidal behaviors (Lester & Yang, 1999). However, there has been a recent increase in death rates by suicide among African American men in the last thirty years. This increase is accounted for mostly by the rise in suicide rates by young African American males. However, the suicide rate among African American females has decreased (Cavanagh, Carson, Sharpe, & Lawrie, 2003). In terms of adolescents, epidemiological trends are changing as well, with African American teens making serious attempts as often as, or more often than White teens (Brener et al., 2000).

Hispanics in the United States have relatively low rates of suicide compared to the national rate. However, recently Hispanic and African American female high school students reported an increase in suicide attempts, compared to White non-Hispanic female students (CDC, 2010). Additionally, Puerto Ricans tend to report higher rates of suicidal ideation and attempts than either Mexican Americans or Cuban Americans (Ungemack & Guarnaccia, 1998). Overall, Native Americans die by suicide at higher rates than other people in the United States, about 1.8 times the rate of the national average (CDC, 2010; Van Winkle & May, 1993). Students of Asian decent are more

likely to report suicide-related behaviors than both Caucasian and African American students (Gutierrez, Muehlenkamp, Konick, & Osman, 2005; Kisch, Leino & Silverman, 2005). Wong, Brownson, and Schwing (2011) studied a sample of Asian American college students from across the U.S. and discovered that among Asian Americans who seriously considered suicide in the past 12 months, recent family, academic, and financial problems were the top three stressors occurring before the development of suicidal thoughts. These above mentioned studies highlight that while historically certain ethnicities have been less likely to experience suicidal thoughts and behaviors compared to Caucasians, changes are occurring within certain racial/ethnic groups. For some, the gap is closing. The recent increase in suicide related behaviors with ethnic minority adolescents and young adults points to the decline in ethnicity/race serving as a protective factor.

As mentioned above, the majority of people with diagnosable mental disorders do not receive treatment (U.S. Public Health Services, 1999) and studies suggest that the majority of college students who endorse suicidal thoughts tend to not seek mental health treatment (Drum et al., 2009). Similarly, racial and ethnic minorities are usually less likely to seek treatment for various reasons, including cultural and language differences (Buchanan, Flowers, Salami, & Walker, 2011). Stigma and embarrassment have also been proposed for reasons why students do not seek treatment (Department of Health & Human Services [DHHS], 2000). For example, the dominant role of stigma has been highlighted particularly among the African American community, which has traditionally not discussed issues related to mental health openly. It is this silence and stigma that

many see as contributing to the increasing rates of suicide among certain members of the African American community (Poussaint & Alexander, 2000). Likewise, with other ethnic minorities, Buchanan et al. (2011) emphasizes that it is unclear whether these factors translate to other members of the community, such as college students, or whether a unique set of factors impact suicidality among these groups. More research needs to be done in order to understand more fully, if the ethnic and cultural landscape of the non-college student parallels ethnic minorities in college.

Sexual orientation.

Because existing empirical research on distress and suicide among lesbian, gay, bisexual, and transgender (LGBT) college students is limited, previous studies in the larger context of the research literature on LGBT distress and suicide is discussed. Compared with their heterosexual peers, LGBT adolescents and young adults report elevated rates of suicidal ideation and attempted suicide (D'Augelli, Hershberger, & Pilkington, 2001; Remafedi, French, Story, Resnick, & Blum, 1998; Faulkner & Cranston, 1998; Bagley & Trembly, 1997; Remafedi, 2002; Kitts, 2005). Lifetime suicide attempt rates in the LGB population range from 10% to 40%, (Hershberger, Pilkington, & D'Augello, 1997; Remafedi, French, Story, Resnick, & Blum, 1998; Fergusson, Horwood, & Beautrais, 1999; Herrell, Goldberg, True, et al., 1999; Van Deering, & Vincke, 2000; D'Augelli et al., 2001; Wichstrom & Hegna, 2003; D'Augelli, Grossman, Salter, Veasey, Starks, & Sinclair, 2005; Ryan, Huebner, Diaz, & Sanchez, 2009) compared with 0.4% to 5.1% (Nock, Borges, Bromet, Cha, Kessler, & Lee, 2008) in the heterosexual population.

According to the minority stress model (Meyer, 2003) the excess prejudice, stigma, and discrimination encountered by sexual minority individuals lead to increased mental health problems in this population as well as a resulting increased risk of suicide. Explanations for disparities in suicide rates between the LGB and heterosexual populations often cite the increased prevalence of such problems, including depression and substance abuse (Russell & Joyner, 2001). Researchers primarily looking within LGB samples have described additional risk factors related to minority stress, prejudice, stigma, and discrimination, including gender atypical behavior (D'Augelli et al., 2005; Remafedi, Farrow, & Deisher, 1991), family rejection (Ryan et al., 2009) and early age of self-labeling (Remafedi et al., 1991).

Previous suicide attempts.

The existence of a previous suicide attempt is possibly the strongest predictor of subsequent suicidal ideation, (Joiner et al., 2005) suicide attempts, (Maser et al., 2002; Putnins, 2005) and death by suicide (Brown, Beck, Steer, & Grisham, 2000; Maser et al., 2002; Tidemalm, Elofsson, Stefansson, Waern, & Runeson, 2005; Zonda, 2006) and furthermore, multiple attempts make it worse (Joiner et al., 2005). Joiner and colleagues (2003; 2005) tested this proposition in an article describing what they came to call the "kitchen sink" studies. In four separate studies with samples ranging from U.S. undergraduates to psychiatric patients in Brazil, they controlled for: age, marital status, ethnicity, family history of suicide, depression, bipolar disorder, alcohol abuse, personal history of legal trouble as an adult and as a juvenile, current and past diagnoses of depression, hopelessness, problem-solving difficulties, borderline personality symptoms,

drug dependence symptoms, alcohol dependence symptoms, and negative life events (Joiner et al., 2003; 2005). Across all four studies, there was a clear association between past and future suicidality, even when the (above) list of powerful suicide-related covariates—everything but the kitchen sink—was controlled for (Joiner et al., 2003; 2005). The relation of past to future suicidality persisted, even when their list of suicide-related variables was statistically accounted for.

Psychosocial factors.

Heisel, Flett, & Hewitt (2003) conducted the first study on the examination of social hopelessness and suicidality among college students. They found that suicidal ideation is significantly associated with daily stress, depression, general hopelessness, and social hopelessness. The authors also found that students may remain hopeful in their ability to attain achievement-related goals yet remain vulnerable to their interpersonal losses and negative social interactions related to feelings of social hopelessness (Heisel et al., 2003). Researchers have found strong associations between suicidal ideation and depression, followed by hopelessness, and loneliness (Schwartz & Friedman, 2009; Furr, Westerfield, McConnell, & Jenkins-Marshall, 2001; Weber et al., 1997). Studies also indicate that for some young people, additional contributing factors may include an increase in conflict with the family, academic difficulties, and challenges with interpersonal relationships (Daniel & Goldston, 2009). Additionally, students from lower socioeconomic backgrounds are at a high risk for depressive and anxiety symptoms, (Weitzman, 2004; Eisenberg et al., 2007; Cuellar & Roberts, 1997) which may contribute to an elevated risk for suicidal behaviors.

Research also suggests that high risk for suicide attempts during adolescence has been linked to psychiatric disorders (Joiner, 2009), substance use (Goldston et al., 2009; Kessler et al., 2005), risky behaviors (Arnett, 2000) and history of abuse (Molnar, Berkman, & Buka, 2001). Furthermore, using National Comorbidity Survey data, Joiner and colleagues (2005) assessed individuals with a family history of childhood verbal abuse, physical abuse, sexual abuse, or molestation. They found that participants who had been physically or sexually abused were more likely than those who had been verbally abused or molested to have a lifetime suicide attempt, even when controlling for numerous covariates (Stellrecht et al., 2006). Read, Agar, Barker-Collo, Davies, & Moskowitz (2001) found that adult current suicidality was predicted more strongly by child sexual abuse (experienced on average 20 years previously) than by a current diagnosis of depression.

Drug abuse and dependence also points to being another risk factor contributing to suicide behaviors. Of various types of drugs people abuse, heroin users are more likely than community sample peers to attempt and die of suicide (Darke & Ross, 2002). Its interesting to note that overdoses play a small role in suicide amongst this population, suggesting that it is not merely having access to drugs, but the lifestyle of a serious drug user that may escalate suicidality.

You, Van Orden, and Conner (2011) found that all indices of social connectedness—interpersonal conflict, low perceived social support, low belongingness, and living alone—were all associated with an increased probability of a history of suicide attempt and history of ideation (with the exception of living alone, which was associated

with attempt only). The authors also found that interpersonal conflict and belongingness were significant predictors of a history of suicidal ideation, and belongingness, perceived social support, and living alone were significant predictors of suicide attempt. Thus, the authors concluded that indices of current social connectedness, at several levels of analyses, were associated with lifetime histories of suicidal ideation and attempt (You et al., 2011).

In the book, *The Interpersonal Theory of Suicide: Guidance for Working with Suicidal Clients*, Joiner (2009) states that most individuals who die by suicide have an Axis I disorder at their time of death. However, it should also be noted that more than 95 percent of people with even severe psychopathology do not die by suicide. Joiner (2009) suggests that certain mental disorders do confer risk of suicide, and in particular, major depressive disorder, bipolar disorder, schizophrenia, and borderline personality disorder lend the greatest risk. Although relatively few people with depression die by suicide, the majority of people who do (roughly 60 percent) experienced depression in their lifetime (Lonnqvist, 2008). Further, claiming the view that suicide is simply a result of depression ignores the fact that most people with depression do not attempt, let alone die by suicide. There is a substantial increase in risk with people who struggle with depression; however, the suicide rate in the population is low; therefore, an increase in risk does not translate into a large overall percentage (Joiner et al., 2009).

Both anorexia and bulimia are also associated with an elevated risk of suicide; however, anorexia is substantially more connected with completed suicides than is bulimia (Crisp, Callender, Halek, & Hsu, 1992; Moller-Madsen, Nystrup, & Nielsen,

1996). There is also evidence that people who suffer from anorexia have less social support from important people in their lives, compared to those without eating disorders. Furthermore, they are less likely to have a romantic partner and research indicates that symptoms of anorexia place a great deal of strain on relationships (Tiller, Sloane, Schmidt, Troop, Power, & Treasure, 1977) and these people may experience more perceived isolation than others.

Protective Factors

A singular focus on risk factors neglects the exploration of the strengths and resilience characteristics that allow people to tolerate distress without progressing to suicidal thoughts. It is evident that suicide-related behaviors are complex and involve multiple factors and determinants. Westefeld, Richards, & Levy (2011) suggest that is important to consider protective factors for several reasons. Firstly, they explain that while identifying risk factors is important, identifying protective factors allow a more proactive versus a reactive stance concerning suicide. Secondly, they suggest that protective factors may have a longer-term impact for a greater number of people. Thirdly, the authors illustrate that protective factors may have implications for both prevention and postvention. Meaning, the use of protective factors may help the field to more specifically plan effective prevention as well as develop interventions and programs for people who have potentially been affected by suicide or suicide attempts.

Furthermore, both risk and protective factors may occur simultaneously, which creates an overall level of risk. Where risk factors increase one's vulnerability to suicide, protective factors decrease that risk and tend to increase one's quality of life, thereby

buffering them from distress levels that might lead one to suicidal thoughts. Protective factors are not defined by the absence of a risk factor. Rather, it is a third variable that modifies the strength or direction of the relation between a risk factor and outcome (Cha & Nowak, 2009). In other words, there are factors that can buffer the influence of stressful life events on the likelihood of a suicide attempt.

Research suggests that environmental factors such as reduced accessibility to firearms (Brent, Perper, Moritz, Baugher, & Allman, 1993; Shenessa, Rogers, Spalding, & Roberts, 2004; Schwartz, 2011), religious affiliation (Dervic, Oquendo, Grunebaum, Ellis, Burke, & Mann, 2004; Greening & Stoppelbein, 2002), and social support (Borowsky, Ireland, & Resnick, 2001; O'Donnell, O'Donnell, Wardlaw, & Stueve, 2004; Resnick, Bearman, Blum, et al. 1997) may moderate the impact of stressful life events on suicide risk. In addition, it is possible that people who are adept at perceiving, integrating, understanding, and managing their emotions could be at a reduced risk for suicidal behaviors (Cha & Nowak, 2009).

Connectedness

One protective factor gaining interest in the field of suicidology and college student mental health is connectedness. Research indicates that college students who report they have a healthy separation from their parents and who also report high connectedness with their peers at school, have higher psychological wellbeing (i.e. fewer psychosomatic and depressive symptoms, and somewhat higher positive affect) than students who report low levels of connectedness and low on their ability to separate from their parents (Yelle, Kenyon, & Koerner, 2009). Along the same lines, parent-family

connectedness emerged as a protective factor for attempting suicide that cross-cut the gender and racial/ethnic groups of adolescents studied. Researchers also found that teens' connectedness to school offered a protection from students attempting suicide (Borowsky, Ireland, & Resnick, 2001).

Arria and colleagues (2009) found strong correlates of suicidal thoughts among college students. The authors discovered that although depression is clearly a risk factor for suicidal ideation, the majority of individuals with suicidal thoughts did not meet the criteria for high depressive symptoms. The findings suggest that ideation occurs frequently in the absence of clinically significant depressive symptoms among college students. The authors also found that a lack of social support was a prominent risk factor for ideation, irrespective of the presence of high depressive symptoms. Lastly, results also indicated that the parent-student relationship was a particularly important correlate of ideation; high-levels of conflict with either parent increased the likelihood of suicidal thoughts.

Bronfenbrenner's ecological model suggests that at any given time, human beings occupy multiple diverse social ecologies (e.g. family, peers, school, fraternities or sororities, social groups, etc.) (Bronfenbrenner & Morris, 1998). Some of these systems are more proximal than others, meaning, that they are more likely to influence daily functioning and be emotionally salient to a student. Therefore, individuals may experience high degrees of connectedness to one individual or a collection of people and low connectedness with others. The degree of protection conferred by such connectedness or lack thereof, depends on a variety of factors. It is likely to be affected

"by the nature of shared norms and beliefs and the way in which experiences of connectedness in the different social ecologies one inhabits (e.g. peer groups or family) interact to produce or thwart an overall sense of mattering and embededness" (Whitlock et al., 2011, p. 9). In other words, people experience an overall sense of connectedness as a result of the different groups to which they belong and the shared norms and beliefs that are cultivated.

Connectedness Lexicon

In an era when some people are considered "connected" by their number of Facebook friends and Instagram followers, it is important to consider that while people may appear to be meaningfully connected on the outside, they may feel internally insolated. Private isolation, feeling misunderstood by others or even the world, or like no one cares, can cause an internal conflict between the public and private self that may make suicide seem like the only way out (Whitlock et al., 2011). Although connectedness may seem to be observable or implied (e.g. by having a large group of friends), researchers suggest that it is not the observed state but the *perceived* state that serves as the best indicator for one's connectedness (Whitlock, Muehlenkamp, Purington et al., 2011).

Although thwarted social connectedness, belongingness, and connectedness have been widely promoted as useful constructs for understanding the mechanisms in suicidal behavior, precise definitions remain elusive (Barber & Schluterman, 2008). In a review of the literature by Towsend and McWhirter (2005), the researchers suggest that the definition of connectedness may vary as a function of the construct's evolution over time.

They also illustrate that because connectedness has multiple dimensions, thus researchers often describe connectedness in a variety of ways in different studies. This next section aims to further explain the similarities and differences in terminology.

Social connectedness is considered to be a relational schema or a cognitive structure representing regularities in patterns of interpersonal relatedness. In an earlier study, Hagerty, Lynch-Sauer, Patusky, and Bouwsema (1993) present social connectedness as occurring "when a person is actively involved with another person, object, group, or environment, and that involvement promotes a sense of comfort, wellbeing, and anxiety-reduction" (p. 293).

While *belongingness* is similar to the concept of connectedness (the two terms are often used interchangeably), it is slightly different. Belongingness is defined by group membership or peer affiliation (Baumeister & Leary, 1995). Hagerty and colleagues (1992) define belonging as the "experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment. A system can be a relationship or organization, and an environment can be natural or cultural" (p. 173). It is a dynamic cognitive-affective state rather than a stable trait (an individual's degree of belongingness is likely to vary over time), which is influenced by both interpersonal and intrapersonal factors

Lee and Robins (2000) define *connectedness* as an enduring and ever-present experience of the self in relation with the world. They assert that apart from other forms of belongingness, connectedness provides a personal sense of identity as well as a sense of place in society. Lee and Robbins (2000) suggest that connectedness *includes* a sense

of belonging and is based on the aggregate experiences of proximal and distal relationships (e.g. parents, friends, peers, stranger, community, and society). They state that connectedness "is an enduring and ubiquitous experience of the self in relation to the world, as compared with social support, adult attachment, and peer affiliations, which represent more discrete current relationships" (p. 484). In a more recent study using an adolescent sample, Whitlock (2007) suggests connectedness can be thought of as a psychological state in which individuals perceive that they and others are cared for, trusted, and respected individually and collectively. Whitlock also suggests that connectedness is mutual, not merely received but reciprocated as well. Some researchers also suggest that as people satisfy their need for connection, they are able to develop a stable, secure sense of connectedness (Baumeister & Leary, 1995; Kohut, 1984).

Thwarted Connectedness

Kohut (1984) (similar to Durkheim, Shneidman, & Baumeister) proposed that a lack of connectedness often comprises many of the problems clients present to counseling. Kohut (1984) also theorized about how chronic empathic failures to satisfy the need for belonging can profoundly affect one's sense of self. People spend considerable time maintaining existing friendships, developing new relationships, and participating in group activities. These social experiences reflect people's daily attempts to satisfy and sustain one of the most fundamental psychological needs – the need for belonging (Baumeister & Leary, 1995; Kohut, 1984; Lee & Robbins, 1995; 2000; Maslow, 1970).

In counseling, clients may present a cluster of signs and symptoms associated with a lack of connectedness, including few friendships, lack of group participation, feeling unrelated to others and even a lack of connection with society (Lee & Robbins, 2000). When thwarted belongingness or connectedness is prolonged, suicidal ideation tends to be more likely the result (Van Orden et al., 2010). Lee, Draper, and Lee (2001) suggest that people with low connectedness are more likely to negatively appraise the status and value of their relationships, display dysfunctional interpersonal behaviors and avoid social situations versus engaging in appropriate interpersonal behaviors. Also, people who tend to live in isolation have fewer opportunities to validate their sense of connectedness and belongingness and therefore experience greater psychological distress than their peers (Lee, et al., 2001).

In a review of the literature titled the *Health Consequences of Loneliness*, Blai (1989) found that if persistent, loneliness could be detrimental to one's mental health. Additionally, it can be a precursor for depression; it may jeopardize a person's psychological sense of wellbeing; and it may even increase the risk of suicide or suicidal ideation (Van Orden et al., 2010; Joiner, 2009; Blai, 1989). Moreover, one of the clearest findings in the literature on suicide indicates that individuals who complete suicide often experience social isolation and social withdrawal before their death (Trout, 1980). Further, suicide rates in the United States indicate that more single individuals die by suicide than married people (McIntosh, 2002), suggesting that the failure or loss of significant relationships may be a contributing factor to the desire for death (Stellrecht et al., 2006).

Connectedness and Gender

Research indicates that there may be gender differences in regards to how connectedness manifests for men and women. In a review of the literature, Townsend and McWhirter (2005) report that scholars have consistently characterized women (in Western cultures), who also view themselves, as more strongly connected to, rather than separate from, family members, friends, colleagues, and the wider social context. Moreover, scholars argue that there are fundamental differences in the ways in which women and men engage in relationships, with the central organizing principle in women's development being a sense of connection to others. Carver, Scheier, and Weintraub (1989) examined how undergraduates cope with stress, and discovered that women, more than men, reported that they usually sought social support for both emotional and instrumental reasons. Further, women tended to focus on venting emotions, while men reported turning to alcohol. The authors emphasized that this difference between men and women also held true with how students reported coping during a *specific* stressful situation, not just general coping mechanisms.

Although some authors have found clear gender differences in the nature of connectedness, implying that women value connectedness more than men, other studies have found that connectedness is equally salient for both genders; what may differ is *how* connectedness is experienced (Lee, & Robbins 2000; Lee, Kough, & Sexton 2002). Lee et al. (2002) discovered that men and women may differ in how they *experience* connectedness, with their social appraisals functioning differently from one another. The authors found that college women may perpetuate their lack of connectedness and

exacerbate feelings of distress through negative social appraisals. For example, they may view their college as an unfriendly and as a closed campus environment. On the other hand, men may report a lack of connectedness and greater distress because they perceive a loss of power and status in their relationships. For example, they may view their relationships as more competitive than collaborative and focus on their power and social status (Lee & Robbins, 2000).

Sports Participation as a Protective Factor

This section will provide an overview of studies that have examined the role college athletics and other extracurricular student activities may have on students' mental health, connectedness, distress, suicidal thoughts and behaviors. Because the literature is limited with examining the college student population, key studies that explored the nature of high school students and other related populations are also included.

Armstrong and Oomen-Early (2009) conducted a recent study with collegiate athletes and non-athletes, and found that student athletes had significantly greater levels of perceived self-esteem, social connectedness, and lower levels of depression. Furthermore, the authors assert that the positive influence of a social network and team support may be the variable that most profoundly protects student athletes from depression, demonstrating that the psychosocial outcomes of sports participation have a positive influence on mental health outcomes. Results also indicated that female non-athletes had higher levels of depression than male non-athletes, but no differences were found between male and female collegiate athletes.

Brown and Blanton (2002) analyzed a nationwide sample of U.S. university students, using the 1995 National College Health Risk Behavior Survey (NCHRBS). The authors examined the association between participation in sports and suicide-related behavior (including thoughts, plans, or attempts). After controlling for key demographic variables (age, race, gender, alcohol intake, substance abuse, smoking, frequent exercise among adolescent girls), they found that both males and females who reported participation in sports had significantly lower odds of suicidal behavior compared with non-sport participants; this finding was particularly strong for men (Brown & Blanton, 2002).

Harrison and Narayan (2003) examined the extent to which ninth grade student membership in high school activities (i.e. sports, clubs, service organizations, etc.) contributed to a sense of belongingness and protected students against suicidal thoughts and attempts. The authors found that students who self-reported participation in sports had a uniquely powerful association with a lower likelihood of emotional distress and suicidal behavior. Results also indicated that participants in any type of extracurricular activity were significantly more likely than nonparticipants to express positive attitudes about self, peers, teachers, and parents. Additionally, those who participated in team sports were most likely to believe their parents care a great deal about them, were most likely to report high self-esteem, and were least likely to report sadness, anxiety, and suicidal behavior (Harrison & Narayan, 2003).

Sabo and colleagues (2005) analyzed data from the 1997 national school-based Youth Risk Behavior Survey (YRBS). They found that a significantly lower percentage

of male and female high school athletes than non-athletes reported seriously considering or planning suicide during the year prior to the survey. Their results indicate that both female and male athletes reported significantly lower rates of suicidal ideation and behavior than their non-athlete counterparts; the associations were most notable for highly involved athletes.

Taliaferro, Rienzo, Miller, Pigg, and Dodd (2008) conducted a cross-sectional survey of high school students and found that sports participation was significantly associated with reduced odds of hopelessness and suicidal behavior among both men and women. They also found, after controlling for physical activity, sports participation remained a significant factor in reducing suicidality among both genders. Furthermore, the authors hypothesized that participating in sports offers unique protection against adolescent suicidality by providing social support and integration.

Growing confidence in the field indicate that individuals who participate in team sports are more "plugged in" to a therapeutic support base for athletes, which extends beyond the coach and may include medical professionals, athletic trainers, strength coaches, academic counselors, and teammates (Brown & Blanton, 2002). Research suggests that students have, at minimum, access to a network of peers who can provide informal social and emotional support, which reduces the risk for suicidal behavior (Brown & Blanton, 2002; Sabo et al., 2005; Hirschi, 1969). These findings point to important implications from a population-based intervention perspective, that athletes of both genders display less risk than their non-athlete counterparts in considering suicide. While we must not oversimplify or overstate the associations between athletic

participation and suicide risk, the preventive implications of these findings merit serious further consideration (Sabo et al., 2005).

While confidence is growing with both the emotional and social benefits of participating in sports for adolescents and young adults, there is a gap in the literature. Questions remain about *how* and *why* a college athletics setting can operate as social vehicles for health promotion and suicide prevention. Research specific to sports participation has been positive, indicating that participation in sports activities is associated with decreased levels of suicidal behaviors and distress. Furthermore, little is known about the relationship between sports participation and connectedness. Additionally, much of the existing data consists of surveys conducted with high school-aged students, which leaves questions regarding the similarities and differences found with college-aged students. Finally, participation in other types of student organizations have yet to be fully studied and it is virtually unknown if the protective benefits of various types of extra-curricular collegiate activities are associated with decreased level of distress, lower odds of suicidal thinking, and potentially higher levels of connectedness compared to students who are not involved. This valuable information could inform college suicide prevention programs nation-wide.

Shifting the Paradigm to Reduce College Student Distress and Suicidality

This section aims to describe the current approaches to suicide interventions and also shed light on how the leading researchers in the field suggest we can continue to expand the current paradigm. Many suicidologists have concluded that there is no single cause to suicide and while there may be a single triggering event, deeper reasons for

suicidal behaviors may be involved (Cha & Nowak, 2009). People with similar backgrounds and circumstances react entirely differently to adversity and various stressors; some may show resilience and others may break. Thus, rather than addressing suicide as individual, unrelated cases, many argue this grave problem needs to be addressed systematically (Cha & Nowak, 2009). Historically, the prevailing approach to preventing student death by suicide has been to assign narrow responsibility and fairly limited resources for crisis intervention to the campus counseling service (Drum & Burton Denmark, 2011). What has shifted in the attempt to decrease suicidality is the move beyond clinical intervention and crisis management, towards prevention. Researchers and experts in the field (Drum et al., 2009; Knox, Conwell, & Caine, 2004) have recognized that continuing the current paradigm shift is more important now than ever.

A shift in focus is necessary from the exclusive reliance on the treatment of suicidal students to prevention at the campus level. Campus stakeholders are realizing that "suicide prevention should no longer be solely the concern of mental health professionals but also that of the entire college community" (The Jed Foundation, 2006, p. 7). Similarly, Knox, Conwell, and Caine (2004) propose that improving overall community mental health can reduce the events of suicide more effectively than extensive efforts to identify the imminently suicidal individual. Furthermore, limited research contributes to a disproportionate emphasis on helping those who are already in crisis rather than focusing efforts on preventing people from entering and progressing in the severity of their suicidal ideation and suicide-related behaviors (Drum et al., 2009).

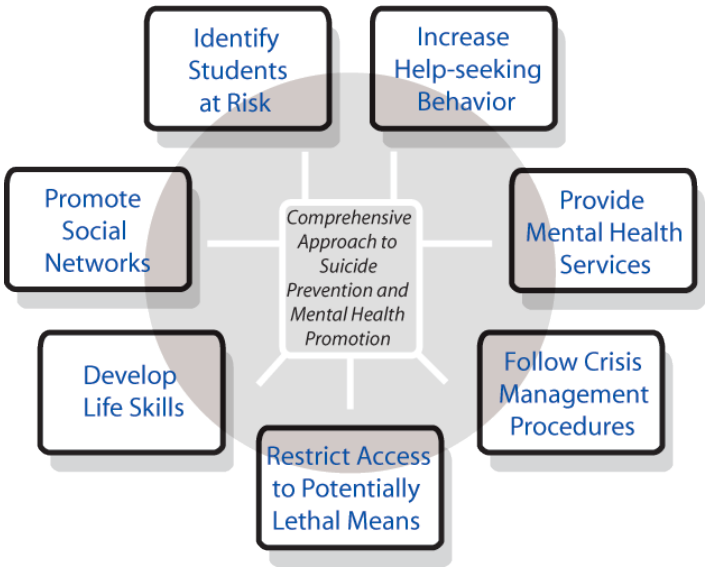
Researchers in the social sciences are not the only individuals who propose more prevention, public health, and population-based approaches are needed. In 2003, President Bush declared, "Suicide is a serious public health challenge that has not received the attention and degree of national priority it deserves" (President's New Freedom Commission Report, *Achieving the Promise: Transforming Mental Health Care in America*). As a response, the National Strategy for Suicide Prevention (NSSP) developed a national plan for public and private collaboration in the reduction of risk and burden associated with suicide and suicidal behaviors. In this plan, the NSSP specifically described the suicide prevention needs for adolescents and students on campuses (U.S. Public Health Service, 2001).

To address many of these needs among adolescents and young adults, Congress passed and signed the Garrett Lee Smith Memorial Act (GLSMA) into law in 2004. The GLSMA made federal funding nationally available for the first time. Specifically, the GLSMA enabled funding to address a number of the NSSP goals and objectives including (among others) an increased development and implementation of community-based suicide prevention programs, training for recognition of at-risk behaviors, increased awareness of suicide as population concern.

To guide colleges in developing a campus-wide, public health approach, in 2006 The Jed Foundation (TJF) and SPRC formulated a *Comprehensive Approach to Suicide Prevention and Mental Health Promotion* that comprises seven strategic areas for intervention (see Figure 1 below). The approach is drawn primarily from the direction of the United States Air Force (USAF) Suicide Prevention Program, which is a population-

based strategy to reduce risk factors and enhance protective factors for suicide. By implementing eleven initiatives and policy changes, the program reduced the rate of suicide among USAF personnel by 33 percent during the first five years of the program (Knox, Litts, Talcott, Catalano Feig, & Caine, 2003). The TFJ/SPRC approach is based on decreasing risk factors and increasing protective factors for mental health and suicide among adolescents, college students, and the general population, with an understanding of the student mental health problems that campuses confront.

Figure A: Comprehensive Approach to Suicide Prevention and Mental Health Promotion (TFJ/SPRC, 2006)



SPRC included *Promote Social Networks* in their public health approach (above) because they identify the consistent research showing that loneliness and isolation are risk factors for suicide, suicidal behavior, and mental health problems — while supportive social relationships, social networks, and connectedness to one's school, serve

as protective factors against these outcomes. Additionally, the CDC considers connectedness to be so critical that its 5-year strategic direction for preventing suicidal behavior is focused on fostering and strengthening social bonds within and among communities (2008).

Developing Life Skills is another integral piece to the TJF/SPRC framework (above). According to researchers at SPRC, relationship difficulties and financial problems are also risk factors for depression and suicidal behavior, as are academic difficulties. They support an approach recognizing that the college experience is comprised of *more* than academics. They recommend that fostering the development of necessary life skills is integral in order to bolster healthy coping skills, which may also ease the burden on counseling centers. Providing students with early assistance with life problems may prevent them from becoming acutely distressed, experiencing depression or suicidal behaviors. Additionally, non-clinical staff, educators, mentors, and leaders on a campus can easily provide life-skills education (Picklesimer & Miller, 1998). *Developing life skills programs* and *Promoting Social Networks* in TJF/SPRC framework (above) supports an important objective of the NSSP – to increase the proportion of colleges and universities with evidence-based programs designed to address serious young adult distress and prevention suicide (DHHS, Public Health Service, 2001).

While the TJF/SPRC framework contributes to the much needed paradigm shift and includes prevention policies, some experts in the field gravitate more towards a population-based approach, as it offers strategies to expand the public health model and therefore evolve the suicide prevention paradigm. Drum and Burton Denmark (2011)

illustrate that the addition of population focused prevention models is needed now more than ever, as colleges and universities can no longer rely solely on a crisis intervention model, which emphasizes reacting to crises versus focusing on prevention. The narrow scope of this singular type of intervention is that it requires the ability to identify and treat students already experiencing distress and suicidal thoughts, which overtaxes college mental health centers limited resources (Drum et al., 2009). Moreover, the authors illustrate that campuses working exclusively with crisis interventions do not measurably decrease the incidences and prevalence of suicidal distress on college campuses. The authors propose, "treatment for suicidal thoughts and behaviors should be considered a single element of a comprehensive, campus-wide strategy to reduce student distress and bolster student resilience and coping" (Drum & Burton Denmark, 2011, p. 255).

Drum & Burton Denmark (2011) explain that *membership populations*, such as school and college populations, have established practices and procedures common to all members, creating access points for interventions. For example, preventative programming on college campuses can be embedded in the processes by which members enter the populations, such as freshman orientation. Additionally, programming can be implemented at various stages as members progress through the population. For instance, free stress reduction workshops can be offered to students during periods of high stress during final exam period. Drum and Burton Denmark (2011) further suggest that prevention programming can be institutionalized, thereby self-renewing, which extends to new members while simultaneously reducing expenses and time.

Extending from membership populations, Drum & Burton Denmark (2011) describe the *convenience* population, which includes "assemblages of people established for the purpose of targeting interventions to different segments of the total population" (p. 257). Convenience populations are basically the target population from a membership population that helps to steer and focus intervention strategies. This could involve intentional and directed programming for ethnic and sexual minorities, with the aim to create a sense of connectedness, reduce stigma, and present how students can access various resources across campus. "One important component of population-level prevention is shifting the perception of suicidality from an isolated and stigmatized condition that impacts only a few disturbed people to a common and preventable response to stressors that overwhelm a person's ability to cope (Drum & Burton Denmark, 2011, p. 259)". For example, issues related to stigma, language, and cultural barriers could be incorporated into presentations to cultural and ethnic organizations as well as outreach to the overall student population.

We are at such a high state of national crisis with increasing rates of suicide and highly publicized tragedies on college campuses, that schools are now looking more than ever to implement structures and programs to foster social networks and develop life skills programs (see above TFJ/SPRC framework) (SPRC, 2006). Also, given the recent research on the protective factors associated with connectedness, colleges are seeking various ways to encourage students' sense of connectedness to their university and fellow peers. Population-based interventions that involve increasing connectedness within the

student population and with the university itself may be one (among many) effective approach to suicide prevention.

Most colleges have more students attending their schools than in years past and their student body population has grown in both numbers and diversity. For many colleges, it is a struggle to prevent students from feeling lonely, disconnected, or like an outsider on their campus. Furr and colleagues (2001) assert that counseling centers are beginning to work more closely with student affairs offices to design more opportunities for students to become more connected and engaged with their entire college campus communities. Counseling centers suggest that students engage more with such organizations as student activities, fraternities and sororities, clubs, sports, and living-learning centers (Furr et al., 2001). Furthermore, rather than remaining in a reactive role to student crisis, they have begun to explore more options for the development of prevention programs; and more campuses are becoming proactive--as well as reactive--in addressing the mental health of their college students, especially in the realm of college student suicide. Particular attention to reduce student-perceived lack of connectedness is an important priority and prevention strategy for college health professionals (Blai, 1989) and administrators.

Purpose of the Current Study

The current study aims to build upon existing research by examining connectedness, distress, and suicidal thinking amongst college students. Moreover, the study aims to examine factors of gender, sexual orientation, and membership in organized campus activities and their relationship to distress, suicidal thoughts, and connectedness

in order to more fully understand college student suicide and how potential population-level suicide prevention programs may be informed with this knowledge. Due to the exploratory nature of the population-based survey from which this study is drawn, no a priori hypotheses are put forth. Instead, the following research questions have emerged from a review of the literature on the topics of connectedness, membership in student groups, distress, and suicidal thoughts with college students. The following research questions have been organized by the study's three outcome variables: Distress continuum (questions 1-4); Suicidal Thoughts (questions 5-8); and Connectedness (questions 9-11).

Outcome Variable: Distress Continuum.

Research question 1.

Question: During a stressful period, is there a relationship between students' levels of connectedness and distress, after controlling for history of prior attempts?

Rationale: Research suggests that people who have higher levels of connectedness tend to endorse lower distress levels and are less likely to experience suicidal thoughts (Baumeister & Leary, 1995; Joiner, 2005; 2009; Lee, et al., 2008; Lee, Draper, & Lee, 2001; Lee & Robbins, 1998; Van Orden, et al., 2008; 2010). Given these past studies, it is expected that connectedness will have a negative relationship with not only suicidal thoughts but also distress for the college student population.

Research question 2.

Question: During a stressful period, are sexual orientation and gender related to distress, after controlling for prior attempts?

Rationale: As stated above in the literature review, college men are at a higher risk for suicide completions and college women are at a higher risk for suicidal attempts (Silverman et al., 1997; CDC, 2010; Joiner, 2005). Additionally, women tend to screen positive for major depression and anxiety disorders (Eisenberg et al. 2007). While these studies did not specifically examine gender and distress in the college population (as no studies have been so specific in focus) it is expected that the current study will find a similar relationship, that women may have a stronger relationship to distress than men.

In terms of sexual orientation, compared with their heterosexual peers, lesbian, gay, and bisexual (LGB) adolescents and young adults report elevated rates of suicidal ideation and attempted suicide (D'Augelli, Hershberger, & Pilkington, 2001; Remafedi, French, Story, Resnick, & Blum, 1998; Faulkner & Cranston, 1998; Bagley & Trembly, 1997; Remafedi, 2002; Kitts, 2005). While these previous studies did not examine college student distress specifically, it is anticipated that the current study will find a similar relationship, with non-heterosexual students endorsing higher levels of distress compared to their heterosexual counterparts.

Research question 3.

Question: During a stressful period, is there a relationship between membership in student groups and distress, after controlling for prior attempts?

Rationale: Literature in this area of research is limited. Harrison and Narayan (2003) found that students who participated in high school team sports at school (either alone or in conjunction with other activities) had a lower likelihood of emotional distress and were less likely to report suicidal behavior. Because this sample of 9th grade

participants is younger than the college population, comparisons with the current study's expected findings are difficult to make. However, it is expected that membership in student organizations may offer protection from distress.

Research question 4.

Question: During a stressful period, is there a relationship between the *types* of student membership groups and distress, after controlling for prior attempts?

Rationale: Very few studies have examined more than student athletes compared to non-student athletes, therefore this study sets out to examine the relationship between the members in various types of college organizations and distress. Miller and Hoffman (2009) found that athlete identity was significantly negatively associated with both depression and suicidal behavior. The authors suggest that their findings are consistent with the interpretation that the experience of playing on a team may contribute to the development of a pro-social identity that in turn buffers against depression. Zullig and White (2008) found that students who describe themselves as spiritual or religious are also likely to report greater self-perceived health. The study's findings suggest that religious and spiritual beliefs seem to bolster life satisfaction, which may also play a role with decreased distress. Thus, similar findings may surface with members of college campus religious organizations in the current study. Prior studies examining other types of college student organizations have not been conducted thus far; therefore, this question is exploratory in nature.

Outcome Variable: Suicidal Thoughts.

Research question 5.

Question: During a stressful period, is there a relationship between students reported levels of connectedness and suicidal thoughts, after controlling for prior attempts?

Rationale: Several theories (see literature review above) of suicide suggest connectedness plays a central role in the etiology of suicide. For example, Durkheim's (1897) sociological model posits that too little social integration is one of several dysregulated social forces that increase the likelihood of suicide. Additionally, Shneidman's (1987) model of suicide suggests that an unmet need for "affiliation" is one of the several needs that contribute to suicide, if it is unmet. Further, Joiner's (2005, 2009) interpersonal theory of suicide suggests that the need to belong to caring and support relationships (Baumeister & Leary, 1995) is so powerful that, when thwarted, contributes to one's desire for suicide. Moreover, several studies have specifically examined the relationship between connectedness/belongingness and suicidal thoughts, which have supported these theories (Conner, Britton, Sworts, & Joiner, 2007; Joiner, Hollar, & Van Orden, 2008; Van Orden et al., 2008). In a recent study by You, Van Orden, and Conner (2011), results indicated that all indices of social support, low belongingness, and living alone were related to an increased probability of a history of suicide attempt and history of ideation. Given these findings, it is expected that a similar relationship between connectedness and suicidal thoughts will be found with college students.

Research question 6.

Question: During a stressful period, are sexual orientation and gender related to suicidal thoughts, after controlling for prior attempts?

As reported in the above literature review, studies indicate that compared with their heterosexual peers--lesbian, gay, and bisexual (LGB) adolescents and young adults report elevated rates of suicidal ideation and attempted suicide (D'Augelli, Hershberger, & Pilkington, 2001; Remafedi, French, Story, Resnick, & Blum, 1998; Faulkner & Cranston, 1998; Bagley & Trembly, 1997; Remafedi, 2002; Kitts, 2005). Few studies (if any) studies have examined specifically college LGB students, as their samples have been comprised of mostly adolescent and young adults. However, it is anticipated that the college LGBQ population will have similar increased odds of suicidal thoughts, compared to the non-student or adolescent population. As stated above in the literature review, college men are at a higher risk for suicide completions and college women are at a higher risk for suicidal attempts (Silverman et al., 1997; CDC, 2010; Joiner, 2005), suggesting that both men and women experience suicidal thoughts. More research has been conducted on the relationship between gender and college student suicide rates but fewer have reported on gender and suicidal thoughts, thus relationship between gender and suicidal thoughts for the current study are unknown.

Research question 7.

Question: Is there a relationship between membership in student groups and suicidal thoughts, after controlling for prior attempts?

Rationale: Harrison and Narayan (2003) found that those who participated in team

sports at school (either alone or in conjunction with other activities) had a lower likelihood of emotional distress and were less likely to report suicidal behavior. Brown and Blanton's (2002) analysis of a nationwide sample of U.S. university students showed that athletes of both sexes reported lower rates of suicidal behavior than their non-athlete counterparts While this sample of 9th grade participants is younger than the college population, it is expected that findings will be similar in the current study.

Research question 8.

Question: Is there a relationship between the types of student groups and suicidal thoughts, after controlling for prior attempts?

Rationale: Harrison and Narayan (2003) (mentioned above) found that while 9th graders' engagement in organized activity is associated with a wide array of benefits, engagement in sports appears to be associated with *unique* benefits, including even lower rates suicidal behaviors. Brener (1999) found that even after controlling for age, gender, race/ethnicity, and parents' education, undergraduate students who reported being a member of a fraternity/sorority were at decreased odds of suicidal ideation. Additionally, in a review of the literature, Feldman and Matjasko (2005) found that some of the long-term benefits to extracurricular activity participation with adolescents depended on the particular *type* of activity. For example, one study (Barber et al., 2008) found that the only negative association with activity participation involved performing arts participants, who reported more suicide attempts and visits to psychologists at 24 years of age. Nevertheless, extracurricular activity participation was related to more positive psychological adjustment in young adulthood. While this study examined adolescents and

not college students, it may point to the possibility of differing levels of protection conferred as a result of the *type* of activity with which students are involved.

Outcome variable: Connectedness.

Research question 9.

Question: Are sexual orientation and gender related to connectedness, after controlling for prior attempts?

Rationale: This question is exploratory. While connectedness has been studied more frequently in the literature of late, (Lee & Robbins, 2000; Van Orden, 2008; 2010), few studies have yet to examine specifically collegiate GLBQ students. However, given the often times difficult process of "coming out" and general feelings of isolation for gay adolescents (Hill et al., 2012), the current study expects that non-heterosexual students may report lower levels of connectedness compared to their heterosexual counterparts. Moreover, research has been inconclusive with the relationship between gender and connectedness. Carver et al., (1989) found that women valued connectedness more than men. However, Lee et al. (2002) suggests that connectedness is equally important for both genders, but men and women differ in terms of how its experienced. Given the inconclusive nature of past research, the current study's findings are unknown and this research question remains exploratory in nature.

Research question 10.

Question: Is there a relationship between membership in student groups and connectedness, after controlling for prior attempts?

Rationale: Brown and Blanton (2002) state that as early as the 1950's and 60's, student-athlete populations were noted to present fewer psychological problems than the nonathletic population. The author's describe that student-athletes are surrounded by support systems, which provide structures to help them to succeed academically and support to help them thrive socially. These sources of support may buffer these students from suicidal thinking because of the strong sense of connectedness that many of them feel not just for their university but also for their teammates, coaches, trainers, advisors, etc. Van Orden and colleagues (2008) found that belongingness mediated the relationship between semester and suicidal ideation, such that variation in suicidal ideation across academic semesters (due to differences between summer and spring) seemed to be accounted for, in large part, by decreased belongingness. They found that students who attended classes during the summer semester—when attendance is lower— experienced lower levels of belongingness and accounted for higher levels of suicidal ideation. Van Orden and colleagues' (2008) findings suggest that changes at the level of a social group (as in a college campus across semesters) impacted individual levels of belongingness. Given these previous finding it is possible that the current study will find that students who are members of student groups will report higher levels of connectedness compared to students who are not involved.

Research question 11.

Question: Is there a relationship between the types of student groups and connectedness, after controlling for prior attempts?

Rationale: As stated previously, vastly more research has been conducted on students who participate in athletics and less research has been conducted on other types of extracurricular student activities, making it difficult to anticipate what will be discovered in the proposed study. In Blai's (1989) *Review on the Health Consequences of Loneliness*, he states that people who are lonely generally seek relief from their feelings of loneliness. As a way to reduce feelings of loneliness, Blai (1989) found that people will get involved with a variety of networks, such as singles organization, various types of clubs, meeting places for socialization, including churches and bars. Given his assertion, perhaps the specific *type* of organization or source of social form is unimportant as long as loneliness is quelled and connectedness is fostered. However, this question remains exploratory and it is unknown if certain types of student groups will have a significant relationship with connectedness, and others will not. Or, it may be that being a part of "something" will foster connectedness, regardless of the type of group.

Chapter Three: Methods

The current study is an analysis of archival data that was administered in the spring of 2011 as part of the sixth national study conducted by the National Research Consortium of Counseling Centers in Higher Education. The consortium was founded in 1991 and is based at the University of Texas at Austin. Participation in projects led by the Research Consortium is open to any 4-year U.S. or Canadian institution of higher education, and membership is decided from project to project. The cross-sectional web-based survey was a large-scale study, titled *Undergraduate and Graduate Student Coping with Stressful Experiences*, consisting of 79 items and was administered online in order to obtain a large and geographically representative sample.

Participants

Entire sample of survey respondents.

Participants for the study consisted of a stratified random sample of approximately 101,492 undergraduate and graduate students invited to participate in the survey across 74 participating U.S. colleges and universities. For the 51 campuses with 5,000 or more undergraduates, 1,000 students were randomly sampled, and for the 23 campuses with 500 to 4,999 undergraduates, 500 students were randomly sampled. The same sampling procedure was used to select graduate students, and all students were over the age of 18 (over 19 in Nebraska). The combined undergraduate and graduate response rate was 26.3% (26,742/101,491), creating an overall sample size of 26,742 students who responded to the entire survey.

The participating institutions are representative of U.S. colleges and universities.

The size of schools ranged from 770 to 70,440 students, furthermore 80% of the participating institutions were public. One participating school was a community college, but was excluded from the aggregated national data. Six of the 74 institutions only enrolled undergraduates, the rest offered both undergraduate and graduate level degrees.

Among the 26,430 students who responded to the survey, 53.4% (N=14,113) reported they were undergraduate students, 45.9% (N=12,131) reported they were graduate students, and 0.7% (N=1,850) reported they were non-degree seeking students. Survey respondents were 62.7% female. Approximately 92% of the sample described their sexual orientation as heterosexual, 3.4% as bisexual, 2.5% as gay or lesbian, 1% as questioning, and 1.4% as 'other'. Racial/ethnic composition of the sample was comprised of 31.8% racial and ethnic minority students. The mean age of the undergraduate and graduate samples were 22 and 30 years old, respectively. For the purposes of this study, only the undergraduate student sample (N=14,113) will be utilized in the analysis because involvement in college extracurricular activities is thought to be more common with undergraduate students versus graduate students.

Procedures

Data collection of national sample.

Prior to data collection, a research proposal and draft of the survey measure, including the email recruitment message, informed consent, the login and logout pages, and treatment referral procedures, were submitted to and approved by the Institutional Review Board (IRB) of the University of Texas at Austin and each participating institution (see Appendix A). Each participating school randomly selected students and

sent an email invitation from their campus counseling center, containing information about the study and a link to the survey. Invitations informed students that The University of Texas at Austin was conducting the study and that it was sponsored and supported by their campus. Recipients were provided with an incentive to be entered into a drawing to receive one of 100 gift cards in the amount of $50 to Amazon.com. The email invitation included a link to the online survey web page and was customized to each institution's logo and colors.

After consenting to participate in the study, students were asked a variety of questions regarding their demographics, presence of coping assets and risk variables, experiences managing life stressors, and experiences with suicidal ideation and other aspects of suicidality along a continuum of risk. Based on focus groups conducted prior to the start of the study, the survey was predicted to take roughly twenty minutes for participants to complete. Participants were allowed to skip questions and withdraw from the survey at any point. Randomly generated identification numbers were used to preserve the anonymity of participant responses. All participants, including those who declined to participate in the survey, exited the survey early and/or if they reported indicators of active suicidality, were provided with referral information specific to their institution, including contact information for their school's counseling center on campus and other local mental health and emergency contact information. This list of resources was also provided to all participants following their response to an item asking them to briefly describe the "worst point" of a recent stressful time period. The survey was designed to assist in intervening with students who indicated that they were experiencing

an acute level of distress at the time of taking the survey, such as active suicidal ideation.

Approvals for the present study.

Prior to initiating data analysis for the present study, an application detailing the purpose and methods of the project was submitted to Chris Brownson, Ph.D., national director of the National Research Consortium of Counseling Centers in Higher Education. An email (dated March 8, 2013) was received from the University of Texas at Austin's IRB's Program Coordinator in the Office of Research Support, stating

> "If the data has been deidentified and you have no access to anything that may link the dataset to the individuals who provided them, then it would not meet the definition of human subjects research. Therefore you would not need to obtain IRB review and approval to analyze the existing data set. If the data collection were still ongoing then an IRB submission would be needed".

Measures

Several of the aforementioned items were replicated from the first suicidality study conducted by the National Research Consortium in 2006. In addition, all of the suicidality items and connectedness items were created and agreed upon by the members of the National Research Consortium of Counseling Centers in Higher Education, with input provided by prominent experts in the field of college student suicidality. Directors of participating counseling centers across the nation provided the final survey approval. The entire survey is available in Appendix B, with the items of interest for the present study highlighted.

Demographic survey.

Participants were asked to respond to questions providing information about their demographics, including age, gender, sexual orientation, and race/ethnicity. Age was determined in the first item as an open text/integer response with a character limit of 2. Gender was determined in the second item with response options of Female/Male/Transgender. Racial/ethnic information was determined by asking participants to select all descriptions that apply to them from the following categories: Native American (e.g. Dakota, Cherokee) or Alaskan Native; African-American, of African descent, African, of Caribbean descent, or Black; Asian or Asian American (e.g. Chinese, Japanese, Korean); Middle Eastern or East Indian (e.g. Pakistani, Iranian, or Egyptian); Hispanic, Latino(a) (e.g. Cuban American, Mexican American, Puerto Rican); Native Hawaiian or other Pacific Islander (Samoan, Papuan, Tahitian); Caucasian, White, of European decent, or European (including Spanish); and Other (please specify). Sexual orientation was determined by participants' response to an item asking them to check the description that best describes their orientation from the following options: bisexual, gay/lesbian, heterosexual, questioning or other. Previous suicide attempts was determined by asking participants to select a response from: 0 (no previous attempts) to 5 or more.

Identifying a stressful period.

Survey respondents were asked to read the following Section Introduction and answer several questions (forced choice, Likert scale, and open text response) regarding the most stressful period of time they experienced in the past 12 months. The remaining sections of the study refer to this identified "stressful period". The proposed study will

examine data from the "stressful period" section of the survey.

Section Intro *"Please reflect on the most stressful period of time that you have experienced in the past 12 months, including the present day. While it may be difficult to choose just one time, please think back on your experiences over the past 12 months and identify a single period when you were most upset, distressed or overwhelmed."*

Self-reported distress.

Questions in this section of the survey are aimed at determining distress levels during the worst point of a recent stressful period. Participants were asked to select "all that apply" for the following item in order to indicate presence of distressed thoughts: *"During the stressful period, did you have any thoughts similar to the following": "This is all just too much"; "I wish this would all end"; "I have to escape"; "I wish I was dead"; "I want to kill myself"; "I might kill myself"; "I will kill myself"; and "I did not have any thoughts like these".* This is further explained in table A.

Suicidal thoughts.

To determine participants' serious contemplation of suicide during a recent stressful period, participants were forced to select either *"Yes"* or *"No"* to the following dichotomous item: *"During this stressful period, did you* ***seriously*** *considered attempting suicide?"* This is further explained in table A.

Membership in campus activities.

Students were asked*, "Of the following activities, in which do you actively participate as either a member or in a leadership role?"* Students could respond: 1)

Member; 2) Leadership; or 3) Not involved. The activities included in the item are: *Academic or Professional Organizations; Arts Organizations (e.g. music, drama, dance, fine arts); Fraternity or Sorority; International, Ethnic or Cultural Organizations; Intramural or Club Sports; Political, Social-Action or Student Government Organizations; Religious Organizations; Service or Social Organizations (other than Fraternity or Sorority); Varsity Athletic Teams.* This item was recoded to reflect "Membership" or "Not Involved", whereby respondents who selected "Leadership" were put into the "Membership" category. This is further explained in table A.

Connectedness Items.

Students were asked, *"At the worst point during this stressful time, when approaching the challenges you were facing": "How understood by others did you feel?"; "How cared for by others did you feel?"; "How much did you feel that you could count on others?" and "How comfortable did you feel in making new connections with others?"*. Students could respond on a 5-point Likert scale: (1) "Not at all" (3) "Moderately" (5), "Very". The average score was calculated to create a composite score, then the connectedness item was grand-mean centered (subtracting the composite grand mean from each respondent's composite score)..The connectedness items were found to have a Cronbach's alpha of .827.

Preliminary Data Analysis Procedures

Preliminary analysis (e.g. frequencies and percentages) was conducted to describe the sample and identify the variables to include in the final models using SPSS Version 20.0. Due to the nested structure of the data, a preliminary HLM analysis was conducted

in order to assess the intra-class correlations (ICCs). The ICC values were not substantial, thus multiple and logistic regression analyses were conducted for the current study.

Tabachinick and Fidell (2001) suggest that *N* should equal the greater of the following: either the number of predictors times 8, plus 50; or the number of predictors plus 104. A sample size of 14,080 (after deleting missing data) produced a sufficient number of participants for the power required.

The validity of the multiple regression assumptions was explored before conducting the primary analysis, including the independence of errors by examining the Durbin-Watson test for values less than one or greater than three; collinearity was determined by examining the tolerance statistic (excluding any variable less than 0.10) and whether the Variance Inflation Factor (VIF) exceeds 10. Finally, homoscedasticity was tested by examining a scatter plot of regression standardized residuals by the regression standardized predicted values and looking for a random array of dots, evenly dispersed around zero (Field, 2009).

The presence of outliers was assessed by examining standardized residuals (absolute value greater than 2.5). In the event of potential outliers, a sensitivity study was conducted to determine the impact of the outliers on the study results. If the presence of outliers appeared to impact study results, a decision was made and documented about continuing with the analysis with the outliers or discarding them. Participants with missing data were not included in the analysis and were deleted list-wise.

For all analyses, the variables Suicidal Thoughts, Gender, Sexual Orientation, Prior Attempt(s), Membership in student activity groups, Race/Ethnicity, and Type of

activities were dummy coded. A description of all dummy coded variables used in the quantitative analysis is provided in table A below.

Table 1: Student Variable Descriptions

Dummy Coded Variables	**Dummy Code Protocol**
Suicidal Thoughts	Students who selected "Yes" for survey item 64, "*during the stressful period, did you seriously consider attempting suicide?*" were coded "1". Respondents who answered "No" were coded "0".
Gender	Students who selected "female" for survey item 2, were coded "1", those who selected "male" were coded "0". Transgender students were excluded from the analysis due to low sample size.
Undergraduates	Students who responded "1-4" to survey item 6 were coded "1" for undergraduate student status; students who responded "5-7" were coded "0" for graduate student status; non-degree seeking students were also coded as "0". As stated above, this study only analyzed undergraduate students; "1's" were selected out from the dataset and were the only cases examined for this analysis.
Sexual Orientation	Students who selected "heterosexual" for survey item 7 were coded "1", all others (bisexual, gay/lesbian, questioning, other) were coded "0".
Prior Attempt(s)	Students who responded "0" to survey item 30 "*How many times in your life have you attempted suicide"* were coded "0;" those who endorsed one or more lifetime suicide attempts were coded "1."
Membership	Students who selected "*Member"* or *"Leader"* for survey item 36_1-11*"Of the following activities, in which do you actively participate as either a member or in a leadership role?"* were coded "1". Those who selected "*Not involved"* were coded "0".
Race/Ethnicity	
African American	Students who selected only "*African American, of African descent, African, of Caribbean descent, or Black"* for survey item 3 were coded "1". Those who did not were coded "0".
Asian American	Students who selected only "Asian or Asian American" for survey item 3 were coded "1". Those who did not were coded "0".
Caucasian/White	Students who selected only "*Caucasian, White, of European descent, or European (including Spanish)* were coded "1". Those who did not were coded "0". This is the reference group for race/ethnicity.
Latino/a	Students who selected only "*Hispanic, Latino or Latina"* for survey item 3 were coded "0". Those who did not were coded "0".
Middle Eastern/East Indian	Students who selected only "*Middle Eastern or East Indian"* for survey item 3 were coded "0". Those who did not were coded "0".
Native American/Alaskan Native	Students who selected only "*Native American or Alaskan Native"* for survey item 3 were coded "1". Those who did not were coded "0".
Native Hawaiian/Pacific Islander	Students who selected only "*Native American or Alaska Native"* for survey item 3 were coded "1". Those who did not were coded "0".
Other	Students who selected "*Other"* for survey item 3 were coded "1". Those who did not were coded "0".
Type of Membership	
Academic	Students who responded "Member" or "Leadership" to "*Academic or Professional Organizations"* for survey item 36_1 were coded "1". Those who endorsed "Not involved" were coded "0".

Table 1, cont.

Arts	Students who responded "Member" or "Leadership" to "*Arts organizations (e.g. music, drama, dance, fine arts)"* for survey item 36_2 were coded "1". Those who endorsed "Not involved" were coded "0".
Fraternity/Sorority	Students who responded "Member" or "Leadership" to "*Fraternity or Sorority"* for survey item 36_3 were coded "1". Those who endorsed "Not involved" were coded "0".
International/Cultural	Students who responded "Member" or "Leadership" to "*International, ethnic or cultural organizations"* for survey item 36_5 were coded "1". Those who endorsed "Not involved" were coded "0".
IM/Club Sports	Students who responded "Member" or "Leadership" to "*Intramural or club sports"* for survey item 36_6 were coded "1". Those who endorsed "Not involved" were coded "0".
Political/Government	Students who responded "Member" or "Leadership" to "*Political, social-action or student government organizations"* for survey item 36_8 were coded "1". Those who endorsed "Not involved" were coded "0".
Religious	Students who responded "Member" or "Leadership" to "*Religious Organizations"* for survey item 36_9 were coded "1". Those who endorsed "Not involved" were coded "0".
Service	Students who responded "Member" or "Leadership" to "*Service or social organizations (other than fraternity or sorority)"* for survey item 36_10 were coded "1". Those who endorsed "Not involved" were coded "0".
Varsity Athletics	Students who responded "Member" or "Leadership" to "*Varsity athletic teams"* for survey item 36_11 were coded "1". Those who endorsed "Not involved" were coded "0".
	"Informal groups with shared interests (e.g. exercise, entertainment, food, drink)" and "*Paid Employment"* were not included in the analysis.

Primary Data Analysis

To answer research questions multiple and logistic regression analyses were conducted to examine the relationship between the predictor variables and dependent variables. Correlations were first examined between the variables. The model summary was examined to determine the amount of variance explained by the regression model (Adjusted R^2) and to also provide an estimate of overall model fit. F test results ($p < 0.5$) were examined for evidence that the variability in the outcome was explained by the set of predictors in the model. If the model was significant, Standardized Coefficients Beta

(β) was used to compare the relative importance of the variables in the model and unstandardized coefficients (B) was used to further explain the results. SPSS (version 20.0) was used for all statistical analyses.

Research question 1.

During a stressful period, is there a negative relationship between students' levels of connectedness and distress?

A multiple regression analysis was conducted in order to examine the relationship between connectedness and distress. Prior attempts (none = 0; one or more = 1) was entered into the model as a covariate. Connectedness was entered as an independent variable into the regression model. The distress continuum (scale of 0-7) was entered as the dependent variable. If a significant amount of variability was explained, the coefficient value was evaluated for significance indicating that students who self-reported higher levels of connectedness tended to report lower levels of distress during a stressful period, after controlling for prior suicide attempts.

Research question 2.

During a stressful period, are sexual orientation and gender related to distress?

A multiple regression analysis was conducted in order to examine the relationship between sexual orientation and distress, and gender and distress. Prior attempts was entered into the model as a covariate. Sexual orientation (non-heterosexual = 0; heterosexual = 1) and Gender (0 = male; 1 = female) were entered as independent variables into the regression model. The distress continuum was entered as the dependent variable. If a significant amount of variance was explained by the predictor variables, the

coefficient value was evaluated for significance indicating that gender and/or sexual orientation are significantly related to distress during a stressful period, after controlling for prior suicide attempts and connectedness.

Research question 3.

During a stressful period, is there a relationship between membership in student groups and distress?

Respondents were categorized as "member", or "not involved" – regardless of the type of activity selected. If a student selected "leader" or "member" for any student activity, they were placed in the "member" category (1), with (0) coded as "not involved", making it a dichotomous variable. A multiple regression analysis was conducted to examine the relationship between membership in campus activities and one's level of distress. Membership was entered as the independent variable into the regression model, prior attempts was entered as a covariate. The distress continuum was entered as the dependent variable. If a significant amount of variability was explained by the predictor variables, the coefficient value was evaluated for significance indicating that membership in campus activities predicted lower levels of distress compared to students who were not involved, after controlling for prior attempts and connectedness.

Research question 4.

Is there a difference in distress between the types of student membership groups?

A multiple regression analysis was conducted to examine the relationship between the *types* of campus activity of which students are members, and one's level of distress during a stressful period, after controlling for prior attempts. Nine types of campus

activities (*academic, arts, fraternity/sorority, international/ cultural, intramural/club sports, political/government, religious, service, varsity athletics*) were dummy coded (membership = 1, not involved = 0) as the predictor variables. Students could select "all that apply" and could potentially select more than one type of organization. Thus, the reference group is (0) not involved compared to (1) involved, with each particular activity type. These types of activities were entered into the multiple regression model as independent variables, prior attempts was entered as a covariate, and the distress continuum was entered as the dependent variable. If a significant amount of variability was explained, the coefficient values were evaluated for significance indicating that there was a relationship between the type of activity and distress, after controlling for prior attempts and connectedness.

Research question 5.

During a stressful period, is there a relationship between students' levels of connectedness and suicidal thoughts?

In order to assess whether connectedness is related to suicidal thoughts (dichotomous variable), a logistic regression model was estimated. Connectedness was entered as the independent variable, with suicidal thoughts as the dichotomous dependent variable, and prior attempts entered as a covariate. To test the significance of the overall model, the Omnibus chi-square was examined, using an alpha-level of 0.05 as the criterion for rejecting the null hypothesis. The Cox & Snell Pseudo R^2 and Nagelkerke Pseudo R^2 were used as a measure of the significance of the model. If the model was

significant, odds ratios were examined as a measure of the effect size and interpreted as the association between suicidal thinking and levels of connectedness.

Research question 6.

During a stressful period, are sexual orientation and gender related to suicidal thoughts?

In order to assess whether sexual orientation and gender are related to suicidal thoughts, a logistic regression model was conducted. Sexual orientation and gender were entered as independent variables, suicidal thoughts was entered as the dichotomous dependent variable, and prior attempts and connectedness were entered as covariates. To test the significance of the overall model, the Omnibus chi-square was examined, using an alpha-level of 0.05 as the criterion for rejecting the null hypothesis. The Cox & Snell Pseudo R^2 and Nagelkerke Pseudo R^2 were used as a measure of the significance of the model. If the model was significant, odds ratios were examined as a measure of the effect size and interpreted as the association between suicidal thinking and sexual orientation, and suicidal thinking and gender.

Research question 7.

Is there a relationship between membership in student groups and suicidal thoughts?

In order to assess whether membership is related to suicidal thoughts, a logistic regression model was conducted. Prior attempts was entered as a covariate, membership was entered as the independent variable, with suicidal thoughts as the dichotomous dependent variable. To test the significance of the overall model, the Omnibus chi-square

was examined, using an alpha-level of 0.05 as the criterion for rejecting the null hypothesis. The Cox & Snell Pseudo R^2 and Nagelkerke Pseudo R^2 were used as a measure of the significance of the model. If the model was significant, odds ratios were examined as a measure of the effect size and interpreted as the association between suicidal thinking and membership.

Research question 8.

Is there a difference in suicidal thoughts as a function of the type of student groups?

In order to assess whether types of membership is related to suicidal thoughts, a logistic regression model was conducted. Nine types of campus activities (*academic, arts, fraternity/sorority, international/ cultural, intramural/club sports, political/government, religious, service, varsity athletics*) were dummy coded (membership = 1, not involved = 0) as the independent variables. Students could select "all that apply" and could potentially select more than one type of organization. Thus, the reference group is (0) not involved compared to (1) involved, with each particular activity type. Prior attempts was entered as a covariate, with suicidal thoughts as the dichotomous dependent variable. To test the significance of the overall model, the Omnibus chi-square was examined, using an alpha-level of 0.05 as the criterion for rejecting the null hypothesis. The Cox & Snell Pseudo R^2 and Nagelkerke Pseudo R^2 were used as a measure of the significance of the model. If the model was significant, odds ratios were examined as a measure of the effect size and interpreted as the association between suicidal thinking and type of student group.

Research question 9.

During a stressful period, are sexual orientation and gender related to connectedness?

A multiple regression analysis was conducted in order to examine the relationship between sexual orientation and connectedness, and gender and connectedness. Prior attempts was entered into the model as a covariate. Sexual orientation (non-heterosexual = 0; heterosexual = 1) and Gender (male = 0; female = 1) were entered as independent variables, and the distress continuum was entered as the dependent variable. If a significant amount of variance was explained, the coefficient value was evaluated for significance indicating that gender and/or sexual orientation are significantly related to connectedness during a stressful period, after controlling for prior attempts.

Research question 10.

During a stressful period, is there a relationship between membership in student groups and connectedness?

Respondents were categorized as "member", or "not involved" – regardless of the type of activity selected. If a student selected "leader" or "member" for any student activity, they were placed in the "member" category (1), with (0) coded as "not involved". A multiple regression analysis was conducted to examine the relationship between membership in campus activities and one's level of connectedness. Membership was entered as the independent variable into the regression model, prior attempts was entered as a covariate. Connectedness was entered as the dependent variable. If a significant amount of variability was explained, the coefficient value was evaluated for

significance indicating that membership in campus activities predicted higher levels of connectedness compared to students who were not involved, after controlling for prior attempts

Research question 11.

During a stressful period, is there a relationship between the types of student groups and connectedness?

A multiple regression was conducted to examine the relationship between the *types* of campus activity of which students are members, and one's level of connectedness during a stressful period, after controlling for prior attempts. Nine types of campus activities (*academic, arts, fraternity/sorority, international/ cultural, intramural/club sports, political/government, religious, service, varsity athletics*) were dummy coded (membership/not involved) as the predictor variables. Students could select "all that apply" and could potentially select more than one type of organization. Thus, the reference group is (0) not involved compared to (1) involved, with each particular activity type. These types of activities were entered into the multiple regression model as independent variables, prior attempts was entered as a covariate, and connectedness was entered as the dependent variable. If a significant amount of variability was explained, the coefficient values were evaluated for significance indicating that there was a relationship between the type of activity and connectedness, after controlling for prior attempts.

Chapter Four: Results

Preliminary results

Below are the preliminary findings for demographic variables as well as descriptive findings. Variables included are: age, gender, race/ethnicity, sexual orientation, prior attempts, membership in student organizations, types of student organizations, self-reported suicidal thoughts, and the distress continuum.

Table 2: Undergraduate Student Sample

N = 14080		**Frequency**	**Percent**
Q1). Age	18-21 years	9901	71.6
	22-25 years	2615	18.9
	26-29 years	448	3.2
	30-39 years	503	3.6
	40+ years	354	2.6
Q2) Gender	Female	9028	64.2
	Male	5011	35.6
	Transgender	28	0.2
Q3). Race/Ethnicity	African American	744	5.3
	Asian	1363	9.7
	Caucasian	10801	76.7
	Hispanic/Latino	1261	9
	Middle Eastern	306	2.2
	Native American/Alaskan Native	245	1.7
	Native Hawaiian	77	0.5
	Other	286	2
	Multiracial	893	6.3
Q7). Sexual Orientation	Heterosexual	12857	91.6
	Non-heterosexual	1176	8.4
	Bisexual	480	3.4
	Gay/Lesbian	318	2.3
	Questioning/Other	378	2.7

Table 2, cont.

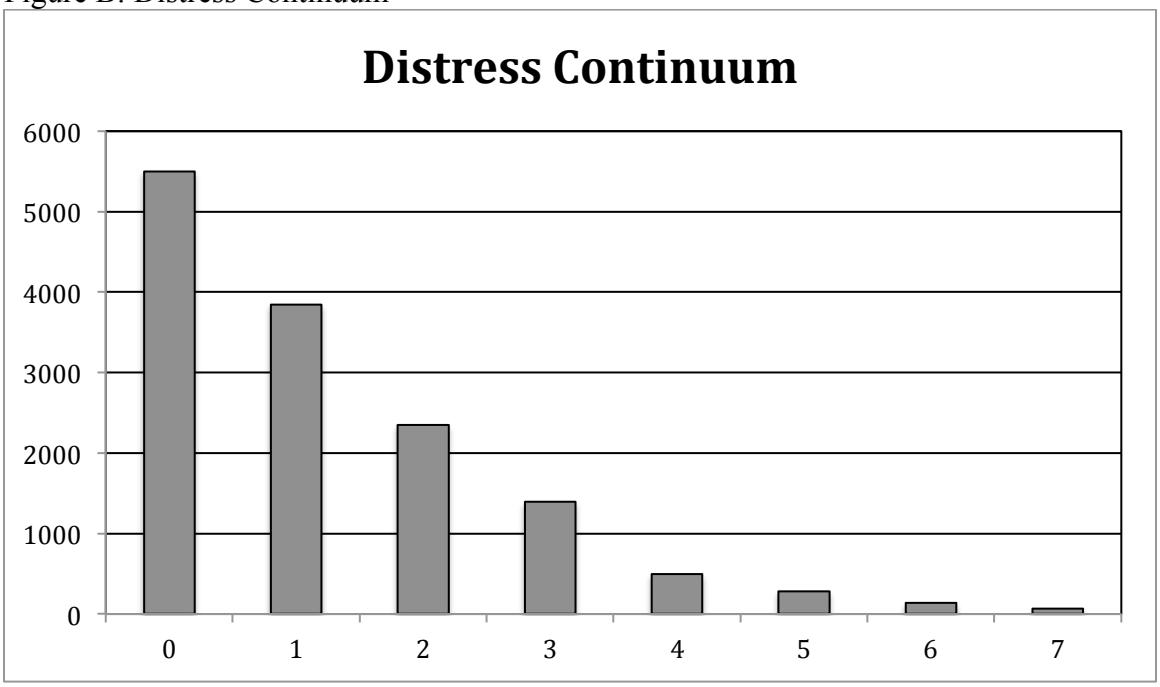
Q30). Prior Attempts	0 (None)	13005	92.8
	1-5 attempts (Yes)	1003	7.2
Q36). Membership in student organizations	Member	11803	84.1
	Not Involved	2231	15.9
Q36). Student Organizations	Academic	7487	53.8
	Arts	3286	23.8
	Fraternity/Sorority	1981	14.3
	International/Cultural	1653	12
	IM Club sports	3580	25.9
	Political/Gov	1341	9.7
	Religious	3918	28.4
	Service	2719	19.7
	Varsity Athletics	1029	7.3

Q64). Seriously Considered Attempting Suicide in the past 12 months (Suicidal Thoughts)	No	13202	94.4
	Yes	781	5.6

Q63). Distress Continuum Item	**Coded**	**Frequency**	**Percent**
"I did not have any thoughts like these"	0	5500	39.1
"This is all just too much"	1	3847	27.3
"I wish this this would all just end"	2	2352	16.7
"I have to escape"	3	1396	9.9
"I wish I was dead"	4	496	3.5
"I want to kill myself"	5	282	2.0
"I might kill myself"	6	135	1.0
"I will kill myself"	7	71	.5

Mean = 1.24; Std. Dev = 1.399

Figure B: Distress Continuum



Primary Results

Outcome variable: distress.

Research question 1.

This analysis examines if there is a negative relationship between connectedness and distress during a stressful period, after controlling for history of prior attempts. A regression analysis was conducted with the Distress Continuum as the dependent variable. Connectedness was entered as the independent variable. Prior Attempts was entered as a control variable. Results indicate that a significant amount of variability was explained: F (2,13881) = 1900.835, $p < .001$. The set of predictors explained 21.5% of the variance (Adjusted $R^2 = .215$). Findings suggest that *higher* levels of Connectedness

significantly predicted *lower* levels of Distress (t = -50.668, $p < .001$), whereby each unit *increase* in Connectedness is associated with a *decrease* in Distress by .534.

Table 3: Regression Coefficients

Variable	**B**	**S.E. B**	**Standard Beta**	**t**
(Constant)	1.168	.011		106.818
Prior Attempt	1.067	.041	.197***	25.783
Connectedness	-.534	.011	-.387***	-50.668

*p <.05; **p<.01;***p<.001

Table 4: Correlation Matrix

	Connectedness	Prior Attempts
Connectedness	1.00	
Prior Attempts	.174	1.000

Research question 2.

This analysis examines if there is a relationship between sexual orientation and distress, and/or a relationship between gender and distress during a stressful period, after controlling for prior attempts and connectedness. A regression analysis was conducted with the Distress Continuum as the dependent variable. Sexual Orientation and Gender were entered as the independent variables. Prior Attempts and Connectedness were entered as control variables. Results indicate that a significant amount of variability was explained: F (4, 13840) = 987.270, $p < .001$. The set of predictors explained 22% of the variance (Adjusted $R^2 = .222$). Findings suggest that Gender had a significant relationship with Distress. Identifying as Female significantly predicted *higher* levels of Distress (t = 8.701, $p < .001$), whereby females were predicted to have distress levels .191 higher than males. Results also suggest that Sexual Orientation had a significant relationship with Distress. Students who identified as Heterosexual (GLBQ) endorsed

lower levels of Distress (t = -9.028, $p < .001$), whereby Heterosexual students were predicted to have distress levels .343 lower than Non-heterosexual students.

Table 5: Regression Coefficients

Variable	**B**	**S.E. B**	**Standard Beta**	**t**
(Constant)	1.363	.039		34.846
Prior Attempt	.999	.042	.184***	23.950
Connectedness	-.522	.011	-.379***	-49.585
Gender	.191	.022	.065***	8.701
Sexual Orientation	-.343	.038	-.069***	-9.028

*p <.05; **p<.01;***p<.001

Table 6: Correlation Matrix

	Sexual Orient.	Gender	Connect	Prior Attempts
Sexual Orient	1.000			
Gender	-.021	1.000		
Connectedness	-.078	.026	1.000	
Prior Attempts	.128	-.050	.160	1.000

Research question 3.

This analysis examines if there is a negative relationship between membership in student groups and distress during a stressful period, controlling for prior attempts and connectedness. A regression analysis was conducted with the Distress Continuum as the dependent variable. Membership was entered as the independent variable. Prior attempts and Connectedness were entered as control variables. Results indicate that a significant amount of variability was explained: F (3, 13851) = 1265.105, $p < .001$. The set of predictors explained 21.5% of the variance (Adjusted $R^2 = .215$). However, findings suggest that there was *not* a significant relationship between Membership and Distress (t = -1.245, $p > .05$).

Table 7: Regression Coefficients

Variable	**B**	**S.E. B**	**Standard Beta**	**t**
(Constant)	1.199	.027		44.837
Prior Attempt	1.065	.041	.197***	25.711
Connectedness	-.533	.011	-.386***	-50.428
Membership	-.036	.029	-.009	-1.245

*p <.05; **p<.01;***p<.001

Table 8: Correlation Matrix

	Membership	Prior Attempts	Connectedness
Membership	1.000		
Prior Attempts	.031	1.000	
Connectedness	-.062	.172	1.000

Research question 4.

This analysis examines if there is a relationship between the various types of groups and distress during a stressful period (compared to students not involved with those specific groups) and after controlling for prior attempts and connectedness. A regression analysis was run with the Distress Continuum as the dependent variable. Independent variables included: Academic Organizations, Arts Organizations, Fraternity/Sorority, International/Cultural Groups, Intramural/Club Sports, Political/Government Organizations, Religious Groups, Service Organizations, and Varsity Athletics. Prior Attempts was entered as a control variable. Results indicate that a significant amount of variability was explained: F (10, 13203) = 115.084, p < .001. The set of predictors explained 7.9% of the variance (Adjusted R^2 = .079).

Compared to students not involved in Academic organizations, members of Academic Organizations were predicted to have *lower* Distress levels by .154 (t = -6.320, p < .001). Compared to students not involved with Intramural/Club Sports organizations,

Intramural/Club Sports members were predicted to have *lower* Distress levels by .129 (-4.678, $p < .001$). Compared to students not involved with Religious Organizations, Religious Organization members were predicted to have *lower* Distress levels by .074 (t = -2.806, $p < .01$). Compared to students not involved with Varsity Athletics, Varsity Athletes were predicted to have *lower* Distress levels by .207 (t = -4.521, $p < .001$).

Alternately, compared to students not involved in Arts Organizations, members of Arts Organizations were predicted to have an *increase* in Distress levels by .147 (t = 5.241, $p < .001$). Compared to students not involved in International/Cultural groups, International/Cultural group members were predicted to have an *increase* in Distress levels by .106 (t = 2.860, $p <.01$).

Non-significant results include Fraternity/Sorority (t = .335, $p >.05$); Political/Government (t = 1.773, $p >.05$); and Service Organizations (t = -.448, $p >.05$).

Table 9: Regression Coefficents

Variable	**B**	**S.E. B**	**Standard Beta**	**t**
(Constant)	1.234	.021		59.235
Prior Attempt	1.388	.046	.256***	30.489
Academic	-.154	.024	-.055***	-6.320
Arts	.147	.028	.044***	5.241
Fraternity/Sorority	.012	.034	.003	.335
International/Cultural	.106	.037	.024**	2.860
IM/Club Sports	-.129	.028	-.040***	-4.678
Political/Government	.072	.041	.015	1.773
Religious	-.074	.026	-.024**	-2.806
Service	-.014	.031	-.004	-.448
Varsity Athletics	-.207	.046	-.038***	-4.521

*p <.05; **p<.01;***p<.001

Table 10: Correlation Matrix

	Varsity	Frat/ Sor	Arts	Prior Att	Rel	Pol/ Gov	Intl/ Cultural	IM/Club	Service	Academic
Varsity	1.000									
Frat/Sor	.024	1.000								
Arts	.005	.001	1.000							
Prior Att	.015	.023	-.043	1.000						
Religious	-.008	.035	-.046	.009	1.000					
Pol/Gov	-.001	-.010	-.045	-.016	-.040	1.000				
Intl/Cultural	-.008	.021	-.085	-.021	-.051	-.076	1.000			
IM/Club	-.157	-.101	.058	.067	-.029	.009	-.009	1.000		
Service	.005	-.030	-.023	.008	-.093	-.120	-.084	-.038	1.000	
Academic	-.028	-.101	-.061	.029	-.034	-.101	-.006	-.058	-.138	1.000

Outcome variable: suicidal thoughts.

Research question 5.

This analysis examines if there is a negative relationship between connectedness and suicidal thoughts during a stressful period, after controlling for prior attempts. A logistic regression analysis was conducted to predict Suicidal Thoughts, using Connectedness as the predictor variable. Prior Attempts was entered as a control variable. Findings indicate that a significant amount of variability was explained (Omnibus chi-square = 1263.700, df = 2, $p < .001$). Cox & Snell Pseudo $R^2 = .087$ and Nagelkerke Pseudo $R^2 = .248$, suggesting that between 8.7% and 24.8% of the variance in Suicidal Thoughts can be accounted for by the model. After controlling for prior attempts, the values of the coefficients reveal that each 1 unit *decrease* in Connectedness, students are 3.16 times as likely to endorse Suicidal Thoughts. Alternately, with each 1unit *increase* in Connectedness, students are .316 times as likely to report Suicidal Thoughts, $p <$

.001(95% CI .287-.347). Table 11 gives coefficients, Wald statistics, associated degrees of freedom and probability values for each of the control and predictor variables.

Table 11: Information for control and predictor variables

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Prior Attempt	1.680	.092	333.962	1	<.001	5.365	4.480	6.424
Connectedness	-1.154	.048	573.361	1	<.001	.316	.287	.347
Constant	-3.702	.063	3493.804	1	<.001	.025		

Research question 6.

This analysis examines if there is a relationship between sexual orientation and suicidal thoughts, and/or gender and suicidal thoughts during a stressful period and after controlling for prior attempts and connectedness. A logistic regression analysis was conducted to predict Suicidal Thoughts, using Gender and Sexual Orientation the predictor variables. Prior Attempts and Connectedness were entered as control variables. Findings indicate that a significant amount of variability was explained (Omnibus chi-square = 1263.448, df = 4, $p < .001$). Cox & Snell Pseudo R^2 = .087 and Nagelkerke Pseudo R^2 = .250, suggesting that between 8.7% and 25% of the variance in Suicidal Thoughts can be accounted for by the model. The values of the coefficients reveal that Gender did *not* have a significant relationship with odds of Suicidal Thoughts (p = .267, 95% CI .910-1.075). However, Sexual Orientation was significantly related to Suicidal Thoughts. Students who identified as Non-Heterosexual (GLBQ) were predicted to be 1.77 times as likely to endorse Suicidal Thoughts. Alternately, students who identified as Heterosexual were predicted to be .566 times as likely to endorse Suicidal Thoughts (p

<.001, 95% CI .566-.699).Table 6.0 gives coefficients, Wald statistics, associated degrees of freedom and probability values for each of the control and predictor variables.

Table 12: Information for control and predictor variables

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Prior Attempt	1.607	.094	291.427	1	<.001	4.986	4.146	5.996
Connectedness	-1.142	.048	554.336	1	<.001	.319	.319	.351
Gender	-.095	.085	1.231	1	.267	.910	.910	1.075
Sexual Orientation	-.569	.108	27.809	1	<.001	.566	.566	.699
Constant	-3.312	.124	642.190	1	<.001	.044	.044	

Research question 7.

This analysis examines if there is a relationship between membership in student groups and suicidal thoughts during a stressful period and after controlling for prior attempts and connectedness. A logistic regression analysis was conducted to predict Suicidal Thoughts, using Membership as the predictor variable. Prior Attempts and Connectedness were entered as control variables. Findings indicate that a significant amount of variability was explained (Omnibus chi-square = 1265.682, df = 3, $p < .001$). Cox & Snell Pseudo R^2 = .088 and Nagelkerke Pseudo R^2 = .249, suggesting that between 8.8% and 24.9% of the variance in Suicidal Thoughts can be accounted for by the model. After controlling for Prior Attempts and Connectedness, the values of the coefficients reveal that Members of student groups were predicted to be .792 times as likely to endorse Suicidal Thoughts. Alternately, Non-Members were predicted to be 1.26 times as likely to endorse Suicidal Thoughts (p <.05, 95% CI .654-.959).Table 7.0 gives coefficients, Wald statistics, associated degrees of freedom and probability values for each of the control and predictor variables.

Table 13: Information for control and predictor variables

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Prior Attempt	1.674	.092	330.923	1	<.001	5.331	4.451	6.383
Connectedness	-1.144	.048	562.249	1	<.001	.319	.290	.350
Membership	-.233	.098	5.691	1	<.05	.792	.654	.959
Constant	-3.505	.102	1192.051	1	<.001	.030		

Research question 8.

This analysis examines if there is a relationship between the specific types of membership groups and suicidal thoughts during a stressful period and after controlling for prior attempts. A logistic regression analysis was performed with Suicidal Thoughts the dependent variable. Independent variables include: Academic Organizations, Arts Organizations, Fraternity/Sorority, International/Cultural Groups, Intramural/Club sports, Political/Government organizations, Religious groups, Service organizations, and Varsity Athletics. Prior Attempts was entered as a control variable. Findings indicate that a significant amount of variability was explained (Omnibus chi-square = 565.491, df = 10, $p < .001$). Cox & Snell Pseudo $R^2 = .042$ and Nagelkerke Pseudo $R^2 = .120$, suggesting that between 4.2% and 12% of the variance in suicidal thoughts can be accounted for by this model.

The values of the coefficients reveal that compared to students not involved with Academic Organizations, members of Academic Organizations were predicated to have a *decrease* in the odds of Suicidal Thoughts by a factor of .708 (95% CI .603-.832). Compared to students not involved with Intramural/Club sports, members of Intramural/Club sports were predicted to have a *decrease* in the odds of suicidal thoughts

by a factor of .761 (95% CI .620-.934). Compared to students not involved with Religious Organizations, members of Religious Organizations were predicted to have a *decrease* in the odds of suicidal thoughts by a factor of .820 (95% CI .683-.984). Alternately, members of Arts Organizations were predicted to have an *increase* in the odds of suicidal thoughts by a factor of 1.205 ($p < .05$). Membership in other student groups: Fraternity/ Sorority, International/ Cultural, Political/Government Organizations, and Varsity Athletics were not significant. Table 8.0 gives coefficients, the Wald statistics, associated degrees of freedom, and probability values for each of the control and predictor variables.

Table 14: Information for control and predictor variables

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Prior Attempt	2.117	.088	586.187	1	<.001	8.307	6.992	9.868
Academic	-.345	.082	17.700	1	<.001	.708	.603	.832
Arts	.187	.089	4.348	1	.037	1.205	1.011	1.436
Fraternity/Sorority	-.127	.127	.989	1	.320	.881	.687	1.131
International/Cultural	-.034	.126	.074	1	.785	.966	.755	1.237
IM/Club Sports	-.273	.105	6.812	1	.009	.761	.620	.934
Political/Government	.156	.135	1.341	1	.247	1.169	.898	1.522
Religious	-.199	.093	4.562	1	.033	.820	.683	.984
Service	-.208	.113	3.408	1	.065	.812	.651	1.013
Varsity	-.100	.173	.339	1	.561	.904	.645	1.268
(Constant)	-2.893	.068	1762.807	1	<.001	.055		

Outcome variable: connectedness.

Research question 9.

This analysis examines if there is a relationship between sexual orientation and connectedness and/or gender and connectedness during a stressful period and after controlling for prior attempts. A regression analysis was conducted with Connectedness

as the dependent variable. Sexual Orientation and Gender were entered as predictor variables. Prior Attempts was entered as a control variable. Findings indicate that a significant amount of variability was explained: F (3, 13842) = 174.120, p < .001. The set of predictors explained 3.6% of the variance (Adjusted R^2 = .036). Findings suggest that there was a significant relationship between Sexual Orientation and Connectedness (t = 9.514, p < .001), whereby students who identify as Heterosexual were predicted to endorsed *higher* levels of Connectedness by .281. Gender was also significantly related to Connectedness (t = -3.018, p <.01), whereby students who identified as Female were predicted to endorse *lower* levels of Connectedness by .053.

Table 15: Regression Coefficients

Variable	**B**	**S.E. B**	**Standard Beta**	**t**
(Constant)	-..177	.032		-5.598
Prior Attempt	-.633	.033	-.161***	-19.038
Sexual Orientation	.281	.031	.077***	9.173
Gender	-.053	.018	-.025**	-3.018

*p <.05; **p<.01;***p<.001

Table 16: Correlation Matrix

	Gender	Sexual Orientation	Prior Attempts
Gender	1.000		
Sexual Orientation	-.019	1.000	
Prior Attempts	-.055	.143	1.000

Research question 10.

This analysis examines if there is a relationship between membership in student groups and connectedness during stressful period and after controlling for prior attempts. A regression analysis was conducted with Connectedness as the dependent variable. Membership was entered as the predictor variable. Prior Attempts was entered as a

control variable. Findings indicate that a significant amount of variability was explained: F (2, 13850) = 242.087, p < .001. The set of predictors explained 3.4% of the variance (Adjusted R^2 = .034). Findings suggest that there is a significant relationship between Membership and Connectedness (t = 7.264 p < .001), whereby Members of student groups were predicted to endorse *higher* levels of Connectedness by .168. Table 10.0 gives the regression coefficients Table 10.1 includes the correlation matrix for all variables included in the multiple regression analysis.

Table 17: Regression Coefficients

Variable	**B**	**S.E. B**	**Standard Beta**	**t**
(Constant)	-.093	.021		-4.344
Prior Attempt	-.674	.033	-.172***	-20.540
Membership	.168	.023	.061***	7.264

*p <.05; **p<.01;***p<.001

Table 18: Correlation Matrix

	Membership	Prior Attempts
Membership	1.000	
Prior Attempts	.042	1.000

Research question 11.

This analysis examines if there is a relationship between the specific types of membership groups and connectedness during a stressful period and after controlling for prior attempts. A regression analysis was run with Connectedness as the dependent variable. Independent variables included: Academic Organizations, Arts Organizations, Fraternity/Sorority, International/Cultural Groups, Intramural/ Club Sports, Political/Government Organizations, Religious Groups, and Service Organizations, and Varsity Athletics. Prior Attempts was entered as a control variable.

Findings indicate that a significant amount of variability was explained: F (10, 13106) = 67.817, $p < .001$. The set of predictors explained 4.6% of the variance (Adjusted $R^2 = .046$). Compared to students not involved with Academic Organizations, members of Academic Organizations were predicted to have *higher* levels of Connectedness by .120 (t = 6.688, $p < .001$). Compared to students not involved with Intramural/Club Sports, Intramural/Club Sports members were predicted to have *higher* levels of Connectedness by .139 (t = 6.829, $p < .001$). Compared to students uninvolved with Religious Organizations, members of Religious Organizations were predicted to have *higher* levels of Connectedness by .150 (t = 7.677, $p < .001$). Compared to students not involved with Service Organizations, members of Service Organizations were predicted to have an *increase* in Connectedness by .061 (t = 2.683, $p < .01$). Compared to students uninvolved with Varsity Athletics, Varsity Athletes were predicted to have an *increase* in Connectedness by .188 (t = 5.594, $p < .001$).

Alternately, compared to students uninvolved with Arts Organizations, members of Arts Organizations were predicted to have *lower* levels of Connectedness by .049 (t = -2.388, $p < .01$). Compared to students uninvolved with International/Cultural Organization, members of International/Cultural Organizations were predicted to have *lower* Connectedness levels by .060 (t = -2.179, $p < .05$). Non-significant results include members of Fraternity/Sorority (t = 1.937, $p > .05$) and Political/Government (t = -1.113, $p > .05$).

Table 19: Regression Coefficients

Variable	**B**	**S.E. B**	**Standard Beta**	**t**
(Constant)	-.111	.015		-7.160
Prior Attempt	-.645	.034	-.165***	-19.215
Academic	.120	.018	.059***	6.688
Arts	-.049	.021	-.021**	-2.388
Fraternity/Sorority	.049	.025	.017	1.937
International/Cultural	-.060	.027	-.019*	-2.179
IM/Club Sports	.139	.020	.060***	6.829
Political/Government	-.033	.030	-.010	-1.113
Religious	.150	.019	.066***	7.677
Service	.061	.023	.024**	2.683
Varsity	.188	.034	.048***	5.594

*p <.05; **p<.01;***p<.001

Table 20: Correlation Matrix

	Varsity	Frat/Sor	Arts	Prior Att	Rel	Pol/Gov	Intl/ Cultural	IM/Club	Service	Academic
Varsity	1.000									
Frat/Sor	.024	1.00								
Arts	.006	.001	1.000							
Prior Att	.015	.023	-.044	1.000						
Rel	-.007	.034	-.046	.009	1.000					
Pol/Gov	.000	-.009	-.046	-.016	-.039	1.000				
Intl/Cultural	-.008	.022	-.085	-.021	-.050	-.076	1.000			
IM/Club	-.155	-.102	.057	.067	-.028	.009	-.010	1.000		
Service	.004	-.030	-.023	.008	-.094	-.119	-.084	-.038	1.000	
Academic	-.028	-.101	-.060	.029	-.036	-.102	-.066	-.058	-.138	1.000

Chapter Five: Discussion and Implications

In this chapter, findings from the present study regarding the relationship between connectedness, gender, sexual orientation, membership in student groups, distress, and suicidal thoughts will be discussed and integrated with directions for future research. Next, implications for developing population-based college suicide prevention interventions will be discussed. Lastly, a discussion of the study strengths, limitations, and future directions concludes this chapter.

The primary aim of this study was to gain a fuller understanding of the factors that contribute to student distress, suicidal thinking, and connectedness. Suicide prevention researchers are increasingly considering population-based approaches for suicide prevention on college campuses and within student populations (Drum et al., 2009, 2011; Schwartz, 2006b, 2011; Davidson & Locke, 2010). Additionally, fostering connectedness at the college and community level is a strategy that has gained considerable attention with both researchers and experts in the field, including: the Centers for Disease Control (CDC), Institute of Medicine (IOM), The Jed Foundation/SPRC, GLSMA, and the United States Air Force (CDC, 2010; IOM, 2001, 2009; TJF/SPRC, 2006; Knox et al., 2003).

Population-based prevention programming strives to reach entire populations within structured environments, regardless of one's risk factors. Moreover, the goal of prevention programming is to improve the wellbeing of the overall population while simultaneously decreasing the incidence of a disorder (Rose, 1992). This approach strives to impact a larger population by expanding from the traditional model of crisis

management, which focuses costly resources on specific individuals endorsed elevated risk factors. Prevention programming intends to reach entire populations within structured environments, regardless of one's risk factors. Further, the goal of prevention programming is to improve the health of the overall population while simultaneously decreasing the incidence of a disorder (Rose, 1992). From a different but related perspective, in the protocol, "Social connectedness interventions for preventing suicide in young and middle-aged adults," Goss and colleagues (2012) suggest that connectedness interventions could be implemented at the "societal level (e.g. to improve social integration), the social network level (e.g. quality and quantity of ties between people), or the individual level (e.g. provision of support, promotion of social participation, or engagement)" (p. 2).

Prior Suicide Attempts

While the current study did not explicitly include prior suicide attempts as a research question, the review of the literature indicated that various historical variables have been related to suicidal thoughts and behaviors. Prior attempts was included in the current analysis as a control variable, given its strong relationship with suicidal thoughts and behaviors described in detail in the literature review (Joiner et al., 2005; Maser et al., 2002; Putnins, 2005; Brown et al., 2000; Tidemalm et al., 2005; Zonda, 2006). Therefore, an implicit question for the current study involves validating the utility of this variable. Consistent with the literature (mentioned above), in the current study a presence of prior lifetime suicide attempts was significantly and strongly predictive of higher odds of

suicidal thoughts, higher levels of distress during a recent stressful period, and lower levels of connectedness.

These findings mirror what Joiner and colleagues (2005; 2009) found about the habituation properties of prior experiences of self-harm or suicide attempts, which involve an individual becoming more familiarized to suicidal behaviors while also increasing one's capability to engage in these behaviors (Joiner, 2005; 2009; Van Orden, 2008; 2010). While the relationship between prior attempts and both suicidal thoughts and distress is not a new discovery, the validation of this relationship in a large sample of undergraduate students emphasizes the importance of universities taking notice of a lifetime history of mental health concerns, including prior suicide attempts. This knowledge would enable a university to potentially identify students at elevated risk and vulnerability (i.e. an *indicated population*) for suicidal behaviors when under duress. Lastly, discovering that a history of prior suicidal attempts is strongly related to lowered connectedness, may inform population-based college suicide prevention interventions, whereby university stakeholders can implement programing that encourages students to build connections with each other and with the university (examples given in more detail below).

Connectedness

A central question for the current research study was to substantiate the negative relationship between connectedness and distress, and connectedness and suicidal thoughts in a college population. Further, as research has begun to examine potential pathways for increasing connectedness (Joiner, 2011; Schwartz, 2011), this study set out to determine

if membership in student groups was related to higher levels of connectedness. Moreover, the study examined if membership in extra-curricular activities was more or less predictive of increased connectedness.

Consistent with the literature, higher levels of self-reported connectedness was significantly related to lower levels of self-perceived distress and reduced odds of suicidal thoughts (Blai, 1989; Van Orden et al. 2010; Joiner, 2009; Lee et al., 2001; Witherspoon, Schotland, Way, & Hughes, 2009; Zimmer-Gembeck, Chipuer, Hanisch, Creed, & McGregor, 2006). Students who endorsed higher levels of connectedness tended to report lower levels of distress (by .5) and had lower odds of suicidal thoughts (by a factor of .3). Alternately, students who endorsed lower levels of connectedness reported significantly higher levels of distress and tended to have higher odds of suicidal thinking. These findings are not only consistent with findings from past studies that examined the relationship between connectedness and suicidal thoughts with non-student populations, but also supports that connectedness is a significant predictor of distress and suicidal thoughts in the undergraduate college student population.

As stated above in the literature review, a person's sense of social isolation or disconnection from others forms the core of thwarted belongingness (Joiner, 2005; 2009). Further, other studies have identified that common risk factors for suicidal ideation include poor family connectedness, a perceived absence of caring adults, and social isolation (Eisenberg & Resnick, 2006; Halpert, 2002). Similarly but from a different perspective, from a bio-psycho-social framework, Goss and colleagues (2012) suggest that fostering connectedness may intersect with psychological pathways, whereby self-

efficacy, self-esteem, coping may be improved. Moreover, at a physiological level, the authors state that connectedness could "buffer the effects of environmental stressors on the stress response, preventing increases in blood pressure, cortisol, adrenaline, and noradrenaline, and supporting immune function which may prevent the onset of depression and, consequently, suicide" (p. 3). Connectedness may improve general health through psychological and physiological pathways and therefore can play an important role in decreasing distress and suicide-related behaviors. While this study only sought to establish the relationship between connectedness and distress, and connectedness and suicidal thoughts with college students, it is vital that college campus administrators consider the wide-sweeping positive impact that increasing connectedness on college campuses may have for the general student population, in ways that have yet to be examined.

Increasing student involvement on campus may be one way to increase a sense of connectedness on college campuses. Schwartz (2011) suggests that enhancing the appeal of the campus as a place where students would want to be and remain on weekends is likely to reduce student suicide. The campus environment and the ability for universities to give students access for various ways to generate connectedness, may play a role in maintaining the suicide-protective benefit students' experience. The current study found that students who were members of organized extra-curricular activities endorsed higher levels of connectedness. Further, some of the campus organizations were found to bolster connectedness more significantly than others, which has yet to be fully examined in the literature. Specifically, members of academic organizations, intramural/club sports,

religious, service organizations, and varsity athletics were related to higher levels of connectedness, compared to students not involved with these organizations. Given these findings, it may be beneficial to encourage students to join campus organizations during freshman orientation. It may be equally important to identify students who do not live on campus, commuter students, international students, and transfer students. These students have historically been at risk for suicidal thoughts and behaviors (Schwartz, 2006b; 2011) and represent another *indicated population* that would benefit from a population-based initiative to encourage students to join campus organizations, such as academic, intramural/club, religious, and varsity athletics service and varsity athletics. It would be beneficial to further examine what is unique with these organizations, as they had a stronger relationship to connectedness than other organizations.

Importantly, this study also found that members of Arts Organizations and International/Cultural groups were predictive of lower levels of connectedness. It may be beneficial for leaders of these groups on campuses to reach out to these students and inquire about their wellbeing, how connected to others do they feel, and notice any warning signs of suicidal thoughts, distress or decreased ability to cope. These students in particular, may struggle to seek help and reach out to others if they exhibit lower levels of connectedness. From a population-based intervention perspective, encouraging students to join student organizations and activities may bolster the wellbeing and moral of the overall student population, and not just positive impact those who are at risk. As stated above, increased levels of connectedness carries a host of benefits. By various campus stakeholders being invested in creating a culture of connectedness amongst students and

between students and the university, it is possible that students' quality of life will be bolstered, without the need to seek out the students who are specifically at risk.

Gender

In the current study, gender did not have a significant relationship with suicidal thoughts. However, gender did have a significant relationship with distress, with females endorsing *slightly* higher distress levels than males (by .2). It may be possible that the differences in distress levels and lack of significant findings with suicidal thoughts for men and women, is related to self-disclosure. Women may be more comfortable in self-disclosing about their distress, or more aware of their distress than men. Being female was also associated with *slightly* lower levels of connectedness than males (by .05). It is possible that the slightly lower connectedness levels for women helps to explain the slightly elevated distress levels.

The literature is scarce with its examination of gender's relationship with connectedness, especially amongst the college population; however, researchers have discussed that *how* men and women experience connectedness may differ. Carver et al. (1989) discovered that women, more than men, reported that they usually sought social support and vented emotions when distressed. Alternately, men turned to alcohol versus reaching out to their connections. Carver's (1989) findings suggest that women tend to utilize their connections with others as a way to cope, more than men. Men may be less aware of their distress and/or may be less apt to reach out to others as a way to cope; instead, turning to less healthy coping mechanisms such as alcohol.

Cyzk, E., Liu, Z., and King, C. A. (2012) discovered that experiencing an improved sense of connectedness with family after a suicidal crisis led to a reduction in severity of depressive symptoms and suicidal ideation for both male and female adolescents. The authors also found that regardless of how connected to peers they felt at baseline, adolescents who experienced greater, as opposed to lesser, increase in a sense of connectedness with peers during the 3 months after hospitalization were half as likely to attempt suicide following hospitalization, a relationship that was not moderated by gender or multiple suicide attempts. The authors suggest that this finding highlights the important role of peer relationships in influencing suicidal behavior among high-risk adolescents, regardless of gender.

Lee & Robbins (2000) discovered that college women and men did not differ in their self-reported levels of social connectedness, but they did differ in the types of relationships that satisfied their needs for social connectedness. For women, relationships that emphasized physical proximity (i.e., reliable alliance) and not social comparison (i.e., guidance) contributed to social connectedness. For men, relationships that emphasized social comparison (i.e., reassurance of worth) but not intimacy or physical proximity (i.e., opportunity for nurturance and reliable alliance) contributed to social connectedness. The authors suggest that this knowledge can be used to develop prevention programs that help ease major life transitions for students. For example, although the start of college can be exciting, it can also be overwhelming and frightening. Students with low levels of connectedness may be particularly vulnerable to feelings of misunderstanding, loneliness, and isolation during this period. The study's findings offer

ideas about how to offer distinctive experiences for women and men in order to foster connectedness in their new environments. Social activities that promote individual and group accomplishments may help people (i.e. men) who value social comparison to feel more connected. At the same time, mentorship programs and small group activities may help other people (i.e. women) who value intimacy and physical proximity feel more connected (Lee & Robbins, 2000).

Sexual Orientation

Results for the current study indicate that sexual orientation was significantly related to distress, suicidal thoughts, and connectedness. Compared to Non-heterosexual (GLBQ) students, heterosexual students endorsed lower levels of distress (by .3), lower odds of suicidal thoughts (by a factor of .6), and higher levels of connectedness (by .3). In other words, GLBQ students endorsed higher levels of distress, higher odds of suicidal thoughts, and lower levels of connectedness, than their heterosexual counterparts. It is important to note that the percentage of GLBTQ students in this study may be under-represented. It is likely that there are more students who identify as GLBTQ who (for a variety of reasons) chose to not disclose their sexual orientation when completing the survey.

The current study's findings are consistent with the literature that has found elevated rates of suicidal ideation and attempted suicide with GLB youth and young adults (D'Augelli, Hershberger, & Pilkington, 2001; Remafedi, French, Story, Resnick, & Blum, 1998; Faulkner & Cranston, 1998; Bagley & Trembly, 1997; Remafedi, 2002; Kitts, 2005). Additionally, current findings are consistent with previous studies (although

limited in number) that found GLB adolescents and young adults tend to report lower levels of social support, connectedness, and self-esteem (Rosario, Schrimshaw, & Hunter, 2005; Safren & Heimberg, 1999) compared to heterosexuals. Further, previous studies indicate bi-sexual adolescents who experience attraction to both sexes have reported less social support than peers who experience attraction to only the same sex or only the opposite sex (Langhinrichsen-Rohling, Lamis, & Malone, 2011).

Hill and colleagues (2012) suggest that it is not sexual orientation itself that increases risk factors for suicide related behaviors in GLB adolescents and young adults. Rather, it is a combination of the life experiences and situations that some GLB individuals encounter (because of their sexual orientation) that increases these non-GLB specific risk factors for suicidality. In terms of the college environment, there is a growing awareness that students need to see their identities reflected in the multiple dimensions of an academic institution (i.e. content of formal instruction, student support services, organizations and clubs, student activities, etc.) in order to develop a healthy sense of self. Russell, Van Campen, Hoefle, & Boor (2011) illustrate that historically, GLBT students, faculty, and staff are not reflected in the general university culture, and therefore, are under-represented in the climate of most colleges and universities. The authors propose that campus culture reflects broader cultural systems of heteronormativity, which defines broad cultural values about what is "normal". While colleges and universities are typically more progressive in thought, they are still situated within this broader societal system. "Thus, LGBT students often experience campus climates as marginalizing or even hostile, which may result in lower levels of

connectedness, higher levels of distress, and higher odds of suicidal thinking" **(**Russell et al., 2011, p. 149)**.**

The current study's finding that GLBQ students experience less connectedness than their heterosexual counterparts may offer a glimpse into the underlying mechanism of their elevated distress levels and increased odds of suicidal thought, specifically for the college population, which has limited presence in the literature.

From a population-based perspective, irrespective of sexual orientation, prevention programs may be able to engage students in activities that benefit others (e.g. service activities, volunteering) and explicitly emphasize a students' contributions to others and society. From a more targeted outreach approach to reach indicated populations and at-risk students, Russell and colleagues (2011) recommend that initiatives could involve themes involving fear of rejection associated with "coming out" or outreach to those who struggled with past and/or ongoing rejection due to their sexual orientation. For GLBTQ students, it is possible that reducing fears and expectations of future rejection may help to increase a sense of connectedness. Russell and colleagues (2011) suggest that many universities are incorporating GLBTQ-focused efforts into multiple dimensions of campus life, as GLBTQ students have a need to find connections with other GLBTQ and allied students in to develop friendships and foster a sense of connectedness and community. The authors further suggest that student affairs is primarily responsible for college life outside of the classroom, and students affairs divisions and professionals can do (and are doing) many things to serve GLBTQ students through program and opportunities in residence life (Russell et al., 2011).

Membership and Types of Student Groups

Whether a student was a member of campus organizations or was not involved, was *not* significantly related to distress. However, students who did not participate in student organizations were 1.26 more times as likely to endorse suicidal thinking, than members (marginally significant). Membership was also significantly related to slightly higher levels of connectedness, compared to those who did not participate in college organizations (by .2). The study's non-significant findings of membership's relationship with distress, along with the minimal practical significance of membership's relationship with suicidal thoughts may be due to the diversity of findings *within* the types of student groups (discussed in more detail below); some types of student groups had a positive relationship with distress and others had a negative relationship with distress, as was the case for connectedness.

Members of Varsity Athletics, Academic Organizations, Intramural/Club Sports, and Religious Organization reported *lower* levels of distress and were predicted to have *lower* odds of suicidal thoughts (except for varsity athletes), compared to students not involved with these organizations and activities. Further, members of these groups, along with Service Organizations, endorsed *higher* levels of connectedness than uninvolved students. Alternately, members of Arts Organizations and Cultural/International groups reported *increased* levels of distress and *lower* levels of connectedness, compared with students not involved. Across all types of groups, membership in students groups did not increase the odds of suicidal thoughts, compared to students not involved with those specific organizations.

Scarce literature exists from which to compare the current study's findings. Some studies have examined high school students (Harrison & Narayan, 2003; Sabo et al., 2005; Talliaferro, et al., 2008) and others have only examined collegiate student-athletes compared to non-student athletes (i.e. Armstrong & Oomen-Early, 2009; Brown & Blanton, 2002). Few studies have compared various types of student groups and how being a members of these extra-curricular activities relate to distress and suicidality (i.e. Brener, 1999; Feldman, 2005; Barber et al., 2001). And, the best of the author's knowledge, no previous studies have examined membership in various types of student groups and connectedness. Karcher and Lee (2002) define connectedness as "one's perception of his or her own involvement in and affection for others, activities, and organizations" (p. 93). This definition reflects the two primary ways of connecting through activity or involvement and through caring. Further, in this definition connectedness is described as something that is not merely received, but reciprocated as well, a view shared by Whitlock (2006, 2007). It may be that these particular types of student organizations examined in the current study are unique in the protection they confer for students. In other words, perhaps Academic Organizations, Intramural Sports, Religious Organizations, Service Organizations, and Varsity Athletics are unique in the type of protection they offer students with creating a reciprocated sense of connectedness, where it is not just received but also generated by its members.

Perhaps one of the more interesting findings from this study is the elevated distress and diminished connectedness experienced by members of Arts Organizations and Cultural/International groups, compared to student not involved with these

organizations. The current study's findings are consistent with Barber et al.'s (2008) discovery that adolescent student performing art's members reported more suicide attempts and visits to psychologists upon reaching adulthood (24 years-old). It may be that students who are attracted to theatre and the arts, also experience more distress and feel less connected to the world around them. Carpenter (2009) found that sexual minority males and females had higher rates of participation in the arts and politics, suggesting that they find these activities significantly more important than their heterosexual peers. Additionally, the author suggested that this could have implications for understanding how gay, lesbian, and bisexual identities and friendship networks are formed in college. Thus, it is possible that Arts and Theatre Organizations consist of larger numbers of GLBTQ students, thereby also reflecting an elevated risk for suicidality, distress, and lower levels of connectedness.

Additionally, while this study did not examine race/ethnicity as predictor variables, it may be that students who are members of cultural/international groups are either students of color and/or international students. This subgroup of students may struggle with connecting to their university and the student-body population due to their racial and ethnic background and being a minority in a predominately white university setting (Gutierrez et al., 2005; Kisch et al., 2005). Further, research indicates (see literature review above) that suicide rates are increasing with the minority youth population (Cavanagh et al., 2003; Brener et al., 2000). Similar to the sexual minority student population, ethnic and racial minorities may experience elevated levels of distress and lower levels of connectedness because of discrimination, lack of a diverse presence

on their campus, and fewer fellow students of color. Moreover, while this study did not examine international students in particular, it is expected that they comprise much of the membership of cultural/international student groups. International students face challenges on college campuses, including "language barriers, visa issues, and xenophobic behavior by Eurocentric Americans" (Cuyjet, Howard-Hamilton, & Cooper, 2011). Additionally, these students are typically attending school in the states far from home and may feel less connected to both their college peers and their support system from their home country.

The current study found that membership in several student groups offered significant protection from suicidal thinking; however, Varsity Athletics did not. Academic organizations, Intramural/Club Sports, and Religious Organizations were predictive of significantly reduced odds of suicidal thoughts. As stated in the literature review, past studies consistently found that student athletes had lower odds of suicidal thoughts than non-student athletes (Armstrong & Oomen-Early, 2009; Brown & Blanton, 2002). However, the above-mentioned studies mostly compared high school student-athletes to non-student athletes, and rarely examined other types of student organizations. Regardless, the current study's findings challenge the notion that membership in Varsity Athletics provides a distinct protective factor against suicidality, compared to involvement in other extracurricular activities (Taliaferro, 2010).

It is possible that although many student-athletes find participation in intercollegiate activities to foster a sense of connectedness (also found in the current study), a growing number also will experience issues related to adjustment problems,

emotional concerns, and psychological distress as a result of their participation (Watson, 2007). Further, members of Intramural/Club sports, Academic, and Religious organizations may receive similar levels of support and being "plugged in" to a network, but experience less pressure and fewer demands than student athletes. For example, the majority of varsity student-athletes participate in 20 hours of National Collegiate Athletic Association (NCAA) sanctioned activities per week (i.e. practice, film review, weight lifting) and many unofficially do more on top of the 20 hour maximum, per NCAA regulations (i.e. travelling to competitions, meetings with coaches, etc.).

Watson (2007) suggests that student-athletes commonly must invest as much time during the academic year to sports-related activities as an individual performing a full-time job. These multiple demands on their time often limit the interactions student-athletes have with individuals unaffiliated with the institution's athletic department. For many student-athletes, this lack of time for developing social relationships with students outside the athletic department can be a source of much distress. As a result, demands of athletic participation often lead to feelings of social isolation (Harris, Altekruse, & Engels, 2003), and in some cases, increased feelings of stress and anxiety (Stone & Strange, 2000). These findings, however, point to varsity athletes' relationship with distress and connectedness, and not the protective benefits in relation to suicidal thoughts.

In summary, it may be that while some similarities can be drawn, the current study's college population differs greatly from a high school population. Most college students no longer live at home and need to find new ways to feel connected and cope with distress than when they were younger. While the causal mechanism for the

relationship between membership in student groups and connectedness, distress, and suicidal thoughts cannot be determined by the current study—it is likely that students who feel more emotionally engaged, connected to their peers, and unified to the world as a whole, are protected from progressing on the distress continuum and experience less distress than their non-members counterparts. It is necessary that more studies examine the college population specifically, as college students are in a unique and structured environment that also lends itself to unique sources of stress as students emerge into adulthood.

Implications for Connectedness on College Campuses

The demographic make-up of today's college students is more diverse than any previous generation to attend college (Cuyjet et al., 2011; Watkins, Hunt, & Eisenberg, 2012). Additionally, recent reports indicate that consecutive generations of diverse students for the past several decades endorse more mental health problems than previous generations (Twenge, Gentile, DeWall, Ma, Lacefield, & Schurtz, 2010). Watkins et al. (2012) illustrates that college counseling centers face a multitude of challenges in the current higher education environment, but little is known about how they are responding to the increased demand for mental health services and the increased severity of their students' problems. The authors describe the challenge that so many college counseling centers across the country experience, which is an increase in the number of students seeking help, coupled with an increase in the severity of mental health issues being presented. Simultaneously, college mental health centers are experiencing budgetary cutbacks and more burden of responsibility to provide support services for all of the

students in need.

Given the current findings, how can college campuses increase prevention programming with the aim of increasing the number or quality of bonds between individuals or groups? How do colleges increase the extent to which an individual participates or engages socially? Gross and colleagues (2012) suggest, *universal interventions* have the potential benefit of working regardless of individuals' risk factors changing over time and do not require identification of those at elevated risk for suicide. Similar to universal interventions for a non-student population, Drum and Burton Denmark (2011) (mentioned earlier) support a population-level prevention approach to college student suicide. Given the scarce mental health resources of the majority of college campus mental health centers (Drum & Burton Denmark, 2011), enhancing prevention programs that focus upon connectedness as an intervention, may carry a significant impact in not just increasing connectedness, but also preventing distress and suicide.

In terms of steps that college campuses can take to move into a population level prevention model, Drum and Burton Denmark (2011) suggest an *ecological prevention* approach. They illustrate that the purpose of an "ecological prevention is to alter environmental qualities and processes to be health promoting and to reduce or remove those qualities of the environment that are health degrading" (p. 264). Similar to a universal intervention, there is no specific population with which to intervene with ecological prevention strategies. The authors emphasize that the interventions in this category are ubiquitous and reach all students naturally. Thus, they reach all students

organically and not only benefit the current population of students but also future populations.

Drum and Burton Denmark (2011) suggest that students do not need to take action to participate in these interventions, as the university carries the responsibility of providing the intervention. Moreover, the authors explain that while the ecological interventions may require substantial investment and resources in order to be implemented, these interventions are typically "self-renewing", which is highly conducive to being cost-effective for the long term, and carries a lasting positive impact of future generations of students. For example, some universities have created freshman interest groups that create a setting for students to interact with the same set of peers across strategically and thematically linked courses. Likewise, planned dorm/residential programming allows first-year students to interact and also promotes the development of connections throughout one's college experience. Ecological interventions could also impact students' physical safety with the campus environment (i.e. banning fire arms on campus or barriers on high buildings to reduce jumping).

Drum and Burton Denmark (2011) explain that *proactive prevention interventions* aim to make students' behavior and presence in the environment safer. With a *convenience population* in mind, the specific risk of the individual is not known. Further, the intended audience may vary in specificity from the total population to selected populations such as all incoming freshman or demographic groups known to have increased susceptibility to distress and/or suicidality (i.e. GLBT students, students with a history of prior attempts). For example, additional components could be added to

freshman orientation that would invite ethnic and sexual minorities to not only meet one another but also learn about various campus resources that may help to address issues related to power and privilege that the larger campus may not immediately address. Other examples include awareness building campaigns, or other academic or social programming such as stress management, relaxation strategies, academic support, etc. Drum and Burton Denmark (2011) state that proactive interventions require some degree of student readiness, attention, and interest. The authors also point out that several other institutional and campus-wide benefits may occur as a result of population-based prevention program, such as improved retention, learning outcomes, and emotional and physical health and safety.

Schwartz (2011) suggests that one strategy to prevent student suicide is to keep students on campus (in addition to keeping campuses free from fire-arms). Schwartz (2011) demonstrates that enhancing the appeal of a campus, as a place where students want to be and remain on weekends is a potential strategy to reduce student suicide. Further, he suggests the campus environment and the amount of connectedness a college campus can offer its students may play a role in maintaining the suicide-protective benefit students' experience (Schwarz, 2011).

In addition to the potential positive benefits of reducing college student distress and suicide, feeling connected to one's school and to others has been shown to reinforce positive academic and social factors for high school students and to prevent negative factors such as smoking, drinking, and dropping out (Monahan, Oesterie, & Hawkins, 2010). Research also suggests that when students feel connected to their school, they are

more likely to graduate and are less likely to engage in destructive or violent behaviors (Mohahen et al., 2010). These benefits may translate to the college population as well.

Tinto (1993) stresses the importance of institutions of higher education integrating students into the life of the school. He explains that students who are integrated into a college are less likely to drop out and are more likely to succeed in college. Tinto models his theory after Durkheim's (1897, 1951) theory of suicide, and the importance of social integration. Based on Tinto's theory, the decision to leave college is similar to Durkheim's explanation of the decision to leave society by committing suicide. Durkheim (1897, 1951) proposed that when people commit suicide, it is because they have not been fully integrated into society. Similarly, Tinto (1993) states that when students do not perform well academically or drop out of school, it is because they have not successfully been integrated into the college community.

Tinto's theory (1993) is useful in helping one consider that the positive relationship between academic performance and extracurricular involvement may be attributed to the sense of connection to the college and peers, provided by membership in student organizations. Perhaps emphasizing building connectedness on college campuses through population level interventions will not only help to increase connectedness, decrease distress and suicidal thinking, but will also aid in increasing academic performance and student retention.

Similarly, Watson (2007) suggests that a *wellness* approach is now more frequently associated on college and university campuses with programs designed to increase the health and wellbeing of the student population. Wellness is defined as a

"way of life oriented toward optimal health and wellbeing in which the mind, body, and sprit are integrated by the individual to live more fully" (Myers, Sweeney, & Witmer, 2000, p. 252)". This holistic focus, according to Myers (2000) is essential for addressing such institutional challenges as student retention and academic persistence. These population-based interventions teach students skills that not only help to relieve distress but also increase functioning and resiliency through interdisciplinary approaches like mindfulness, relaxation strategies, interpersonal relationship skills, and spirituality. Additionally, addressing the wellbeing and sense of connectedness amongst college students not only bolsters the mental and physical health, but also positively impacts both clinical and nonclinical students who do not seek help when it is needed. This is vital given past findings that the students who feel disconnected, distressed, and experience suicidal thoughts are often unseen and do not seek help (Burton Denmark, 2011; Drum et al., 2009).

Strengths, Limitations, and Future Directions

This exploratory study addresses many of the limitations of past research by utilizing self-report data from a national and non-clinical sample. This study contributes to the field by further examining connectedness, distress, and suicidal thinking. Specifically, the study sought to more fully understand how gender, sexual orientation, and membership in student activity groups are related to distress, suicidal thinking, and connectedness. The aim was to apply these findings to a population-based suicide prevention strategy on college campuses. The field (i.e. Drum et al., 2009; Joiner, 2006b; 2011; Watson, 2007) has embraced the current paradigm shift with the understanding that resources are limited

and implementing ecological interventions to address college student suicide, distress, and connectedness may not only save money and increase effectiveness but also uplift the wellbeing of all college students, regardless of being able to identify students who endorse risk factors. Further, connectedness has begun to enter into the larger conversation as a strategy to positively impact the college student populations, as it has been shown to lower distress, decrease the odds of suicidal thinking (Van Orden, 2008; 2010; Armstrong & Oomen-early, 2009; Baumeister & Leary, 1995; Lee et al., 2001; 2002), and potentially play a role with college student retentions (Tinto, 1993).

As with all research, several important limitations should be addressed. Due to the cross-sectional nature of the survey, causation cannot be determined. For example, membership in student groups may confer protection against suicidal thoughts, or, conversely, students who have suicidal thoughts may choose to not participate in campus organizations. Longitudinal and case-control studies may help identify potential cause-and-effect relationships between membership in student groups and risk of suicidal thoughts.

Also, the study employed self-report measures, which may expose data to several sources of bias. Distortion in responses may occur, either intentionally or unintentionally. Student respondents may have struggled to accurately recall their experiences, distress levels, and suicidal thoughts during a stressful period. Moreover, respondents may have altered their responses to provide more socially desirable answers. However, the benefits of understanding participants' own subjective experience of these variables, is unique and a strength in and of itself. Additionally, objective measures also have strengths and their

own limitations. While the current study was exploratory, future research could utilize a more established and validated Connectedness measure, such as The Interpersonal Needs Questionnaire (Van Orden et al., 2008) or the Sense of Community Index (Long & Perkins, 2003)

Additionally, using a large college student population creates limitations in regards to practical significance and generalizability. The sample size of 14,000 undergraduate students had benefits in that it allowed the study to draw from a large canvas of student experiences. However, the practical significance of the findings should be considered.

Additionally, while the student population is the group of interest for the current study, the results may not be generalizable to other age groups, people attending nontraditional institutions, community colleges, online universities, or those not enrolled in school. Thus, care should be taken in drawing conclusions from the protective benefit of connectedness on distress and suicidality in groups outside traditional colleges and universities. In terms of the selected college student sample, the alternate of limitations also bring about strengths. Very few studies have examined specifically college student connectedness and membership in student groups. Additionally, the college population is primed for intervention given that students are a somewhat captive audience and the college campus provides an ideal environment for population-based prevention efforts.

Another limitation is that a voluntary web-based survey may lack generalizability due to the potential for self-selection bias. The concept suggests that individuals who volunteer to participate in a survey may be systematically different in some way from the

larger population. Moreover, inferences should not be made about how connectedness operates for specific people experiencing suicidality or distress, as the data generated was aggregated. McIntosh (2002) explains this as an "ecological fallacy", meaning that individual members of a group have the average features of the larger group. Thus, clinicians and mental health experts should not assume that a client displaying high levels of connectedness is at no risk for developing high levels of distress or higher odds of suicidal thinking. Therefore, results from this study should be used to inform population-based interventions or add to the field's existing knowledge about the factors that may contribute to the protection of people at high risk for suicidal thinking.

Another area for improvement and a potential limitation for the current study is that only one question specifically asked about suicidal thoughts with the item, have you "seriously considered suicide in the past 12 months". While several other studies have also utilized this dichotomous item (ACHA-NCHA, 2011; Drum et al., 2009) it is limiting. Reynolds and Mazza (1994) caution that suicidal ideation must be viewed as a multifaceted construct that requires much more than a single item regarding whether or not young people have thought about killing themselves. The current study's use of the Distress Continuum (scale of 0-7) was one strategy to add more accuracy and depth to this multidimensional construct. Additionally, while the distress continuum item was an approach to add to the dichotomous suicidal thoughts question, future studies could include a multifaceted measure that can assess the complicated nature of suicidal thought and behaviors. Moreover, many factors are known to be connected to higher risk of suicidality that were not examined in the current study (i.e. hopelessness, depression,

eating disorders, self-criticism, among others). Thus, the current studies results should be considered exploratory, tentative, and calling for the need for additional research to be conducted in order to provide further empirical support for the significant findings that emerged.

Future studies could delve deeper into college student distress, suicidality, and connectedness. Research on connectedness has the opportunity to move beyond college populations and account for the role of race, socioeconomic class, and gender (Lee & Robbins, 2000). Future directions could also include examine the potential variance within sexual orientation, and the intersection gender and sexual orientation, as few studies have examined differences between Gay, Lesbian, Bisexual, Transgender students. Moreover, to the best of the author's knowledge, no studies have examined gender within these subgroups. Lastly, given the growing knowledge about the distress experienced in the GLBTQ adolescent/high school experience (Russell & Joyner, 2001), an important opportunity exists to follow these high-risk students in a longitudinal study, accounting for connectedness not just with peers but with families as well.

This study contributes to the extant literature in several ways. It represents an effort to gain a fuller understanding of the mechanisms related to reducing the risk of suicidality, distress, and increasing connectedness. The study attempted to shed light on how gender and sexual orientation are related to distress, suicidality, and feeling connected to others and the surrounding world. Additionally, the study intended to build a fuller understanding of how membership in student groups may give students access to building connectedness. Lastly, the study contributed to the conversation surrounding the

need for population-based interventions. The study discussed how ecological interventions may not only impact students at risk for suicidal thoughts and behaviors, but also improve the overall wellbeing of non-clinical students and the overall college student population. Moreover, the study incorporated other potential benefits of emphasizing connectedness within college population-based strategies, as it may positively impact student retention, academic performance, and physiological health. Lastly, this study is one of just a few investigations to go beyond examining only student athletes by incorporating nine other student membership groups and their relationship to connectedness, distress, and suicidal thinking. This knowledge may help inform population-based strategies as various campus stakeholders could carry more of a presence with organizations such as academic organizations, religious groups, and intramural/club sports, which were consistently related to lower levels of distress, lower odds of suicidal thinking, and higher levels of connectedness.

In closing, as Lamis and Lester (2011) suggest, university administrators are *in loco parentis*, thus legal responsibility is a major concern with college student suicide. Therefore, expanding and broadening campus suicide prevention efforts is of utmost importance for all campus stakeholders, as students interact with virtually all areas of campus during their collegiate experience, with a minor percentage coming into contact with the student mental health center. Students hold many roles, interact with different people, and become involved with many types of organizations throughout their time as a college student. Therefore, as stated above, students truly are a "captive audience". Thus, universities offer an ideal environment to implement population prevention programs

(Lamis & Lester, 2011).

The current study discovered that connectedness is a powerful factor in one's distress levels and suicidal thoughts. Findings surfaced with how gender relates to distress and connectedness, with females reporting higher levels of distress and lower levels of connectedness. Further, the GLBQ college population in the study endorsed significantly more distress, had higher odds of suicidal thoughts, and reported less connectedness than their heterosexual counterparts. Lastly, the study explored student membership in extra-curricular activities and discovered that these students reported fewer suicidal thoughts and were predictive of higher levels of connectedness. Moreover, some student organizations were related to lower distress, lower odds of suicidal thoughts, and higher connectedness. The field is learning more about college student distress, suicidality, and connectedness. We are at an exciting forefront of research, which is creating the possibility of generating population-based interventions that can positively impact current and future generations of college students.

Appendices

Appendix A: Survey Invitation, Consent Forms, and Local Resources Page

Note: This information was customized with contact information for the campus counseling center and each institution's local representative. The random sample received an e-mail addressed from their local campus counseling center or local campus sponsor that was customized with the institution's colors and logo.

Initial Invitation

FROM*: Local Representative* (*rep@ouremail.edu*)

REPLY-TO: *Local Representative* (*rep@ouremail.edu)*

SUBJECT: [SCHOOL NAME] Invites You to Participate in a National Study

Dear [STUDENT FIRST NAME],

You have been randomly selected to represent [SCHOOL NAME] in a national study of how students cope with stressful experiences. The results of this *anonymous* survey are vital because they will help [SCHOOL NAME] learn how to better support you, your friends, and your fellow [GRADUATE (if graduate student)] students.

Chances are that either you or someone you care about has struggled with very stressful experiences. Some students feel so overwhelmed that they may even consider hurting

themselves. Even if you have not personally experienced this type of situation, it is likely that someone close to you has. Your participation is essential and will contribute valuable insight into this extremely important topic.

Participation in this survey will qualify you for a random drawing for one of 100 gift certificates to Amazon.com (value = $50 each). Although your responses to the survey are anonymous – that is, there will be no way to link your responses back to your name or any other personally identifiable information about you – your participation in the survey will make you eligible for the drawing.

You may access the study online or learn more about it by following this link:

https://Study link.

If you have questions about the survey or have any difficulty accessing the survey online, please e-mail [LOCAL REPRESENTATIVE EMAIL] or call me at [LOCAL REPRESENTATIVE PHONE]. The study is sponsored and supported by the [DEPARTMENT/COUNSELING CENTER] at [SCHOOL NAME], and is being conducted by The University of Texas at Austin.

Because we are only inviting a small, random sample of our students to complete the survey, your responses are critical to make the results for our campus as accurate and meaningful as possible.

Thank you for your help with this important project.

Sincerely,

[Campus Representative signature line]

Cover Letter for Internet Research

You are invited to participate in a survey, entitled "Undergraduate and Graduate Student Coping with Stressful Experiences." The study is sponsored and supported by the [NAME OF DEPARTMENT/COUNSELING CENTER] at [SCHOOL NAME], and you can contact [COUNSELING CENTER DIRECTOR/CONTACT PERSON] at [EMAIL] or [PHONE] with any questions about this survey. You can also contact the National Director of this research project, Chris Brownson, Ph.D., Director of the Counseling & Mental Health Center at The University of Texas at Austin, at cbrownson@austin.utexas.edu or 512-475-6990, or by mail at 1 University Station, A3500, Austin, Texas 78712.

The purpose of this study is to examine ways that undergraduate and graduate students respond to stressful experiences. Your participation in the survey will contribute to a

better understanding of how colleges and universities can best support students during stressful times, particularly when students feel unable to cope and may have thoughts about hurting or killing themselves. Even if you have never had suicidal thoughts, chances are that some of your friends and classmates have had such thoughts. This survey includes questions about this important topic, and will ask about experiences you may have had with suicidal thoughts or behaviors. We estimate that it will take about 20 minutes of your time to complete the questionnaire. You are free to contact the investigator at the above address and phone number to discuss the survey.

This survey is entirely anonymous. Your actual survey responses are not linked to your name, and will never be associated with you or your personally identifiable information. If you consent to participate by clicking on the appropriate button at the bottom of this page, your survey will be assigned a random number to serve as the only identifier for our records. This random number will have no relation and no link to your name or any personally identifiable information about you. As a result, your responses cannot be linked to your identity, either during or after the survey itself.

Risks to participants are considered minimal. However, the survey may ask you to recall events that you are uncomfortable thinking about. For example, the survey includes questions about past stressful experiences and other difficult topics such as suicidal thoughts and attempts. If you become upset while answering the survey questions, you may wish to take a break the survey, or you may exit the survey permanently by clicking

on the link at the bottom of each page that reads “Click here to exit the Survey.” You may also call [NAME OF COUNSELING CENTER] at [XXX-XXXX] to discuss any distressing or discomforting feelings. You can also follow the link on the top of each page that will provide more information about local counseling resources. If you wish to discuss the information above or any other risks you may experience, you may contact the research study’s local representative, [LOCAL REPRESENTATIVE], at [LOCALCONTACT@campus.edu] or [XXX-XXXX], or contact the Principal Investigator, Chris Brownson, PhD, at cbrownson@mail.utexas.edu or 512-475-6990.

There will be no costs for participating, nor will you benefit from participating. Your participation in this survey is entirely voluntary. You may decline to answer any question and you have the right to withdraw from the study at any time without penalty. If you wish to withdraw from the study, you can do so by using the links provided within the survey, or you may contact the investigator listed above.

If you choose to participate in the survey, you will have the option to be entered into a random drawing to win one of 100 gift cards to Amazon.com in the amount of $50 each. Depending on how many of your peers choose to participate in the survey, the chances of winning one of these gift cards are estimated to be between 1 in 250 and 1 in 350. The record of your participation in the survey is stored entirely separately from your responses, which will always be anonymous. If you choose to enter the drawing and you are selected to win the prize, you will receive an email informing you that you have won

and providing you with the number for the electronic gift card.

If you have any questions or would like us to update your email address, please call Chris Brownson, Ph.D., Director of the Counseling & Mental Health Center at The University of Texas at Austin, at 512-475-6990, or send an email to cbrownson@austin.utexas.edu.

This study has been reviewed and approved by The University of Texas at Austin Institutional Review Board. If you would like to obtain information about the research study, have questions, concerns, complaints or wish to discuss problems about a research study with someone unaffiliated with the study, please contact the IRB Office at (512) 471-8871 or Jody Jensen, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects at (512) 232-2685. Anonymity, if desired, will be protected to the extent possible. As an alternative method of contact, an email may be sent to orsc@uts.cc.utexas.edu or a letter sent to IRB Administrator, P.O. Box 7426, Mail Code A 3200, Austin, TX 78713.

IRB Approval Number: **2010-07-0052**

If you agree to participate please click the button that says "Participate in the Survey" on the right side of the screen below. Otherwise, please click on the button that says "I do not want to participate" on the left side of the screen below.

Thank you very much for your time and consideration of this valuable study.

Logout Page and Referral to Local Mental Health Resources

Thank you for your participation!

[Note: The information below will also be displayed if students click on the information link within the survey, refuse to participate, or exit prematurely from the survey. This document is a template using the example of the University of Texas at Austin. The information for our campus will follow the same template but will provide different details].

You may wish to print out the information on this page for future reference.

This study is supported by the [COUNSELING CENTER NAME]. The [COUNSELING CENTER NAME] is available to you should you have any reactions to or questions about your responses to the survey items, or if you would like to talk about your current or past stressful experiences. Your contact with [COUNSELING CENTER NAME] is confidential and is not part of your academic record. We can be reached at [XXX-XXXX] during regular business hours, and for after hours assistance you can contact [XXX-XXXX].

You may also wish to use resources outside of your campus. Useful resources include:

[List of customized local resources]

Example:

Psychiatric Emergency Services:	454-3521
Seton Shoal Creek Hospital:	324-2000
Austin/Travis County Hotline for Help:	471-4357
EMS/Police/Fire:	911

National Suicide Prevention Lifeline: **1-800-273-TALK (8255)**

Call the free, 24-hour hotline available to anyone in suicidal crisis or emotional distress. Your call will be routed to the nearest crisis center to you.

- Call for yourself or someone you care about
- Free and confidential
- A network of more than 140 crisis centers nationwide
- Available 24/7

The following is some information about [COUNSELING CENTER NAME]:

[customized information] Telephone Counseling (471-CALL) – available 24 hours a day, every day of the year, including holidays. The counselors at the service are

specifically trained to deal with a variety of concerns relevant to university students. It is not uncommon for students to be struggling with issues such as anxiety, depression, family or relationship difficulties, academic pressures, or worries about the future. We will listen and talk with you about your concerns, explore feelings, help you make connections, discuss options and strategies, and, if needed or requested, refer you to appropriate counseling and mental health services on campus or in the community. We are also available for consultation on how to best help a friend or acquaintance who might be having a problem.

Individual Counseling – The Counseling Center has trained counselors, including psychologists, social workers, and psychiatrists available for one-on-one counseling sessions. Call 471-3515 to make an appointment for an initial consultation. At this Initial Consultation, which lasts about an hour, a counselor will talk with you to help you decide how best to deal with your concerns and what are the most appropriate services for your needs. Typically referrals will be made to one or more services provided by the Center, including individual counseling, group counseling, or our mind/body lab. In some cases, University and/or community agencies will be identified for outside referrals. For more information, see http://www.utexas.edu/student/cmhc.

Appendix B: Survey Codebook

Undergraduate and Graduate Student Coping with Stressful Experiences

Final Revision—May 2011

Conventions

Question Numbering

Q2, Q3_1, Q3_2...

Each distinct question is numbered sequentially in presentation order. Some questions invite responses on several points; these various points share the same question number, but have a sequential letter appended to differentiate them.

Open Text Numbering

Items with free text will follow a numbering convention in which the letter 'u' follows each open text item (e.g., Q03_8u)

Survey Content

"Please provide your age in years:" The text of each question as well as all potential responses are included in this codebook. Anything marked with quotes is taken verbatim from the survey.

Response Options

1 = "Yes" The response options for each question are indicated on the right side of each

row. In the case of questions with multiple data points, the response options presented apply to each point. When there are response options nested within categories within an item (e.g., Q41), the numbering convention will reflect this nesting characteristic (e.g., Q41_1_1 indicates that participant endorsed turning to an adviser about academic problems).

Missing Values

For the majority of questions, a missing value is indicated by a blank; this may be due to either the respondent skipping the question or a skip pattern. The one exception is multiple choice questions, in which a '0' indicates a particular option has not been selected.

Skip Patterns

[Q04 = 1]

Simple skip patterns, in which the availability of one or two questions is dependent on another close question, are indicated by an expression in brackets. Larger skip patterns, in which entire sections of questions are skipped, are indicated by separate rows labeled "Skip:" with explanations of the pattern.

Response ('cid')

A fully anonymous number that uniquely identifies the response. (string; always present)

School

A unique number which identifies the school of the respondent. (integer number; always present)

Q01 "Please provide your age in years:"

(dropdown menu [18 to 95]; blank = no response)

Q02 "How do you identify?" blank = no response or skipped

1 = "Female"

2 = "Male"

3 = "Transgender"

Q03 "With the understanding that these categories might be limiting, how do you typically

describe yourself? (Select all that apply)" blank = no response or skipped

1 = TRUE; 2 = FALSE

Q03_1= "African American, of African descent, African, of Caribbean descent, or Black"

Q03_2 = "Asian or Asian American (e.g., Chinese, Japanese, Korean)"

Q03_3 = "Caucasian, White, of European descent, or European (including Spanish)"

Q03_4 = "Hispanic, Latino or Latina (e.g., Cuban American, Mexican American, Puerto Rican"

Q03_5 = “Middle Eastern or East Indian (e.g., Pakistani, Iranian, Egyptian)”

Q03_6 = “Native American (e.g., Dakota, Cherokee) or Alaskan Native”

Q03_7 = “Native Hawaiian or other Pacific Islander (e.g., Samoan, Papuan, Tahitian)”

Q03_8 = Other, please specify:”

Q03_8u (no prompt; provided for “Other, please specify:” response to Q03_8) [Q03_8 = 1] (text; blank = no response or skipped)

Q04 “Are you an international student?”

blank = no response or skipped

1 = “Yes”

2 = “No”

Q05 “What is your country of origin?”

[Q04 = 1]

(text; blank = no response or skipped)

Q06 “What is your grade classification?”

blank = no response or skipped

1 = “Freshman”

2 = “Sophomore”

3 = “Junior”

4 = “Senior”

5 = “Medical Student”

6 = “Law Student”

7 = “Graduate Student or Other Professional Student”

8 = “Non-degree-seeking Student”

Q07 “How would you describe your sexual orientation?”

blank = no response or skipped

1 = “Bisexual”

2 = “Gay or Lesbian”

3 = “Heterosexual”

4 = “Questioning”

5 = “Other, please specify:”

Q07_5u (no prompt; provided for “Other, please specify:” response to Q07_5)

[Q07_5 = 1] (text; blank = no response or skipped)

Q08 “What is your current relationship status? (Select all that apply)”

blank = no response or skipped

Q08_1 = “I am single and not currently dating”

Q08_2 = “I am casually dating”

Q08_3 = “I am in a steady dating relationship”

Q08_4 = “I am partnered or married”

Q08_5 = “I am separated or divorced”

Q08_6 = “I am widowed”

Q09 “What is your living situation? (Select all that apply)”

blank = no response or skipped

Q09_1 = “By myself”

Q09_2 = “With parent(s) and / or family of origin”

Q09_3 = “With roommate(s)”

Q09_4 = “With romantic partner or spouse”

Q09_5 = “With children or dependents”

Q09_6 = “With pet(s)”

Q09_7 = “Sorority or fraternity house”

Q09_8 = “College or University Housing”

Q10 “What is your religious or spiritual preference? (Select all that apply)”

blank = no response or skipped

1 = TRUE; 2 = FALSE

Q10_1 = “None”

Q10_2 = “Agnostic”

Q10_3 = “Atheist”

Q10_4 = “Buddhist”

Q10_5 = “Christian”

Q10_6 = “Catholic” [Q10_5 = 1]

Q10_7 = “LDS” [Q10_5 = 1]

Q10_8 = “Protestant” [Q10_5 = 1]

Q10_9 = “Hindu”

Q10_10 = “Jewish”

Q10_11 = “Muslim”

Q10_12 = “Native American Religion”

Q10_13 = “Unitarian or Universalist”

Q10_14 = “Other, please specify:”

Q10_14u (no prompt; provided for “Other, please specify:” response to Q10_14)

[Q10_14 = 1] (text; blank = no response or skipped)

Q11 “How important are your religious or spiritual beliefs to your personal identity?”

blank = no response or skipped

1 = “Not at all important”

2

3 = “Moderately important”

4

5 = “Very important”

Q12 “To what degree have you questioned or changed your religious or spiritual beliefs over the past year?”

blank = no response or skipped

1 = “Significantly less sure of my beliefs”

2

3 = “No change in my beliefs”

4

5 = “Significantly more sure of my beliefs”

Q13 “What is the highest level of education completed by your parent(s) or significant caregiver(s)?”

blank = no response or skipped

1 = “Did not complete high school”

2 = “Finished high school or high school equivalent”

3 = “Some college”

4 = “Associate’s degree or technical training certificate”

5 = “Finished college”

6 = “Some graduate or professional school after college”

7 = “Finished graduate or professional school (e.g., masters or doctoral degree)

8 = “Not sure”

Q14 "From which of the following have you ever received counseling or mental health services? (Select all that apply)" blank = no response or skipped

1 = TRUE; 2 = FALSE

Q14_1 = "Counselor, therapist, psychologist, and / or social worker"

Q14_2 = "Psychiatrist"

Q14_3 = "Clergy"

Q14_4 = "Other medical provider (e.g., physician, nurse practitioner)"

Q14_5 = "Alternative medical provider (e.g., acupuncturist, naturopathic doctor, massage therapist)"

Q14_6 = "Other, please specify:"

Q14_7 = "I have never received counseling or mental health services

Q14_6u (no prompt; provided for "Other, please specify:" response to Q14_6)

[Q14_6 = 1] (text; blank = no response or skipped)

Q15 "Have you ever received counseling or psychiatric services from your college or university counseling center?"

blank = no response or skipped

1 = "Yes"

2 = "No"

Q16 “Have you ever taken medication for mental health concerns?”

blank = no response or skipped

1 = “Yes”

2 = “No”

Q17 “Have you ever been hospitalized for mental health concerns?”

blank = no response or skipped

1 = “Yes”

2 = “No”

Q18 “Have you served in the military?”

blank = no response or skipped

1 = “Yes”

2 = “No” Skip: respondents who answered “No” to Q18 skip Q23 – Q26.

Section Intro “In this next section of the survey, we are interested in learning about challenging or upsetting experiences you may have had during your lifetime.”

Q19 “Overall, how stable was your family environment while growing up? (e.g., frequent moves, financial stresses, excessive fighting)?” blank = no response or skipped

1 = “Not stable at all”

2

3 = “Moderately stable”

4

5 = “Very stable”

Q20 “Please characterize your lifetime medical history (e.g., serious illnesses, hospitalizations, chronic medical conditions).” blank = no response or skipped

1 = “No medical problems”

2

3 = “Moderate medical problems”

4

5 = “Substantial medical problems”

Q21 “Please characterize your lifetime history of mental health concerns (e.g., depression, anxiety).”

blank = no response or skipped

1 = “No mental health concerns”

2

3 = “Moderate mental health concerns”

4

5 = “Substantial mental health concerns”

Q22 “In your lifetime, have you been a victim of abuse or violence (e.g., sexual abuse,

physical abuse, emotional abuse, assault)?"

blank = no response or skipped

1 = "Yes"

2 = "No"

Q23 "Did you ever serve in a war zone?"

blank = no response or skipped

[Q18 = 1]

1 = "Yes"

2 = "No"

Q24 "Have you been deployed more than once?"

blank = no response or skipped

[Q23 = 1]

1 = "Yes"

2 = "No"

Q25 "Where were you deployed? (Select all that apply)

blank = no response or skipped

[Q23 = 1]

1 = TRUE; 2 = FALSE

Q25_1 = “Afghanistan”

Q25_2 = “Iraq”

Q25_3 = “Other, please specify:”

Q25_3u (no prompt; provided for “Other, please specify:” response to Q25_3)

[Q25_3 = 1] (text; blank = no response or skipped)

Q26 “To what extent were you exposed to traumatic events while in military service?”

[Q18 = 1] blank = no response or skipped

1 = “No trauma”

2

3 = “Moderate trauma”

4

5 = “Substantial trauma”

Q27 “Have you ever seriously considered attempting suicide at some point in your life?”

[Q26 = 1] blank = no response or skipped

1 = “Yes”

2 = “No”

Q28 “When did you first seriously consider attempting suicide?”

[Q27 = 1] blank = no response or skipped

1 = “Before or while in middle school”

2 = “While in high school”

3 = “After high school but before college”

4 = “While in college”

5 = “After college and before graduate school”

6 = “While in graduate school”

7 = “Other, please specify:”

Q28_7u (no prompt; provided for “Other, please specify:” response to Q28_7) [Q28_7 = 1] (text; blank = no response or skipped)

Q29 “During the past 12 months, have you seriously considered attempting suicide?”

blank = no response of skipped

1 = “Yes”

2 = “No”

Q30 “How many times in your life have you attempted suicide?” blank = no response or skipped

0 = “0”

1 = “1”

2 = “2”

3 = “3”

4 = “4”

5 = “5 or more

Q30a “For how many of your attempts did you receive emergency medical attention?”

[Q30 = 1, 2, 3, 4, or 5 or more]

(pop out for Q30; blank = no response or skipped)

0 = “none”

1 = “1”

2 = “2”

3 = “3”

4 = “4”

5 = “5 or more”

Q31 “How many of those attempts occurred in the past 12 months?”

[Q30 = 1, 2, 3, 4, or 5 or more]

0 = “0”

1 = “1”

2 = “2”

3 = “3”

4 = “4”

5 = “5 or more”

Q31a"For how many of your attempts did you receive emergency medical attention?"

blank = no response or skipped

[Q31 = 1, 2, 3, 4, or 5 or more]

(pop out for Q31; blank = no response or skipped)

0 = "none"

1 = "1"

2 = "2"

3 = "3"

4 = "4"

5 = "5 or more"

Q32 "During your lifetime, how would you describe the relative severity of your suicide attempts?" blank = no response or skipped [Q30 = 2, 3, 4, or 5 or more]

1 = "All of the attempts were equally life-threatening"

2 = "The more I attempted the more life-threatening they became"

3 = "The more I attempted the less life-threatening they became"

4 = "Some attempts were more life-threatening than others, but there was no real pattern"

Section Intro "People generally develop consistent ways of viewing themselves and others throughout their lives. When answering these questions, please consider how you generally think and feel."

Q33 “When approaching the challenges of daily life:”

Q33a “How critical are you of yourself?”

blank = no response or skipped

1 = “Not at all critical”

2

3 = “Moderately critical”

4

5 = “Very critical”

Q33b “How capable are you of managing your daily challenges?”

blank = no response or skipped

1 = “Not at all capable”

2

3 = “Moderately capable”

4

5 = “Very capable”

Q33c “How motivated are you to manage your daily challenges?”

blank = no response or skipped

1 = “Not at all motivated”

2

3 = “Moderately motivated”

4

5 = “Very motivated”

Q33d “How meaningful do you view your life to be?”

blank = no response or skipped

1 = “Not at all meaningful”

2

3 = “Moderately meaningful”

4

5 = “Very meaningful”

Q33e “To what extent are you able to understand what must be done to face the challenges of daily life?”

blank = no response or skipped

1 = “Not at all able to understand”

2

3 = “Moderately able to understand”

4

5 = “Very able to understand”

Q34 “People have a variety of ways of relating to their thoughts and feelings. Please rate

how

much each of these ways generally applies to you:”

blank = no response or skipped

1 = “Rarely or not at all”

2 = “Sometimes”

3 = “Often”

4 = “Almost always”

Q34_1 = “It is easy for me to concentrate on what I am doing.”

Q34_2 = “I can tolerate emotional pain.”

Q34_3 = “I can accept things I cannot change.”

Q34_4 = “I can usually describe how I feel at the moment in considerable detail.”

Q34_5 = “I am easily distracted.”

Q34_6 = “It’s easy for me to keep track of my thoughts and feelings.”

Q34_7 = “I try to notice my thoughts without judging them.”

Q34_8 = “I am able to accept the thoughts and feelings I have.”

Q34_9 = “I am able to focus on the present moment.”

Q34_10 = “I am able to pay close attention to one thing for a long period of time.”

Q35 “When approaching the challenges of daily life:”

Q35a “How much do you feel you are a burden on others?” blank = no response or

skipped

1 = “Not at all a burden”

2

3 = “Moderately a burden”

4

5 = “Very much a burden”

Q35b “How understood by others do you feel?” blank = no response or skipped

1 = “Not at all understood”

2

3 = “Moderately understood”

4

5 = “Very much understood”

Q35c “How cared for by others do you feel?”

blank = no response or skipped

1 = “Not at all cared for”

2

3 = “Moderately cared for”

4

5 = “Very much cared for”

Q35d “How much do you feel that you can count on others?”

blank = no response or skipped

1 = “Not at all able to count on others”

2

3 = “Moderately able to count on others”

4

5 = “Very much able to count on others”

Q35e “How comfortable do you feel making new connections with others?”

blank = no response or skipped

1 = “Not at all comfortable”

2

3 = “Moderately comfortable”

4

5 = “Very comfortable”

Section Intro “In this section we would like to better understand the activities and connections that are important in your life.”

Q36_#yn “Of the following activities, in which do you actively participate as either a member or in a leadership role?” blank = no response or skipped

1 = “Member”

2 = “Leadership”

3 = “Not involved”

Q36_1yn = “Academic or Professional Organizations”

Q36_2yn = “Arts organizations (e.g. music, drama, dance, fine arts)”

Q36_3yn = “Fraternity or sorority”

Q36_4yn = “Informal group with shared interests (e.g. exercise, entertainment, food, drink)”

Q36_5yn = “International, ethnic or cultural organizations”

Q36_6yn = “Intramural or club sports”

Q36_7yn = “Paid employment”

Q36_8yn = “Political, social-action or student government organizations”

Q36_9yn = “Religious organizations”

Q36_10yn = “Service or social organizations (other than fraternity or sorority)”

Q36_11yn = “Varsity athletic teams”

Q36_1 “How important is this activity or group as a social network in your life?

[Q36_(1-11)yn = 1 or 2]

(pop out for Q36_#yn; blank = no response or skipped)

1 = “Not at all important”

2

3 = “Moderately important”

4

5 = “Very important”

Q36_1 = “Academic or Professional Organizations”

Q36_2 = “Arts organizations (e.g. music, drama, dance, fine arts)”

Q36_3 = “Fraternity or sorority”

Q36_4 = “Informal group with shared interests (e.g. exercise, entertainment, food, drink)” Q36_5 = “International, ethnic or cultural organizations”

Q36_6 = “Intramural or club sports”

Q36_7 = “Paid employment”

Q36_8 = “Political, social-action or student government organizations”

Q36_9 = “Religious organizations”

Q36_10 = “Service or social organizations (other than fraternity or sorority)”

Q36_11 = “Varsity athletic teams”

Q37 “On average, how much time per week do you spend (collectively) participating in these organization(s)?” blank = no response or skipped [Q36_(1-11)yn = 1 or 2]

1 = “5 or less hrs/week”

2 = “6 - 10 hrs/week”

3 = “11 - 15 hrs /week”

4 = “16 - 20 hrs/week”

5 = “21 – 25 hrs/week”

6 = “26 – 30 hrs/week”

7 = “More than 30 hrs/week”

Q38 “How important is the following in staying connected with others?”

blank = no response or skipped

1 = “Not at all important”

2

3 = “Moderately important”

4

5 = “Very important”

1. “Blogging”

2. “Email”

3. “In person contact”

4. “Gaming connections”

5. “Phone”

6. “Social networking (e.g., Facebook, Twitter)”

7. “Text message”

8. “Videochat”

9. “Other, please specify:” (text)

Q38_9u (no prompt; provided for “Other, please specify:” response to Q38_9) [Q38_9 = 1] (text; blank = no response or skipped)

Q39 “Do you consider your relationship with people you spend most of your time with to

be:" blank = no response or skipped

1 = "Not at all close"

2

3 = "Moderately close"

4

5 = "Very close"

Q40 "On average, how close is your relationship with your family?"

blank = no response or skipped

1 = "Not at all close"

2

3 = "Moderately close"

4

5 = "Very close"

Q41_#_# "When the following problems arise, who do you turn to? (Select all that apply)"

1 = TRUE; 2 = FALSE

Q41_1 = "Academic problems"

Q41_2 = "Emotional problems (e.g. feeling sad, anxious)"

Q41_3 = "Financial problems"

Q41_4 = “Health problems (e.g. illness, nutrition, fitness)”

Q41_5 = “Life issues (e.g. identity struggles, career choices, life purpose)”

Q41_6 = “Relationship problems (e.g. romantic, friend, and family)”

blank = no response or skipped

1 = “Adviser (e.g., academic adviser, resident adviser)”

2 = “Friend or roommate”

3 = “Instructor (e.g., professor, teaching assistant, coach)”

4 = “Parent or family member”

5 = “Romantic partner”

6 = “Professional (e.g., physician, counselor, clergy)”

7 = “I would not seek help from these sources for this problem”

Q42 “To what degree do you feel connected to your college or university?”

blank = no response or skipped

1 = “Not at all connected”

2

3 = “Moderately connected”

4

5 = “Very connected”

Q43 “To what degree does the financial support you receive from all sources (including

scholarship, employment income, financial aid, parent or family support) meet your needs?" blank = no response or skipped

1 = "Does not meet my needs at all"

2

3 = "Meets my needs moderately well"

4

5 = "Meets all of my needs"

Section Intro "Please reflect on the most stressful period of time that you have experienced in the past 12 months, including the present day. While it may be difficult to choose just one time, please think back on your experiences over the past 12 months and identify a single period when you were most upset, distressed or overwhelmed."

Q44 "In which month did this most stressful period begin?" blank = no response or skipped

NOTE: this was programmed so that the preceding 12 months was adjusted to end with the

month in which student was participating in the survey

"February, 2010"

"March, 2010"

“April, 2010”

“May, 2010”

“June, 2010”

“July, 2010”

“August, 2010”

“September, 2010”

“October, 2010”

“November, 2010”

“December, 2010”

“January, 2011”

“February, 2011”

“March, 2011”

“April, 2011”

Q45 “Are you currently in the stressful period?” blank = no response or skipped

1 = “Yes”

2 = “No”

Q46 “For how long did this most stressful period last or how long has it lasted?” blank = no response or skipped

1 = “A day or less”

2 = “More than a day to one week”

3 = “More than a week to one month”

4 = “More than one month to three months”

5 = “More than three months to six months”

6 = “More than 6 months”

Q47u“Please briefly describe this stressful period. Recall the context of the experience (i.e., what was occurring, where you were, how you were feeling). Provide only as much detail as you feel comfortable sharing.”

(text; blank = no response or skipped)

Q48 “Of the following categories, which best describe the contributors to this stressful period? (Select all that apply)” blank = no response or skipped

1 = TRUE; 2 = FALSE

Q48_1 = “Academics”

Q48_2 = “Death of a close family member or friend (excluding suicide)”

Q48_3 = “Discrimination”

Q48_4 = “Drug or alcohol overuse or addiction”

Q48_5 = “Family problems”

Q48_6 = “Financial problems”

Q48_7 = “Friendship problems”

Q48_8 = “Gender identity concerns”

Q48_9 = “Legal trouble or violation of the law”

Q48_10 = “Life transition (e.g. changing jobs, switching schools, new care-taking responsibilities)”

Q48_11 = “Emotional health problems”

Q48_12 = “Physical health problems”

Q48_13 = “Problems at work”

Q48_14 = “Problems experienced by close friend or family member”

Q48_15 = “Relationship violence”

Q48_16 = “Romantic relationship problems”

Q48_17 = “Sexual assault”

Q48_18 = “Sexual orientation concerns”

Q48_19 = “Suicide of a close family member or friend”

Q48_20 = “Other traumatic experience (e.g. car accident, natural disaster)”

Q48_21 = “Other, please specify:”

Q48_21u (no prompt; provided for “Other, please specify:” response to Q48_21)

[Q48_21 = 1] (text; blank = no response or skipped)

Q49 “To what extent did this contribute to your level of stress or feelings of distress”?

blank = no response or skipped

[Q48_(1 – 21)]

1 = “Not at all”

2

3 = “Moderately”

4

5 = “Very much”

Q49_1 = “Academics”

Q49_2 = “Death of a close family member or friend (excluding suicide)”

Q49_3 = “Discrimination”

Q49_4 = “Drug or alcohol overuse or addiction”

Q49_5 = “Family problems”

Q49_6 = “Financial problems”

Q49_7 = “Friendship problems”

Q49_8 = “Gender identity concerns”

Q49_9 = “Legal trouble or violation of the law”

Q49_10 = “Life transition (e.g. changing jobs, switching schools, new care-taking responsibilities)”

Q49_11 = “Emotional health problems”

Q49_12 = “Physical health problems”

Q49_13 = “Problems at work”

Q49_14 = “Problems experienced by close friend or family member”

Q49_15 = “Relationship violence”

Q49_16 = “Romantic relationship problems”

Q49_17 = “Sexual assault”

Q49_18 = “Sexual orientation concerns”

Q49_19 = “Suicide of a close family member or friend”

Q49_20 = “Other traumatic experience (e.g. car accident, natural disaster)”

Q49_21 = “Other, please specify:”

Q49_21u (no prompt; provided for “Other, please specify:” response to Q49_21)

[Q49_21 = 1] (text; blank = no response or skipped)

Q50 “Which of the following behaviors or attitudes did you use to try to manage this stressful period? (Select all that apply)”

blank = no response or skipped

1 = TRUE; 2 = FALSE

Q50_1 = “Acknowledging and allowing myself to feel my emotions”

Q50_2 = “Creating a strategy or plan of action”

Q50_3 = “Distracting myself with work, school, or leisure activities”

Q50_4 = “Eating healthy”

Q50_5 = “Exercising”

Q50_6 = “Focusing on a positive aspect of the situation or a lesson learned”

Q50_7 = “Prayer, meditation, or spirituality”

Q50_8 = “Sleeping”

Q50_9 = “Suppressing or avoiding my emotions”

Q50_10 = “Other, please specify:”

Q50_10u (no prompt; provided for “Other, please specify:” response to Q50_10)

[Q50_10 = 1] (text; blank = no response or skipped)

Q51 “How helpful did you perceive this method of managing stress to be for you?” blank = no response or skipped [Q50 = 1 – 10]

1 = “Not at all”

2

3 = “Moderately”

4

5 = “Very much”

Q51_1 = “Acknowledging and allowing myself to feel my emotions”

Q51_2 = “Creating a strategy or plan of action”

Q51_3 = “Distracting myself with work, school, or leisure activities”

Q51_4 = “Eating healthy”

Q51_5 = “Exercising”

Q51_6 = “Focusing on a positive aspect of the situation or a lesson learned”

Q51_7 = “Prayer, meditation, or spirituality”

Q51_8 = “Sleeping”

Q51_9 = “Suppressing or avoiding my emotions”

Q51_10 = “Other, please specify:”

Q52 “From whom did you seek help or support in dealing with this stressful period? (Select all that apply)” blank = no response or skipped 1 = TRUE; 2 = FALSE

Q52_1 = “Academic Adviser”

Q52_2 = “Clergy”

Q52_3 = “Coach”

Q52_4 = “Family member”

Q52_5 = “Friend, peer, or roommate”

Q52_6 = “Alternative medical provider (e.g., acupuncturist, naturopathic doctor, massage therapist)”

Q52_7 = “Instructor (e.g., professor, teaching assistant)”

Q52_8 = “Medical provider (e.g., doctor, nurse practitioner)”

Q52_9 = “Psychiatrist”

Q52_10 = “Psychologist, counselor, or social worker”

Q52_11 = “Resident Adviser”

Q52_12 = “Romantic partner”

Q52_13 = “Other, please specify:”

Q52_14 = “I did not seek help from anyone”

Q52_13u (no prompt; provided for “Other, please specify:” response to Q52_13)

[Q52_13 = 1] (text; blank = no response or skipped)

Q53 “Which factors influenced your decision to seek help from this person or these people? (Select all that apply)” blank = no response or skipped [Q52 = 1 -13; skip if Q52 = 14 or blank]

1 = TRUE; 2 = FALSE

Q53_1 = “They had expertise in this area”

Q53_2 = “I thought they would empathize or listen to me”

Q53_3 = “They had gone through this experience before”

Q53_4 = “I was referred to them”

Q53_5 = “I didn't know where else to turn”

Q53_6 = “They appeared safe to confide in”

Q53_7 = “I had received help from them before”

Q53_8 = “They were easily accessible”

Q53_9 = “Other, please specify:”

Q53_9u (no prompt; provided for “Other, please specify:” response to Q53_9) [Q53_9 = 1] (text; blank = no response or skipped)

Q54 “Did you see this person or these people on-campus? (i.e., were they affiliated with your college or university?)”

blank = no response or skipped

[Q52 = 2, 6, 8, 9, or 10]

1 = “Yes”

2 = “No”

Q54_2 = “Clergy”

Q54_6 = “Alternative medical provider (e.g., acupuncturist, naturopathic doctor, massage therapist)”

Q54_8 = “Medical provider (e.g., doctor, nurse practitioner)”

Q54_9 = “Psychiatrist”

Q54_10 = “Psychologist, counselor, or social worker”

Q55 “Why did you choose not to seek help or support from anyone during this stressful period? (Select all that apply)” blank = no response or skipped

[Q52 = 14]

1 = TRUE; 2 = FALSE

Q55_1 = “I did not think that it would be helpful to talk to anybody about it”

Q55_2 = “I did not think I needed support or help”

Q55_3 = “I did not want anyone to interfere or try to help”

Q55_4 = “I typically do not share my personal concerns with other people”

Q55_5 = “I did not want to burden other people”

Q55_6 = “I felt ashamed or embarrassed”

Q55_7 = “I was worried that they would judge me or think of me differently”

Q55_8 = “I did not feel like there was anyone I could talk to”

Q55_9 = “I thought there could be negative consequences for seeking help (e.g., being forced into treatment, losing my job, academic setbacks)”

Q55_10 = “I have had a prior negative experience seeking help or support”

Q55_11 = “Other, please specify:”

Q55_11u (no prompt; provided for “Other, please specify:” response to Q55_11)

[Q55_11 = 1] (text; blank = no response or skipped)

Q56 “Why did you choose not to seek professional help during this stressful period? (Select all that apply)” blank = no response or skipped

[Q52 = 1, 3 - 5, 7, 11 - 14; skip if Q52 = 2, 6, 8, 9 or 10]

1 = TRUE; 2 = FALSE

Q56_1 = “It did not occur to me to seek professional help”

Q56_2 = “I did not feel a need for professional help”

Q56_3 = “I did not know how to access professional help”

Q56_4 = “I did not think that I could afford professional help”

Q56_5 = “Seeking professional help is not acceptable in my family or my family’s culture” Q56_6 = “Seeking professional help is not acceptable in my peer culture or

friend group”

Q56_7 = “I was afraid my culture or background would not be understood”

Q56_8 = “I did not think that professional help would be useful”

Q56_9 = “I was worried about the potential consequences of seeking professional help on my future academic and career opportunities”

Q56_10 = “I did not think professional help was available”

Q56_11 = “I thought it would take too long to be seen by a professional”

Q56_12 = “I have had a prior negative experience seeking professional help or support”

Q56_13 = “Other, please specify:”

Q56_13u (no prompt; provided for “Other, please specify:” response to Q56_13) [Q56_13 = 1] (text; blank = no response or skipped)

Q57 “How important was the following in helping you to reach out for support during this stressful time?” blank = no response or skipped

1 = “Not at all important”

2

3 = “Moderately important”

4

5 = “Very important”

Q57_1 = “Blogging”

Q57_2 = “Email”

Q57_3 = “In person contact”

Q57_4 = “Gaming connections”

Q57_5 = “Phone”

Q57_6 = “Social networking (e.g., Facebook, Twitter)”

Q57_7 = “Text message”

Q57_8 = “Videochat”

Q57_9 = “Other, please specify:”

Q57_9u (no prompt; provided for “Other, please specify:” response to Q57_9)

[Q57_9 = 1] (text; blank = no response or skipped)

Section Intro “Now please focus on the "worst point" (when you were experiencing the most intense distress) during the stressful period that you’ve been focusing on.”

Q58u “Please briefly describe this worst point.” (text; blank = no response or skipped)

Q59 “At the worst point during this stressful period, how would you rate the following:”

Q59a “How emotionally distressed were you?”

blank = no response or skipped

1 = “Not at all distressed”

2

3 = “Moderately distressed”

4

5 = “Very distressed”

Q59b “How disrupted were you in your day-to-day functioning?”

blank = no response or skipped

1 = “Not at all disrupted”

2

3 = “Moderately disrupted”

4

5 = “Very disrupted”

Q60 “At the worst point during this stressful period, how did your social behaviors change?” blank = no response or skipped

1 = “I spent a lot less time socializing”

2

3 = “No change”

4

5 = “I spent a lot more time socializing”

Q61 “At the worst point during this stressful time, when approaching the challenges you

were facing:"

Q61a "How critical were you of yourself?"

blank = no response or skipped

1 = "Not at all critical"

2

3 = "Moderately critical"

4

5 = "Very critical"

Q61b "How capable were you of managing these challenges?"

blank = no response or skipped

1 = "Not at all capable"

2

3 = "Moderately capable"

4

5 = "Very capable"

Q61c "How motivated were you to manage these challenges?"

blank = no response or skipped

1 = "Not at all motivated"

2

3 = “Moderately motivated”

4

5 = “Very motivated”

Q61d “How meaningful did you view your life to be?”

blank = no response or skipped

1 = “Not at all meaningful”

2

3 = “Moderately meaningful”

4

5 = “Very meaningful”

Q61e “To what extent were you able to understand what needed to be done to face these challenges?”

blank = no response or skipped

1 = “Not at all able to understand”

2

3 = “Moderately able to understand”

4

5 = “Very able to understand”

Q61f “How much did you feel you were a burden on others?”

blank = no response or skipped

1 = “Not at all a burden”

2

3 = “Moderately a burden”

4

5 = “Very much a burden”

Q61g “How understood by others did you feel?”

blank = no response or skipped

1 = “Not at all understood”

2

3 = “Moderately understood”

4

5 = “Very understood”

Q61h “How cared for by others did you feel?”

blank = no response

1 = “Not at all cared for”

2

3 = “Moderately cared for”

4

5 = “Very cared for”

Q61i "How much did you feel that you could count on others?"

blank = no response or skipped

1 = "Not at all able to count on others"

2

3 = "Moderately able to count on others"

4

5 = "Very much able to count on others"

Q61j "How comfortable did you feel making new connections with others?"

blank = no response or skipped

1 = "Not at all comfortable"

2

3 = "Moderately comfortable"

4

5 = "Very comfortable"

Section Intro "In this section we hope to learn more about what you may have experienced during the stressful period that you identified."

Q62 "During the stressful period, did you engage in any of the following behaviors? (Select all that apply)"

blank = no response or skipped

1 = TRUE; 2 = FALSE

Q62_1 = “Getting into fights”

Q62_2 = “Increased gambling”

Q62_3 = “Increased internet use or gaming”

Q62_4 = “Increased use of drugs or alcohol”

Q62_5 = “Risk-taking behavior (e.g., drunk driving, speeding)”

Q62_6 = “Risky sexual behavior (e.g., unprotected sex with an untested partner, sexual contact with strangers or while intoxicated)”

Q62_7 = “Severely restricted or excessive eating”

Q62_8 = “Self-injury (e.g., intentional cutting, burning)”

Q62_9 = “Significant drop in academic performance”

Q62_10 = “Violating the law or violating school policies”

Q62_11 = “None of the above”

Q63 “During the stressful period, did you have any thoughts similar to the following? (Select all that apply)”

blank = no response or skipped

1 = TRUE; 2 = FALSE

Q63_1 = "This is all just too much"

Q63_2 = "I wish this would all end"

Q63_3 = "I have to escape"

Q63_4 = "I wish I was dead"

Q63_5 = "I want to kill myself"

Q63_6 = "I might kill myself"

Q63_7 = "I will kill myself"

Q63_8 = I did not have any thoughts like these

Q64 "During this stressful period, did you seriously consider attempting suicide?" blank = no response or skipped

1 = "Yes"

2 = "No"

Q65 "When these thoughts were at their most intense, how strong was your intent to kill yourself?"

blank = no response or skipped [Q64 = 1]

1 = "Not at all strong"

2

3 = "Moderately strong"

4

5 = “Very strong”

Q66 “During this stressful period, did you do any of the following? (Select all that apply)”

Blank = no response or skipped

[Q64 = 1]

1 = TRUE; 2 = FALSE

Q66_1 = “Investigated ways to kill myself”

Q66_2 = “Formed a specific plan for attempting suicide”

Q66_3 = “Gathered the material for a suicide attempt”

Q66_4 = “Wrote a suicide note but did not post it or leave it where others might read it”

Q66_5 = “Wrote a suicide note and shared it or posted it”

Q66_6 = “Wrote a will or otherwise put my affairs in order”

Q66_7 = “Formed a suicide pact with others”

Q66_8 = “Did a practice run of a suicide attempt” 97

Q66_9 = “Began a suicide attempt, then changed my mind”

Q66_10 = “None of the above”

Q67 “During this stressful period, did you attempt suicide?”

blank = no response or skipped

1 = “Yes”

2 = “No

Q68 “How many attempts did you make during this time?”

blank = no response or skipped

[Q67 = 1]

1 = “1”

2 = “2”

3 = “3”

4 = “4”

5 = “5 or more”

Q68a“For how many of your attempts did you receive emergency medical attention?”

[Q68 = 1, 2, 3, 4, or 5 or more]

(pop out for Q68; blank = no response or skipped)

0 = “none”

1 = “1”

2 = “2”

3 = “3”

4 = “4”

5 = “5 or more”

Q69 “Which of these statements describe your intentions at the time of the attempt(s)?”

[Q67 = 1] blank = no response or skipped

1 = “I made a serious attempt to kill myself and I intended to die”

2 = “I tried to kill myself but knew that I might survive using the method I chose”

3 = “I was ambivalent and partly wanted to die but also partly wanted to live”

4 = “I mostly wanted to live but a small part of me wanted to die”

5 = “I did not intend to die”

Q70u “How do you feel now about surviving the attempt(s)?”

(text; blank = no response or skipped)

[Q67 = 1]

Q71 “Which of the following best describe your reasons for attempting suicide? (Select all that apply)”

blank = no response or skipped [Q67 = 1]

1 = TRUE; 2 = FALSE

Q71_1 = “It was impulsive and not really a choice”

Q71_2 = “I wanted others to pay attention and take me seriously”

Q71_3 = “I wanted to make others feel guilty or sorry”

Q71_4 = “I wanted to show others the extent of my pain or unhappiness”

Q71_5 = “I wanted to get help”

Q71_6 = “My emotional pain became unbearable”

Q71_7 = “I did not know what else to do”

Q71_8 = “I had nothing else to live for”

Q71_9 = “I felt like I was a burden on people around me”

Q71_10 = “Other, please specify:”

Q71_10u (no prompt; provided for “Other, please specify:” response to Q71_10)

[Q71_10 = 1] (text; blank = no response or skipped)

Q72 “How would you describe the role of drugs or alcohol in your most recent suicide attempt? (Select all that apply)”

blank = no response or skipped [Q67 = 1]

1 = TRUE; 2 = FALSE

Q72_1 = “I was not using alcohol or drugs before or during my attempt”

Q72_2 = “I intended to overdose with alcohol or drugs”

Q72_3 = “I intended to use alcohol or drugs to reduce my inhibitions or fears about attempting suicide”

Q72_4 = “My attempt was not planned in advance and may have happened because I was using alcohol or drugs”

Q72_5 = “I was using alcohol or drugs but they were not related to my attempt”

Q72_6 = “Addiction to alcohol or drugs was a reason for my attempt”

Q73 “How would you describe your current thoughts about suicide?” [Q29 = 1]

blank = no response or skipped

1 = “I am no longer considering suicide and I doubt that I will ever again”

2 = “I am no longer considering suicide but I might in the future”

3 = “I am still considering suicide, but not very seriously”

4 = “I am currently seriously considering a suicide attempt”

Section Intro “In this final, very brief section of the survey we hope to learn about what was helpful or could have been helpful in increasing your ability to manage during your most stressful time.”

Q74 “From the list below, please indicate how the following impacted your ability to cope during the most stressful time?”

blank = no response or skipped

1 = “Considerably reduced my ability to cope”

2

3 = “Did not impact my ability to cope”

4

5 = “Considerably improved my ability to cope”

Q74_1 = “Connection with your friends”

Q74_2 = “Connection with your family”

Q74_3 = “Connection to religion, spirituality or a higher power”

Q74_4 = “Connection with your college or university”

Q74_5 = “Connection with a mental health professional”

Q74_6 = “Having experienced a similar situation before”

Q74_7 = “Involvement in extracurricular groups, activities, or communities”

Q74_8 = “Resources available on campus (e.g., student services, health center, counseling center, career center)”

Q75 “Do you think you will be less equipped or better equipped to handle future stress as a result of your experiences during the past year?”

blank = no response or skipped

1 = “Considerably less equipped”

2

3 = “No change”

4

5 = “Considerably more equipped”

Q76 “After going through this stressful period, how likely would you be to seek help through

your campus counseling center for future stressful experiences?”

blank = no response or skipped

1 = “Not at all likely”

2

3 = “Neither more nor less likely”

4

5 = “Very likely”

Q77 “If you had a friend who was going through similarly stressful experiences, how likely would you be to refer her or him to the campus counseling center?”

blank = no response or skipped

1 = “Not at all likely”

2

3 = “Neither more nor less likely”

4

5 = “Very likely”

Q78u “What could your college or university have provided you or done differently to better help you manage during this stressful time?” (text; blank = no response or skipped)

Q79u “In what ways do you feel like you have grown from going through this stressful experience and / or what personal strengths have you become more aware of?” (text; blank = no response or skipped)

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