

# Effects of Individual Secularity, Institutional Secularity and Campus Activity Involvement on College Student Suicidal Ideation and Attempts

Christopher Daood  
*Marquette University*

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EFFECTS OF INDIVIDUAL SECULARITY, INSTITUTIONAL SECULARITY AND  
CAMPUS ACTIVITY INVOLVEMENT ON COLLEGE STUDENT  
SUICIDAL IDEATION AND ATTEMPTS

by

Christopher J. Daood, B.A., M.A.

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ABSTRACT  
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Using undergraduate data from a recent study on the Nature of College Student Suicidality, this paper explored the impact of campus activity involvement, individual secularity and institutional secularity as risk and/or protective factors for college student suicidal ideation and attempts. Results revealed that students who participated in at least one campus activity and students who affiliate with a Christian faith were less likely to seriously consider suicide in the last twelve months. Gender differences were found in the relationship between institutional secularity and serious consideration of suicide, with non-secular institutions serving as a protective factor for women, but not men. Individual secularity was the only independent variable correlated with reduced rates of suicide attempts. Implications for higher education decision-making and counseling center practices are discussed, and future research directions are proposed.

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## CHAPTER 1: INTRODUCTION

### College Student Suicidality

The focus of this study is on college student suicidal thoughts and suicide attempts; specifically studying how the prevalence of suicidal ideation and suicide attempts relates to a student's involvement in campus activities, that individual's secularity, the secularity of the college institution that person attends. The current study will utilize an undergraduate subset of archival data from a 2006 national college student suicide survey. The anonymous, web-based survey was coordinated through the National Research Consortium of Counseling Centers in Higher Education, and was conducted by Dr. Chris Brownson, Dr. Shanna Smith and Dr. David Drum (from this point forward this study will be referred to as the *national study* and the accompanying survey will be referred to as the *national survey*). By looking at college student suicidal ideation and suicide attempts, the national survey addressed how college students cope with personal crises. The results of the national study were envisioned to help university administrators improve the provision of counseling center services and lead to new ways of preventing college students from entering and progressing along the suicide continuum. This paper will analyze the data from the national survey to learn more about how campus activity involvement, individual secularity, and institutional secularity serve as risk or protective factors for suicidal ideation and suicide attempts. The results of this study hope to offer higher education a better understanding of how the college experience can mitigate risk factors students bring into their college experience, as well as promote protective factors that keep a student safe and enhance life-long resilience toward suicide. This study explores the impact of two factors on suicidality (institutional secularity and activity

involvement) that have been researched very little, and a factor (individual secularity) that has been researched for decades. Therefore, some aspects of this study are exploratory in nature and some are to further explore previous findings. The specific research questions of the current study and the proposed analyses will be listed later in this chapter.

### *Definition of Terms Related to Suicide*

To provide clarity and consistency throughout this paper, specific definitions of the various levels of suicidality will be taken from the work of the *Committee on Pathophysiology and Prevention of Adolescent and Adult Suicide*. That committee created a report titled *Reducing Suicide: A National Imperative*, and one aspect of the report addressed the development of a specific nomenclature for levels of suicidality (O'Carroll, Berman, Maris, & Moscicki, 1996). For this paper *suicidal ideation* - the most common and least serious level of suicidality – will be defined as “thoughts of harming or killing oneself.” (Institute of Medicine, 28). *Suicide attempts* will be defined as “a non-fatal, self-inflicted destructive act with explicit or inferred intent to die.” (Institute of Medicine, 27). And *suicide* will be defined as “a fatal self-inflicted destructive act with explicit or inferred intent to die.” (Institute of Medicine, 27). To better understand college student suicide, researchers have focused on suicidal ideation, suicide attempts and completed suicide as three separate, yet connected, foci. A related term, *suicidal communications*, will be used to describe “direct or indirect expressions of suicidal ideation or of intent to harm or kill self, expressed verbally or through writing, artwork, or other means.” (Institute of Medicine, 28). The term *suicidality* will be used throughout this paper to encompass “all suicide-related behaviors and thoughts including completing

or attempting suicide, suicidal ideation or communications” (Institute of Medicine, 28). While these definitions will provide consistency in this paper, it is important to note that students who filled out the national survey were not privy to these definitions, so they constructed their own meaning of the phrasing used in the study, like *seriously considered suicide*.

### *Importance of College Suicide Research*

In 2004 the United States Congress passed the Garrett Lee Smith Memorial Act (2004), which provided financial support for the development and implementation of suicide screening and prevention programs on college campuses. This national attention to address college student suicide stemmed at least partially from college suicides that have been widely publicized in the media (Haas, Hendin, & Mann, 2003; Shea, 2002), and was also likely a result of colleges being viewed as protective environments for students, where suicides are viewed as tragic, unnecessary losses of young adults with much potential (Joiner, 2005). Even though some studies have found the rate of college student suicide to be less than the national average of matched samples of non-college individuals (Schwartz, 2006a; Silverman, Meyer, Sloane, Raffel, & Pratt, 1997), suicide has been the second or third leading cause of death for college students for decades (Suicide Prevention Resource Center (SPRC), 2004). Colleges are assumed to be protective environments for academically advanced students, so given the fact that suicide is preventable, yet it is one of the leading causes of death for college students, suicide continues to be viewed as a major health and safety concern for college students. This is evidenced by increased state and federal grant funding intended to reduce college student suicide, the hiring of campus professionals to coordinate education about suicide



prevention, and increased national media attention toward college student suicide (Joiner, 2005).

### *Measurement and Prevalence of Suicidality in College Students*

While studies continue to lack some consistency in how they define and measure the various levels of suicidality, a growing number of research studies and more consistent measurement parameters have increased the reliability of suicidality prevalence data and the comparability of research results. Regarding the measurement of suicidality, statistics on completed suicide are typically measured by the number of instances per 100,000 people. For example, suicide statistics from the National Vital Statistics Reports on the National Center for Health Statistics website, operated by the Center for Disease Control and Prevention (2005), showed that the annual suicide rate in 2005 for all ages in the United States was 11/100,000 (reflecting 32,637 suicides that year). Frequency of college student suicide has been found to be at or slightly higher than 7.5/100,000 (Furr, Westefeld, McConnell, & Jenkins, 2001; Silverman et al., 1997; Westefeld et al., 2006).

For attempted suicide and suicidal ideation, the standard for data reporting is in percentages of the population measured. For example, the results of the National College Health Risk Behavior Survey (NCHRBS), conducted by the Center for Disease Control and Prevention (1995), found that 9.5% of students reported suicidal ideation and 1.5% reported that they had attempted suicide in the last 12 months. More recent data from the spring 2008 National College Health Assessment (American College Health Association (ACHA), 2009) and the National Research Consortium Survey of College Student Suicidality (Drum, Brownson, Burton Denmark, & Smith, 2009), show slightly lower

rates of suicidal ideation and attempts, with the ACHA results finding that 7.1% of students seriously considered suicide in the last year and 1% attempted suicide. Results of the National Research Consortium Survey were split between undergraduate and graduate students and were even lower, with 6% of undergraduates seriously considering suicide and 0.85% attempting suicide.

There are many factors that influence statistical findings about suicidality and, as can be seen above, a large range of results. For starters, there is a significant difference between the number of college students who consider suicide, the number who attempt suicide, and the number who complete suicide. It is logical that the number of college students who consider suicide far exceeds the number of students who attempt suicide, and the number of students who attempt suicide obviously exceeds the number who complete suicide. While differences in the rates of these levels of suicidality are not surprising, research on the prevalence of each level of suicidality for college students has varied considerably. For example, research regarding the frequency of college students considering suicide has ranged from less than 10% (Kisch, Leino, & Silverman, 2005) to more than 40% (Drum et al., 2009; Rudd, 1989); research regarding the frequency of college student suicide attempts has ranged from 1% (Drum et al., 2009; Furr et al., 2001; Westefeld & Furr, 1987) to around 5% (Rudd, 1989; Westefeld et al., 2005); and research on the rates of completed suicide by college students has ranged from 5 to 50 per 100,000 (A. Lipschitz, 1990).

The measurement of college student suicidality has evolved significantly, but variation continues to exist in how suicide variables are defined, measured and reported. Comparing findings for suicide research is difficult because studies have not used

consistent definitions or controlled for important factors like age (Rudd, 1989; Silverman et al., 1997) and differences in class (i.e. undergrad/graduate and part-time/full-time) (Haas et al., 2003). For example, age was found to be a confounding factor in the Big Ten Study on Suicide by Silverman et al. (1997). Findings in this study were limited because demographic variables, like age and class, were not controlled. Specifically, there were a large percentage of undergraduate students over the age of 24, so the impact of developmental characteristics was unclear (Silverman et al., 1997). Only most recently has a study on suicide been designed to control for age and class, and introduce an approach to let participants identify their level of suicidality on a broad range of severity (Drum et al., 2009). The variation in research statistics around suicidality, as well as prevalence of suicide, will be addressed more thoroughly in chapter 2.

### *Risk and Protective Factors*

It is important to not only value that colleges are doing something right to reduce suicidality, but also to understand what it is that the institutions are doing right. How are colleges reducing the likelihood that a student will kill him or herself? Are there certain characteristics of the individual or the environment that reduce the likelihood of suicide? For the few students that do commit suicide, what are the characteristics of those people or their environment that allowed them to do it? Recent suicide research has focused on understanding what deters or exacerbates suicidality, and these influences have been termed *protective factors* and *risk factors*, respectively (Leach, 2006; Westefeld et al., 2006).

Given the continued prevalence of, and attention toward suicide on college campuses, researchers have become increasingly interested in the factors that influence

the level of suicidal ideation, attempts and completed suicide. Much suicide research has focused on *risk factors* for suicide, defined as any factor empirically shown to correlate with suicidality (Hendin, Maltzberger, Lipschitz, Pollinger Haas, & Kyle, 2001; Westefeld et al., 2006). Among the long list of risk factors that suicidologists have found, examples include depression, a history of suicide attempts, substance/alcohol abuse, and history of abuse (Brown, Beck, Steer, & Grisham, 2000; Gencoz & Or, 2006; Westefeld et al., 2006). Another significant body of research has focused on *protective factors*, which are defined as “adaptive characteristics that may inhibit suicidal behavior (p. 934)” (Westefeld et al., 2006). Examples of protective factors include: feelings of responsibility toward family, fear of social disapproval, moral objections toward suicide, good self-esteem, and good problem solving skills (Beautrais, 2003; Westefeld et al., 2006). Currently, much suicide research is focused on understanding how these individual factors contribute to and/or reduce suicide rates on college campuses (Borowsky, Ireland, & Resnick, 2001).

### *Statement of the Problem*

Researchers have been studying the risk and protective factors that impact levels of college student suicidality (Pavela, 2006a; Silverman, 1993), and this study is intended to contribute to that pool of research by exploring three college student suicide risk/protective factors. A recent study offers a new paradigm to understand suicide; one that is problem focused versus individually focused (Drum et al., 2009). This new paradigm provides a spectrum of suicidality that reflects an evolution of suicide from initial thoughts through multiple attempts. While this new paradigm has many benefits

for both prevention and intervention along the suicide continuum, the authors reinforce that it,

“...does not discredit the prevailing paradigm; in fact, it fortifies the knowledge needed to increase the success of interventions characteristic of this paradigm. For example, clinicians are likely to benefit from an enhanced understanding of the variable risk associated with different subjective emotional states, common patterns of ideation, students’ perceptions of the impact of various risk-conferring and protective factors, and students’ experiences of seeking professional help” (p. 219).

The first two research questions in the current study address whether or not institutional secularity has an impact on the level of suicidality on a college campus. In other words, are students at non-secular colleges more or less likely to consider and attempt suicide than students from secular institutions? Not much research has addressed this question in educational settings, and none regarding colleges. A high school study was one of the few pertaining to this question, and found lower levels of suicidality at parochial schools than public schools (Greening & Dollinger, 1993). However the term ‘parochial’ was not operationally defined as non-secular, so the results of that study need to be interpreted with caution because ‘parochial’ and ‘non-secular’ may represent different constructs. The current study will focus only on Christian colleges as non-secular institutions and public colleges as secular institutions, and results are intended to measure the impact of this variable and provide a baseline for future research.

Overall, research has supported the relationship between individual secularity and levels of suicidality (Dervic et al., 2004; Exline, Yali, & Sanderson, 2000), but no

research has focused specifically on college students. Much of the previous research in this area has used the term 'religious affiliation' versus this study's focus on 'individual secularity.' Studies focusing on the relationship between religious affiliation and suicidality have typically measured the level of an individual's involvement in religious faith as a continuous variable, with the goal of seeing if more or less participation in a faith impacted rates of suicidality. Other studies exploring the relationship between 'religious affiliation' and suicidality have compared suicide rates between individuals who affiliated with different faiths. In this study the term 'individual secularity' was chosen to differentiate between secular students and Christian students. Christian students were selected because a majority of participants who endorsed any of the religious faiths selected 'Christian.' This large sample was seen as an opportunity to increase the reliability of the results. This researcher was interested in exploring the differences in the relationship secular versus Christian individuals had with suicidal ideation and suicide attempts.

The final research questions of this study will look at the relationship between the level of involvement in campus activities and suicidal ideation and attempts in the last 12 months. Like research on the relationships between institutional secularity and suicidal ideation and attempts, very little research was found on the relationship between campus activity involvement and suicidal ideation and attempts. Therefore, this study will offer its findings and potentially spur further research in this area.

In summary, college student suicide is very preventable, yet it continues to be one of the leading causes of death on college campuses. Additionally, an alarmingly high percentage of college students consider or attempt suicide. Research proposes many

protective factors that increase the resilience toward suicidality and many risk factors that increase vulnerability. Among the factors that impact suicidal ideation and attempts that need to be researched more thoroughly are whether or not students are involved in campus activities, the individual secularity of the student, and the institutional secularity of the college that student attends.

### *Research Questions and Hypotheses*

This study will look at the relationship college student suicidal ideation and suicide attempts have with involvement in campus activities, individual secularity, and institutional secularity. As stated above the study will explore how participation in campus activities (e.g. Greek life, club/intramural sports, religious organizations, student government, etc.) is related to suicidal ideation and suicide attempts. The first research question asks, “Is there a relationship between college student activity involvement and seriously considering suicide in the last 12 months?” The second research question asks the same about suicide attempts, and is phrased, “Is there a relationship between student activity involvement and attempting suicide in the last 12 months?” Because other studies have suggested a negative relationship between suicidality and activity involvement (Greening & Stoppelbein, 2002; Mazza & Eggert, 2001), the following research hypotheses address these first two research questions:

1. Students who participate in one or more campus activities are less likely to seriously consider suicide in the last 12 months than students who do not participate in campus activities.

2. Students who participate in one or more campus activities are less likely to attempt suicide in the last 12 months than students who do not participate in campus activities.

The next two research questions examine how suicidal ideation and attempts correlate with an individual's secular or Christian identity. The third research question asks, "Is there a relationship between individual student secularity and seriously considering suicide in the last 12 months?" The fourth research question asks the same about suicide attempts, and is phrased, "Is there a relationship between individual student secularity and attempting suicide in the last 12 months?" As seen above, other studies have shown that individuals who affiliate with a religious faith are less likely to consider and commit suicide than individuals who do not (Dervic et al., 2004; C. G. Ellison & George, 1994; Exline et al., 2000). These results are hypothesized to exist with college students, and are reflected in the third and fourth hypotheses listed below:

3. Students who affiliate with a Christian faith are less likely than secular students (including Agnostic, Atheist, and Non-religious/Secular for this study) to have seriously considered suicide in the last 12 months.
4. Students who affiliate with a Christian faith are less likely than secular students (Agnostic, Atheist, and Non-religious/Secular) to have attempted suicide in the last 12 months.

Lastly, the relationship between the secularity of the college a student attends and the rates of suicidal ideation and attempts will be studied, and are reflected in the third and fourth research questions; "Is there a relationship between the secularity of an institution and a student's likelihood to consider suicide in the last 12 months?" and "Is



there a relationship between the secularity of the institution a student attends and the likelihood that student will attempt suicide in the next 12 months?” While limited research has been done in this area, studies on high school students have suggested a relationship between attending a non-secular school and less likelihood that a student will become suicidal. Hypotheses five and six are listed below and reflect these previous findings:

5. Students who attend non-secular institutions are less likely to seriously consider suicide in the last 12 months than students who attend secular institutions.
6. Students who attend non-secular institutions are less likely to attempt suicide in the last 12 months than students who attend secular institutions.

In addition to the correlations explored in the hypotheses above, this study will also explore the main and interaction effects of each of the independent variables on suicidal ideation and suicide attempts. The seventh and eighth research questions, listed below, will explore how much individual secularity, institutional secularity, and involvement in campus activities predict suicidal ideation and attempts:

7. Students who participate in more campus activities, are Christian, and attend a non-secular institution are less likely to seriously consider suicide in the last 12 months than students who participate in less campus activities, are secular, and attend a secular institution.
8. Students who participate in more campus activities, are Christian, and attend a non-secular institution are less likely to attempt suicide in the last 12 months than students who participate in less campus activities, are secular, and attend a secular institution.

## *Methodology*

### *National Archival Dataset*

This study utilized a subset of archival data from the study on The Nature of College Student Suicidality conducted by the National Research Consortium of Counseling Centers in Higher Education. The title of the 2006 research study was *Suicidal Thoughts and Behavior among Undergraduate and Graduate Students in the United States*, and was coordinated by researchers at the University of Texas – Austin. Undergraduate and graduate participants in the National Survey were randomly selected at each participating college or university, and the current study only used the undergraduate student subset of data, consisting of 14,872 students.

### *Analysis*

The main analyses done to address the eight hypothesis of this study are chi-square, ANOVA, and logit regression tests. Preliminary analysis were done to satisfy the assumptions of each test, and frequencies and percentages of the demographic variables of gender, age, religious affiliation, and year-in-school were run to clarify their impact on the dependent variables of suicidal ideation and suicide attempt. Additionally, for each hypothesis a separate chi-square test assessed the relationship between each independent variable (individual secularity, institutional secularity, and involvement in activities) and the two dependent variables of suicidal ideation and suicide attempt. Because the dataset is large, Cramer's V was selected to measure effect size related to these chi-square analyses.

## CHAPTER 2: LITERATURE REVIEW

### Introduction

Colleges and universities have received much attention from the media regarding high profile wrongful death lawsuits related to student suicides. One example happened in 2000, when Michael Frentzel, a freshman at Ferrum College in Virginia, committed suicide. Michael had a fight with his girlfriend on the night of his suicide, and following the fight he was visited in his dorm room by Ferrum College police officers, the Dean of Students and a campus counselor. The dean and the counselor had Michael sign a *no harm contract* (a signed agreement to not harm oneself), then left Michael unattended while they went to another room to talk with Michael's girlfriend. While unattended, Michael hung himself in his room. Michael's family subsequently filed a lawsuit against the college, and Ferrum College was found to have "shared responsibility" for Michael's suicide (Hoover, 2003).

This case of college student suicide is significant for a number of reasons. First, this is the first case in the United States where a college has been found to have 'shared responsibility' for a student's death by suicide. Parents are often aware of a history of mental health concerns for their son or daughter and do not seek to blame the college for the suicide, but an increasing number of wrongful death lawsuits regarding college student suicide have been filed in the last decade (Hoover, 2003). Second, Ferrum College agreed to improve the counseling and crisis intervention services it offers students. Improvements included having at least two university staff always available to address mental health issues, and to provide more clear information to students and their families regarding the parameters of college counseling center services. As student

mental health demands have dramatically increased over the last quarter century, college counseling centers have recognized this demand and attempted to address it by requesting more staff and shifting to shorter-term therapy treatment models (Haas et al., 2003). Finally, this case exemplifies the expectations our society has on higher education institutions to prevent suicide. Ferrum College professionals from three departments responded to Michael, and went as far as having him sign a no-harm contract. Given Michael's suicide and the results of the lawsuit in favor of Michael's family, this was obviously not enough. Higher expectations to reduce student suicide rates at colleges stem from the fact that college students typically have a more structured and supportive peer environment, a greater sense of purpose, and increased availability of low or no cost mental health services than their peers not in college. From this and other cases, college administrators and college counseling center staff recognize: 1) the expectations for the well-being and safety of college students are high, 2) institutional and individual vulnerability to legal liability, and 3) that student mental health and safety needs push the limits of campus mental health resources (Haas et al., 2003).

To effectively review the literature regarding the impact of three factors on college student suicidal ideation and suicide attempts, several sections in this chapter will address the significance of the problem, the theory and factors that have been proposed to understand that problem, and the avenues to promote positive change. The first section of this chapter will provide information about the prevalence of completed suicide at global, national and collegiate levels. The second section will explore research that addresses suicidal ideation and suicide attempts for college students, comparing that data to national data for non-college students of similar ages. Demographic and methodological

factors that influence the comparability of these research findings on suicidal ideation and suicide attempts for college students will also be discussed in the second section, which will conclude by highlighting the mental health trends connected with suicidal ideation and attempts.

From the more objective data in the first two sections, the third section of this chapter will discuss the history of suicide theories and models proposed to understand and treat suicide. Theories of suicide go back over a century and have evolved from a sociological perspective to a psychological perspective, and finally to a biopsychosocial perspective. The theories section will highlight this development and reveal when suicide theory moved away from paralleling psychotherapeutic theory.

Suicide risk factors, warning signs and protective factors will be the focus of the fourth section of this chapter. Specifically, this section will review the impact of individual factors and highlight models of these factors that have been developed to aid in their conceptualization. The last three areas of this section will explore the research related to this dissertation's three areas of study. First, research addressing how a student's involvement in campus activities (e.g. student organization, intramurals, and fraternity/sorority) is related to suicidal ideation and suicide attempts will be discussed. The next area will review how being affiliated with a Christian faith has been found to influence suicidality. And the final section will discuss the limited research on the relationship between institutional secularity and suicidality. The findings of this study are intended to fill some of the gaps in suicide research, highlight opportunities for intervention with students who consider or attempt suicide, and subsequently reduce the frequency of completed suicides.

## Prevalence of Suicide

This section will provide an overview of what we know about suicide prevalence. It will start by briefly looking at global/international suicide rates, then address suicide prevalence in the United States. A more extensive review of adolescent and young adult suicide rates will then be reviewed, and this section will conclude by looking at college student suicide rates as a unique subset of the adolescent and young adult population.

### *World Population*

Suicide is a problem internationally for all age groups, with the exception of prepubescent children. The most recent World Health Organization [WHO] Mortality Database (2000) showed that global suicide rates have increased by 60% in the last 45 years. Data from WHO in 2000 shows that 817,000 people (16/100,000) died by suicide that year. Of the regions of the world, men in Europe (35/100,000) and people in the Western Pacific (20/100,000) have the highest suicide rates. Higher suicide rates exist for men than women in all regions of the world, except China, where suicide rates are equal for men and women (Joiner, 2005). For both men and women suicide rates steadily increase throughout their lifetime, with the most significant increase between the 5-14 age range and the 15-29 age range. Noteworthy for this study, more than 50% of the global mortality rate due to suicide occurs among those 15-44 years of age (WHO, 2000).

### *General United States Population*

The statistics for the United States are consistent with global statistics. According to online data from the National Center for Health Services (CDC, 2006), suicide was the eleventh leading cause of death in the United States, responsible for 33,300 deaths annually. This reflects an annual rate of 11.1 completed suicides per 100,000 people.

About half of these deaths were from the use of firearms (16,883), and an additional 40% were from either suffocation (7491) or poisoning (6109). Women consider and attempt suicide at higher rates than men, but the frequency of completed suicide is higher for men (Fergusson, Woodward, & Horwood, 2000). This difference exists because women use less lethal methods such as poisoning, whereas men use more lethal methods like firearms, hanging and vehicle exhaust (Beautrais, 2003; Brent & Bridge, 2003). Similar to international suicide rates, suicide rates in the United States are very low before puberty, but after puberty the rates of suicidal ideation, attempts and completed suicide dramatically increase (Fergusson et al., 2000). From post pubescent years through early and middle adulthood, suicide rates stay fairly constant; then suicide rates for the elderly climb significantly, especially in older men (Stillion & McDowell, 1996).

Suicide rates for adolescents and young adults have varied significantly in the last half century. From the mid 1950s to early 1980s the suicide rates of 15 to 24 year old males tripled and 15 to 24 year old females doubled (Brenner, Hassan, & Barrios, 1999; Haas et al., 2003). Specifically, from 1957-1987 overall suicide rates for this age group increased from 4 per 100,000 to 12.7 per 100,000, but this dramatic increase lacks a clear explanation (Chamberlain & Hall, 2000). Using data from the United States Census Bureau website (2006) and the CDC Mortality Database (CDC, 2006), current estimated rates of suicide for this age are around 10 per 100,000. Suicide is the third leading cause of death for the general population of 18-24 year olds, the same age as student data from this study. Of the 28,597 18-24 year olds that died in 2006 in the US, 13,278 (46.4%) died by unintentional injury, 4,769 (16.7%) died by homicide and 3468 (12.1%) died by suicide (CDC, 2006). Researchers often question if some of the people that are classified

as dying by unintentional injury are actually cases of suicide. Coroners need to have clear evidence that a person committed suicide before declaring someone's death a suicide, so in situations where, for example, someone gets hit by a train or bus, or has a car accident without anyone else in the car, uncertainty sometimes exists about whether a person's death was accidental or intentional.

Similar to the overall population, methods of suicide differ by gender. Six times as many 18-24 year old men (n=2979) died from suicide as women (n=489) of the same age range. Most young men that committed suicide in 2006 used a firearm (51.4%), followed by suffocation (33.4%) and poisoning (6.3%). The most common method of suicide for young women was suffocation (38.7%), followed by firearms (28.4%) and poisoning (23.5%) (CDC website, 2006).

#### *College/University Population*

During the early 1980s to mid 1990s suicide became the second leading cause of death for college students, with unintentional injuries being the most common cause of death (Haas et al., 2003). However, until the late 1990s no comprehensive, cross-campus study of college student suicide had been completed (A. Lipschitz, 1995). The existence of only smaller, single-campus, or regionally bound studies led researchers to question the reliability of research findings, citing methodological factors like inconsistent case definitions and samples that are small and unrepresentative of the national college student population (Kisch et al., 2005; A. Lipschitz, 1990). The first comprehensive study on suicide was The Big Ten Student Suicide Study conducted by Morton Silverman (1997). In this 10-year longitudinal study, Silverman found the overall suicide rate for the sample of undergraduate and graduate students to be 7.5/100,000, roughly half the national



average at that time. Among the interesting findings in that study, students who were 25 years and older had a higher risk of suicide than college students less than 25 years old. Additionally, male undergraduates had suicide rates about twice that of women, but suicide rates among graduate students did not differ significantly between men and women (Silverman et al., 1997).

Silverman's Big 10 Study is still recognized as one of the most methodologically sound analyses of college student suicide, having taken a step in the right direction by more clearly defining parameters around the measurement of college student suicide. However, limitations were inherent in some of the study design. To encourage colleges to participate in the study, colleges were assured that only the total data set would be analyzed, creating a barrier to identifying and analyzing the differences between the 12 participating institutions. This limitation did not allow Silverman and colleagues to critique the impact of service availability (e.g. psychiatric services) on rates of suicide. Other limitations of the study design were that it did not distinguish between full-time and part-time students. Additionally, the Big Ten Study defined a college suicide as any suicide that occurred within six months of having last registered as an active student. This definition has been acknowledged to exclude a number of former students who dropped out of school and then committed suicide (Haas et al., 2003).

Another comprehensive, cross campus collection of suicide data has been done by college counseling center directors for the last several years. They complete an annual survey which includes a question about the number of students that have committed suicide within the last year, and in 2005 counseling center directors reported that 154 students committed suicide. Most of these individuals were male (75%), undergraduate

(83%) and Caucasian (81%), and a large percentage of them were known to be struggling with depression (45%) and relationship problems (27%). Directors elect whether or not to participate in this survey, so caution should be taken in generalizing the results to the overall college student population (Gallagher, 2005).

Other comprehensive research on college student suicidality has been completed, and has revealed similar or higher levels of completed suicide (Furr et al., 2001; Westefeld et al., 2006), but those studies have also left some of the same questions of accuracy and reliability described above. More recent studies, including the National Survey data used for this paper, have also begun to explore suicidal ideation and suicide attempts to look at the evolutionary progression of suicidality in an effort to prevent completed suicide (Drum et al., 2009).

#### *Prevalence of Suicidal Ideation and Attempts for College Students*

Research shows that it is relatively common for college students to consider suicide. In exploring studies within the last 25 years, research in which subjects have been asked to report about suicidality during the last year most frequently found rates of suicidal ideation around 10% (Kisch et al., 2005), but variation existed, with one study finding that over 40% of subjects had considered suicide in the last year (Rudd, 1989). In a recent study that measured suicidal thinking over a student's lifetime, over 50% of students had at least one period of suicidal thoughts (Drum et al., 2009). This study measured suicidal ideation on a continuum of frequency and severity, allowing respondents to endorse anything from never having suicidal ideation to having suicidal thoughts on a regular basis for several years. This same study also measured suicidal thinking over the last 12 months, and those rates were lower (6%) than the previously

mentioned results. This study measured suicidal thoughts and behaviors (as well as prior experiences with psychological help and psychotropic medication) in a comprehensive manner and the authors give the following rationale for that approach. “Answering multiple questions across several levels of severity prompted students to think deeply about their history of suicidality and provided them with the opportunity to precisely relate their experiences of suicidal thought. Individuals who experienced low levels of suicidal or presuicidal thinking were able to express this without endorsing a single item regarding serious suicidal ideation” (Drum et al., 2009) (p.216).

Three additional studies measured suicidal ideation “while in college” or “since coming to college” and the rate of consideration ranged from 9% to 30% (Furr et al., 2001; Westefeld & Furr, 1987; Westefeld et al., 2005). While all of these studies also measured the frequency of suicide attempts, three of them also measured a middle ground between suicidal thoughts and suicide attempts, namely a level of suicidality reflecting a suicide plan or intent. One of these studies, done by Rudd (1989), studied college student suicidality using the Suicidal Ideation Scale (SIS) - a 10 item scale developed to assess the severity or intensity of suicidal ideation via self-report. Over 43% of participants experienced some level of suicidal ideation in the last year. Of these, 14.9% in some way acted on that ideation (i.e. either told someone they wanted to kill themselves or came close to making an actual attempt). Two other studies that requested information about a suicidal plan found frequencies of 10% (Adkins & Parker, 1996) and 7% (Brenner et al., 1999). In the study by Drum et al. (2009) 92% of undergraduates who seriously considered suicide either considered ways of killing themselves or had a specific plan. A

much smaller percentage of the undergraduates who seriously considered suicide actually attempted (14%).

Not surprisingly, the percentage of students who attempt suicide is far less than the percentage of students who considered suicide, and significantly less than the percentage of students who have an intent or plan to commit suicide. Several studies found the rate of college student suicide attempts around 1-2% (Brenner et al., 1999; Drum et al., 2009; Furr et al., 2001; Kisch et al., 2005; Westefeld & Furr, 1987) while other studies found the frequency of attempts to be between 4% and 6% (Rudd, 1989; Westefeld et al., 2005) (Adkins & Parker, 1996). The studies with higher rates of suicidal ideation also revealed higher rates of suicide attempts, but reasons for these differences are not clear. Some studies measured suicidality in the last year while others measured it throughout a person's lifetime, but the highest rates of suicidality are from a study that only measured suicidality in the past year (Rudd, 1989). While it is outside the scope of this paper to speculate about the factors contributing to these different rates, it is safe to conclude that the time period the study measured (i.e. last 12 months versus lifetime) has a large impact on results, but is not the only factor impacting rates of college student suicidal ideation and attempts. The traits of individuals, like race, gender and sexual orientation, have been proposed as other factors impacting rates of college student suicidal ideation and attempts. Correlations researchers have identified between suicidality and all three of these areas will be discussed in the risk and protective factors section later in this chapter, but it seems important to describe the complex relationship between gender and levels of college student suicidality rates here.

### *Gender's Relation to Suicide Prevalence and Coping Resources*

Overall, young men commit suicide at a higher rate than young women, but women consider and attempt suicide more often than men. These gender differences have been attributed to men using more lethal methods of suicide (e.g., firearms, hanging, and vehicle exhaust) than women, who often use self-poisoning (Beautrais, 2003).

Interestingly, gender differences in rates of suicide among college students are quite different than the general population. For instance, the 2000 NCHA survey (Kisch et al., 2005) reported men attempting suicide over three times as often as women (0.8% to 0.3%), but women reported one or two more attempts than men (1.1% to 0.8%).

Regarding suicidal ideation, the results of the 2003 NCHA survey revealed that women reported higher levels of suicidal ideation than men in the past year (Stephenson, PenaShaff, & Quirk, 2006). However, in another study no significant gender differences were found between men and women for those considering or attempting suicide (Westefeld et al., 2005). Internationally, gender differences of suicide prevalence across most countries of the world have found a male-female ratio of suicide to be about 4:1.

However, Asian countries have much less gender difference in frequencies of completed suicide, ranging from 1:1 (i.e. China) to about 2:1 (i.e. India, Philippines, and South Korea) (Joiner, 2005). One explanation for these differences is that women's interest in competitive sports in some Asian countries contributes to an ethic of physicality, masculinity and aggression. These more traditionally masculine characteristics may contribute to the increased levels of suicidality in women from several Asian countries. In United States colleges an impact of women's participation in sports has also been found to elevate suicide risk factors and increase rates of suicidal behavior. For example,

increased pain tolerance has been found in women athletes (Manning & Fillingim, 2002). Additionally, another study found that college women who engaged in vigorous athletic activity were more likely to report suicidal behavior than other women (Brown & Blanton, 2002), which may indicate that vigorous athletic activity increases pain tolerance. This might contribute to women athletes who engage in vigorous athletic activity being more comfortable engaging in self harm behaviors than women who do not engage in vigorous athletic activity.

In addition to knowing that men are more likely to complete suicide in college and women are more likely to consider and attempt suicide, it also seems important to understand how men and women may deal with stressors that may have a contributory effect on suicide development. College students encounter a large amount of stressors that may worsen mental health and contribute to suicidality, and men and women have been proposed to cope with these stressors somewhat differently. One example is that women have been found to be more likely than men to hold onto relational values (Kaplan & Klein, 1989). This difference implies that men may struggle to achieve a sense of belongingness more than women, since women are less likely to abandon social support. This relational difference also might lead to men filling these relational gaps with behaviors that might contribute to lower inhibitions, like drinking and drug use.

#### *Limitations of Prevalence Data on Suicidal Ideation and Suicide Attempts*

Given the large variation in rates of suicidal ideation and suicide attempts between studies, it is difficult to identify clear trends in college student suicidal ideation and suicide attempts. While no obvious explanations exist for varying suicidality rates in

these studies, several factors have been identified that confound the results. These factors are discussed below.

Earlier in this paper different levels of suicidality were defined. To ensure comparability across studies researchers have been using more consistent definitions of suicidality terms. However, one of the confounding factors that exists between studies is inconsistent phraseology used to ask participants about suicidal ideation and suicide attempts. Some studies ask “yes” or “no” questions, like “Have you ever thought about committing suicide since coming to college?” (Furr et al., 2001;) Other studies have used Likert scales to find the level of suicidality on a scale capturing suicidal ideation, plan, intent and attempts, like the study by Rudd (1989) that uses the following levels of suicidality: 1) “I have been thinking of killing myself,” 2) “I have told someone I want to kill myself,” 3) I believe my life will end in suicide,” and 4) “I have made attempts to kill myself” (Rudd, 1989, p. 175). While there are strengths to both of these measurement strategies, the difference in approaches limits the comparability of the results.

Variations in the research sample characteristics also undoubtedly impact the reported rates of suicidality. These include factors like the age range of students; their socioeconomic status, ethnicity, and religion; and normative cultural factors like drug and alcohol use, competitiveness and achievement (A. Lipschitz, 1990). For example, The *Big Ten Student Suicide Study* (Silverman et al., 1997) revealed age as a confounding variable when it was discovered that less than 60% of the undergraduate college students studied were 24 years of age or younger and almost one-third were 30 and older. Even though the primary focus of the Big Ten Study was on completed suicide, it exemplifies the importance of controlling for age, regardless of the levels of suicidality being

measured. Age is further seen as a complicating factor when comparing the traditional age range for undergraduate college students (18 to 24) with the data collection age range of 15-24 for some national data collection, like the CDC's National Vital Statistics report for suicide (2004).

Therefore, it is important for researchers to specify parameters for class (e.g. undergraduate) and age range (e.g. 18-24) when measuring other factors that may contribute to suicidal ideation and suicide attempts so results can be reliably compared with other studies (Haas et al., 2003). Given the variation of study and participant demographics it is difficult to compare the conclusions of studies on suicidal ideation and suicide attempts for college students. We are left looking at trends and overall conclusions that research has revealed about suicidal ideation and attempts.

#### *Mental Health Trends Related to College Student Suicidality*

While there has not been research to suggest that suicide rates have increased for college students since the Big Ten Study by Silverman (1997), there has been increasing evidence that college students are dealing with more and more mental health challenges (Haas et al., 2003). Depression, anxiety and alcohol consumption have been shown to be significant factors for a large percentage of college students, and each have been shown to correlate with suicide. In one study, 28% of students reported feeling "hopeless" within the last year, and 22% reported feeling "so depressed they couldn't function" (Kisch et al., 2005) In 2005, college counseling center directors reported an increase in the number of students using college mental health services, an increase in the severity of mental health presenting concerns, and an increase in the number of students coming to college with a history of psychiatric treatment (Gallagher, 2005). Over 90% of directors believe that in recent years there has been an increase in the number of clients with severe



psychological problems. Specifically, directors reported that 42.8% of their clients have severe psychological problems, and 8.5% have impairment so serious that they cannot remain in school or can only do so with extensive psychological/psychiatric help.

While it is important to study suicidality during college, there are likely other factors prior to a college student's experience that impact levels of student suicidality. Suicidal ideation has often been shown to be prevalent before a student starts college, as exemplified in one study that found that over half of high school students report some risk for suicide (Greening & Dollinger, 1993), and another study that found 62.6% of high school students surveyed had suicidal ideation in their lifetime and 8.4% had attempted suicide (Smith & Crawford, 1986). College students arrive at college with a range of current and past mental health and suicide histories. This necessitates being able to respond to a large range of student needs, many of which have developed prior to entering college.

A majority of colleges provide services to reduce the risk of suicide, but less than 50% of counseling center directors report adequate funding for prevention and education efforts for students, faculty, staff and parents. To reduce college student suicide rates it has been suggested that college mental health services will have to increase staff and resources to provide prompt and specialized mental health services, promote mental health through education, and prevent and respond to suicidality in students (Gallagher, 2005). As suicide has become increasingly recognized as a problem for college students, resource allocation is important to respond to that need. As we currently explore the best ways to respond to the needs of college students, it seems helpful to have a theoretical framework for understanding suicide.

## Theories of Suicide

Over the last 150 years theories have been developed to better understand suicide. While there has been progress in the specificity of these theories, there continues to be skepticism about whether or not these theories adequately capture all of the factors that contribute to understanding suicidal thoughts and behavior (Joiner, 2005). The challenge of developing an adequate theory of suicide is exemplified in the following excerpt from Chamberlain and Hall (2001) that lists a large number of motivations for suicide, including, "...self directed hostility (anger turned inward, against oneself), retaliation for some real or imagined slight or offense (payback), a fantasy of rebirth, escape from severe stress, an attempt to rejoin a lost loved one who has died, atonement for some real or imagined sin, a way to control intolerable impulses, and confrontation with a phobic fear of death" (p.183).

This list of motivations for suicide could happen to anyone, including college students. While the list is not exclusive, it sheds light on the challenge and complexity of developing a comprehensive theory of suicide that incorporates the appropriate weight/significance of motivations and moderating/mediating factors of suicide. The most valid historical models over the last 125 years include sociological and psychological perspectives. Since then, contemporary theories have offered increasing depth and awareness to attend to the complexity of understanding suicide, but it is noteworthy that many aspects of the oldest models continue to provide merit to understanding why people consider, attempt, and commit suicide. The following review of the historical and contemporary theories of suicidality is offered as context to

empirical findings regarding suicide, which will be addressed thoroughly in the risk and protective factors section later in the chapter.

### *Historical Theories of Suicide*

Emile Durkheim proposed the first theory of suicide over a century ago. Many aspects of this theory, described in his 1897 book *Le Suicide* (Durkheim, 1897), continue to be supported by current theorists (Joiner, 2005). Durkheim offers a sociological perspective, emphasizing that collective social forces contribute to suicidality more than individual factors. His theory focuses on two ways individuals regulate their response to social forces; namely social integration and moral regulation.

As example of social integration, Durkheim's theory suggests that factors like marital status and religious affiliation influence suicidality, because they serve as measures of a person's social integration into society. Durkheim viewed these factors as relating to suicidality in a U-shaped perspective, reflecting two extreme levels of social integration that contribute to suicidality with the middle section of the 'U' being balanced social integration. The same examples of marital status and religious affiliation can be used to discuss the extreme levels of social integration. People who are not married or involved in a religious faith are more likely to be suicidal because they are not as socially integrated into society. Durkheim labeled this *egoistic* suicide, and in many ways it parallels what a more recent theorist, Thomas Joiner (2005), terms "low-belongingness," which Joiner views as people lacking frequent and positive interactions with others. More will be said about Joiner's theory later in the chapter, but it serves as an example of how Durkheim's theory continues to contribute to current suicide theories.

The second element of the U-shaped relationship in the social integration part of Durkheim's theory is comprised of people who become suicidal because they over affiliate socially. Durkheim labeled this *altruistic* suicide, proposing that excessive social integration often leads to loss of one's individual identity, and subsequent self-sacrifice (i.e. suicide) to support the social cause (e.g. marriage, religious faith).

Social regulation only represents half of Durkheim's theory of suicide. Moral regulation is the other half, and for this Durkheim also suggested two types of suicide - *anomic* and *fatalistic* suicide. Anomic suicide results from a significant change in a society's regulatory function, leading to a sudden change in an individual's social position. For example, if a wealthy, high-powered executive loses his or her job, the loss of money and status might contribute to that person becoming suicidal. Durkheim's last type of suicide is *fatalistic* suicide, and results from people having overregulated and/or unrewarding lives (Joiner, 2005). For example, people in abusive relationships may have overregulated and unrewarding lives, as they often feel emotionally or financially trapped into staying with that partner.

Durkheim's model to understand suicide has survived the test of time for a number of reasons. First, many suicide theorists continue to emphasize social connectedness as an important factor that contributes to someone becoming suicidal (Joiner, 2005; E. Shneidman, 1996), Second, situational factors, like loss of relational or financial status, or not finding meaning because of one's life being overregulated or unrewarding, are evident when we hear of someone committing suicide after losing a lot of money or an important relationship. Third, Durkheim's suicide theory did not have a lot of competition. It wasn't until Freud's development of psychoanalytic theory that

another theory of suicide was proposed, and as will be evident below, using psychoanalytic theory to understand suicide was not taken seriously for long.

Freud and others from the psychoanalytic perspective proposed that suicidality developed from anger and hostility turned inward, suggesting that these triggers could be caused by interruptions in auto-erotic activities (i.e., masturbation) leading to excessive guilt and consequently self-punishment (i.e., suicide) (Sullivan & Mullahy, 1947). Because most suicide has been shown to not be triggered by “anger and hostility turned inward” psychoanalytic theories of suicide are no longer highly regarded by most suicidologists. However, it is noteworthy that psychoanalytic theory was the first psychological theory of suicide (Joiner, 2005; Miller & Rose, 2000).

#### *Contemporary Theories of Suicide*

Historical theories of suicide came first from Durkheim’s sociological perspective and then from Freud’s psychological/psychoanalytic perspective. It wasn’t until the second half of the twentieth century that theories were introduced that offered perspectives that were new and did not necessarily coincide with the development of psychotherapeutic theories. Most recently, theories have been developed that integrated multiple perspectives.

Edwin Shneidman was the first to propose a contemporary theory of suicide, which also focused on psychological factors, but did not have a psychoanalytic foundation (E. S. Shneidman, 1985). Shneidman theorized that individuals who do not satisfy their psychological needs typically experience deep emotional pain, which Shneidman termed *psychache*. Examples of some of the 20 potentially unmet psychological needs that Shneidman identified are achievement, autonomy, dominance,

nurturance, and shame-avoidance. Shneidman proposed that the more a person's psychological needs are thwarted, the more they experience psychache. When psychache reaches intolerable levels a person becomes suicidal. Shneidman stated that people attempt suicide when they do not possess the psychological skills to manage their thwarted psychological needs.

From a similar psychological perspective, Baumeister (1990) purposed an escape theory of suicide. He outlined a causal chain of steps in which a person becomes motivated to escape from aversive self-awareness. This chain begins by someone having expectations that are not met, and that person blames himself or herself for not meeting those expectations. The emotional pain that results from this internal blame, which mirrors 'psychache,' causes someone to attempt to escape from self-awareness (to reduce the pain), with the goal being to achieve a state void of self-awareness and emotion. In this state of cognitive deconstruction – viewed as a person having rigid and concrete thinking, immediate or proximal goals, and avoidance of meaning – a person loses inhibitions and makes decisions that are extreme and irrational, like considering or attempting suicide (Baumeister, 1990).

Both Baumeister's and Shneidman's theories are primarily conceptual, with limited research being done to develop and support them. In developing his escape theory, Baumeister reference other researchers that have identified 'escape' as a motive for suicide, but very limited research is referenced in the detailed descriptions of the six steps of escape theory (Baumeister, 1990). Shneidman, on the other hand, based his theory on qualitative observations and interviews (E. Shneidman, 1996).

More so than Shneidman, Aaron T. Beck (1996) undertook research to empirically support his theory. What Shneidman terms *psychache*, and what Baumeister would describe as the *trigger for escape*, Beck would term *hopelessness*. Beck proposes hopelessness as the primary factor that predicts those who end up committing suicide. For instance, Beck suggests that hopelessness does not always predict suicide, but someone who commits suicide almost always feels hopeless. In one study Beck found that hopelessness was the primary predictor of suicide (Beck, Steer, Kovacs, & Garrison, 1985), and in another study hopelessness was found to be the only predictor of suicide (Beck, Brown, Berchick, & Stewart, 1990).

In the early 1990s suicide treatment theories became more prevalent and more complicated, often including more than one contributing factor. For example, Marsha Linehan introduced a cognitive-behavioral model for borderline personality disorder and suicide that includes sociological, psychological and biological elements (Linehan, 1993). Linehan's model focuses on the inability of people to tolerate negative emotion. She suggests that people respond to this negative emotion in a variety of ways, and some people choose cutting behavior and/or suicide attempts. Furthermore, biological factors, such as a family predisposition to depression, and/or exposure to trauma, such as childhood abuse, contribute to suicidal thoughts and behavior. Linehan proposed that these biological and experiential factors can interfere with the development of a person's ability to manage negative emotion. To help manage the emotional dysregulation of people who suffer from borderline personality disorder and/or suicidality, Linehan developed Dialectical Behavior Therapy (DBT). This treatment approach focuses on

substituting new and healthy behaviors, like calling a friend to help manage negative emotions, in place of the old and unhealthy behaviors, like cutting or attempting suicide.

These psychological, cognitive (cognitive-behavioral), and biological theories of suicide use different words that have overlapping meaning, like *psychache*, *hopelessness*, *escape*, and *disregulation*. But little specificity has been offered toward what is contributing to these feelings and needs. Most recently, Thomas Joiner (2005) has developed a suicide theory that integrates sociological, psychological and biological elements. His theory of suicide suggests that the acquired ability to enact lethal self-injury combined with ‘perceived burdensomeness’ (having the perception of burdening others) and ‘failed belongingness’ (having the perception of being excluded) are the essential elements of someone at highest risk for completed suicide (Joiner, 2005). Perceived burdensomeness and failed belongingness are more specific psychological experiences of people that contribute to the emotional pain a person experiences. Behaviorally, Joiner’s theory suggests that a person needs to progressively build up to the idea of actually inflicting self-harm, a new proposition in suicide theory. Additionally, Joiner emphasizes the role of genetics and neurobiology in suicidal behavior. In his book, “Why People Die by Suicide,” (2005) he summarizes how twin, adoption and family studies have revealed a clear link between genetics and suicidal behavior, with primary emphasis on the serotonin system.

#### *Summary*

Suicide theory, and accompanying models of treatment (i.e. DBT), has become more specific in its understanding of risk factors and more inclusive of biopsychosocial elements. A common thread that suicide theorists agree on is that suicide is often



triggered by emotional pain (i.e. psychache, hopelessness, escape, and negative emotion). Theorists also agree that not all emotional pain results in suicidal thoughts or behaviors. Therefore, theorists currently recognize the importance of understanding factors that lead someone who is experiencing emotional pain to consider or attempt suicide. Ellis and Ellis (2006) propose that it is the cognitive interpretation of a person's problems; Beck (1996) suggests that it's the level of someone's hopelessness; the theory by Baumeister (1990) implies that an individual's likelihood of becoming suicidal is based on how powerful that emotional pain is and how much that person needs to escape it; and Joiner (2005) adds the elements of acquired ability to enact self-injury, perceived burdensomeness, and low belongingness.

This trend of both solidifying a common understanding of suicide and proposing new ideas of how to understand the subtle individual differences of why some people consider or attempt and some people do not has substantially increased suicide research. However, as we can see from Chamberlain and Hall's lengthy list of possible motivations for suicide presented at the beginning of this section, it is very difficult to find a direct causal link between any one factor and suicide. Additionally, the history of suicide theory development has exemplified the uncertainty of how sociological, psychological and biological factors contribute to suicide independently or collectively. The next section on risk and protective factors will highlight what research has found and identify some of the gaps that remain to be filled.

#### Factors that Influence Suicide

To better prevent suicide, we need to learn more about what contributes to a person considering, attempting and/or completing suicide. What is it about men that make

them more likely than women to commit suicide, but less likely to consider or attempt suicide? What other risk or protective factors make a person more or less likely to consider suicide? How do we assess the risk of suicide, and what are the differences between risk factors, protective factors and warning signs? Responses to these and other questions will be addressed in this section on risk and protective factors.

During the 1990s as many as two-thirds of people that committed suicide visited a physician in the month prior to their deaths (Vastag, 2001). Despite relatively little public attention being given to this *missed opportunity* of physicians to prevent suicide, it reinforces the question of what clues exist to identify individuals that are considering or planning suicide. More so than physicians, colleges have received public pressure to not miss these opportunities to prevent students from killing themselves, and while that likely has been a primary contributing factor to lower suicide rates for college students, suicide continues to occur at unacceptable levels (Pavela, 2006b). As suicide research has evolved in its attempt to answer the questions of why people consider, attempt and complete suicide, studies have started to explore individual risk factors and the cross-effects of multiple risk factors. An example is Thomas Joiner's theory (Joiner, 2005) that proposes low belongingness, perceived burdensomeness, and the acquired ability to enact lethal self-injury to be the most significant risk factors in predicting suicide. But that is just one of several theories and three of many risk factors. In addition to demographic characteristics like age, culture and gender, research has become increasingly specific in the understanding of risk and protective factors that contribute to someone considering, attempting or completing suicide. The reality is that there has been abundant research studying the significance of individual risk factors like, academic concerns, loneliness,

relationships, hopelessness (Chioqueta & Stiles, 2005; Heisel, Flett, & Hewitt, 2003; Hirsch, 2004), helplessness, legal problems, depression, family problems (Brown et al., 2000; Gencoz & Or, 2006), and past abuse (Bryant & Range, 1995; Garcia, Adams, Friedman, & East, 2002; Thakkar, Gutierrez, Kuczen, & McCanne, 2000) to name a few. In fact, over 70 suicide risk factors have been identified, making risk assessment prioritization important and challenging (Joiner, 2005). Additional research will help clarify the significance of different contributing factors to suicidal ideation and suicide attempts, and understanding more about risk and protective factors will help prevent and effectively respond to college student suicidal thoughts and behaviors.

The study of risk factors is complicated by how they may differ from one culture or subgroup to another. For example, researchers have studied individual risk factors in conjunction with racial and cultural subgroups within the United States (Harris & Molock, 2000; Kimbrough, Molock, & Walton, 1996; Marion & Range, 2003; Westefeld, Maples, Buford, & Taylor, 2001) and world (Heisel & Fuse, 1999; Labelle & Lachance, 2003). Another complicating factor is that there are different subgroups of risk factors. Some risk factors represent individual traits, like gender or age, and other risk factors represent the state of an individual, like whether the person has a depressed mood or is anxious (Kisch et al., 2005). For example, being a male college student (a trait) is considered a risk factor, because men in college have been shown to commit suicide from 2.5 to 5 times as often as women (Schwartz, 2006b; Silverman et al., 1997). The goal and challenge for colleges is to find ways to create, categorize and prioritize the multitude of suicide risk and protective factors on individual and institutional levels in a manner that leads to effective prevention and intervention strategies.

This section will begin by defining terms related to suicidal risk, then highlight models of risk and protective factors for the general population. Next, the specific risk and protective factors of college students will be addressed. The section will conclude with information about how prevention efforts have benefitted from what we know about risk factors, warning signs and protective factors.

#### *Definition of terms*

To better understand suicide, researchers have developed three constructs to describe a person's vulnerability and resiliency to suicide: 1) protective factors, 2) risk factors, and 3) warning signs. This section will define each of these constructs, identifying how they are different and how they overlap.

Protective factors are constructs that contribute to a person's resilience toward suicide. Fergusson, Beautrais and Horwood (2003) described protective factors as "positive factors that mitigate risk of suicidal behavior" (p. 62) and Westefeld (2006) defines them as "adaptive characteristics that may inhibit suicidal behavior" (p. 934). Family connectedness and social support are both examples of protective factors, because they have been shown to decrease the likelihood of suicidal thoughts and behavior. (Fergusson, Beautrais, & Horwood, 2003).

Risk factors, on the other hand, reflect a person's vulnerability to suicide and are defined in an inverse manner to protective factors, namely as any empirically supported factors correlated with increased suicidality (Hendin et al., 2001; Westefeld et al., 2006). For example, being a man, having a psychiatric diagnosis, and having a past suicide attempt, are all factors that increase the risk of suicide (Beautrais, 2003). Different risk factors are more or less correlated with suicidality, and researchers describe the strength

of the correlation between a risk factor and suicide using an odds ratio (OR). An OR is a measure of how much more likely someone with a certain risk factor is to commit suicide. For example, in one study the OR for students who had dropped out of school committing suicide was 5.1 (Beautrais, 2000). This means that the likelihood of students committing suicide was 5.1 times higher for students who dropped out of school than students who did not.

Risk and protective factors have contributed to helping researchers and clinicians identify characteristics of people that make them more or less likely to consider, attempt or complete suicide, but assessing those factors in a person does not make suicidality very predictable. For example, many people positively endorse at least one risk factor of suicide at some point in their lives, but most people do not commit, attempt or even consider suicide. Conversely, someone who possesses one or more protective factors should not lead to the conclusion that that person is not vulnerable to suicide. While these constructs identify characteristics that contribute to a person's vulnerability or resiliency to suicide, they are not time limited and therefore do not directly indicate imminent risk of suicidal behavior (Rudd et al., 2006).

To address some of the descriptive limits of risk and protective factors, the construct of *warning signs* has been introduced. Rudd and colleagues (2006) define warning signs as “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 casually related to suicide” (p. 258). Examples of warning signs for suicide include thoughts of suicide, decreased academic or work

performance, and sudden changes in personality, behavior, eating, or sleeping patterns (Rudd et al., 2006). Warning signs are reflective of the current state of an individual, differentiating them from risk factors which are often past experiences, like being the victim of childhood trauma, or innate characteristics, like having a family history of suicide. The relationship between warning signs and suicidal behavior is proximal, versus the distal relationship between risk factors and suicide. This typically reflects how imminent the risk is for that person, with warning signs suggesting a near-term risk and risk factors suggesting a longer-term risk. As a result, there are a large number of people who have elevated suicide risk factors, but do not complete suicide, at least not anytime in the foreseeable future. Warning signs provide a helpful way to shift from enduring risk factors that are less likely to result in an immediate suicidal behavior to suicidal signs that signal the likelihood of a more immediate and imminent risk of a suicidal behavior. All three of the factors studied in this paper are best described as risk or protective factors of suicide versus warning signs, because individual and institutional secularity, as well as involvement in campus activities, all have a distal relationship with suicidality.

#### *Limitations of Risk/Protective Factor Research*

Annette Beautrais (2000), in a review of literature on risk and protective factors of suicide from 1980 to 2000, identified several methodological limitations. One limitation was that most studies were based on selected clinical samples, so applying the findings of these studies to different clinical populations or the general population could be misleading. Secondly, many of the studies failed to compare suicidal and non-suicidal subjects, frequently only looking at risk factors for people who committed, attempted or completed suicide. A third limitation was the relative absence of longitudinal studies. As

previously discussed, risk factors are not time limited, like warning signs, so nonlongitudinal research only captures a snap shot of risk factors for individuals, missing how the accumulation of risk and preventative factors over time may correlate with a person's level of suicidality. Finally, a large number of the studies failed to take into account key methodological issues related to confounding factors, sample selection bias and measurement error. It is noteworthy, that despite these methodological limits, there is good convergence of findings across studies on risk and protective factors. However, complementing the findings of Beautrais (2000), other research has suggested that, to effectively study and validate suicide risk factors, samples need to be large, have a prospective study design, and allow for long-term follow-up (Brown et al., 2000).

*Models of Risk/Protective Factors:*

In the consideration of risk and protective factors, researchers have suggested that it is essential to view the process of one becoming suicidal as typically evolutionary, with risk and protective factors having an ongoing contribution to a person's vulnerability to suicide as they go through life. Specifically, research has shown that negative early life experiences can predict the likelihood of suicidality later in one's life, later life experiences can reinforce risk factors that already exist with people, and protective factors can temper suicide risk (Beautrais, 2003; Fergusson et al., 2003).

To help understand and organize the research on individual risk factors of suicide throughout an individual's lifetime, more complex and systematic models of risk factors have been proposed (Beautrais, 2003; Fergusson et al., 2003). The two models reviewed in this section focus on 'youth suicide', which both authors acknowledge could more accurately be viewed as 'young adulthood suicide', because, despite measuring

suicidality throughout adolescence and into young adulthood, a vast majority of suicide deaths occurred between the ages of 20-24 .

In the first model, Fergusson (2003) suggested that risk for youth suicide is best explained by “an accumulative risk model in which social disadvantage, childhood adversity, mental health problems, personality factors and exposure to stress combine to influence risk” (p. 61). More broadly, this model highlights the significant contribution of five risk factor domains: 1) social background factors, 2) family factors and childhood environment, 3) personality and individual factors, 4) mental health factors, and 5) stressful life events and circumstances (Fergusson et al., 2003). The strength of Fergusson’s model is that it was based on a 21 year longitudinal study that led to the development of a life course model of the etiology of suicidal behavior. However, even though his research was based on an extensive review of youth suicide literature, his model represents findings from a single longitudinal study based on data from individuals in New Zealand, so there is some question of applicability to the United States, especially to college students in the United States.

Annette Beautrais (2003) also developed a model of factors that contribute to the development of suicidal behaviors in young people. Her model was created from a global review of the literature, and is more likely applicable to the United States college student population because it reviewed literature from all English speaking countries. The six domains of the Beautrais model are: a) genetic and biological factors, b) social and demographic factors, c) childhood adversity, d) personality traits and cognitive styles, e) exposure to stress and adversity, and f) psychiatric morbidity (Beautrais, 2003). As can be seen from Table 1 five of the six domains from Beautrais’ model are consistent with



Fergusson’s model, leaving only genetic and biological factors unique to Beautrais’ model. However, Beautrais’ model categorizes the domains of suicide risk factors into two levels. She proposes that all six domains can independently contribute to suicidal ideation, attempts and completed suicide, but specifies that factors from the first four exogenous domains (signified with ‘\*’ in Table 1) contribute to factors from the last two proximal domains (signified with ‘\*\*’ in Table 1). This section will explain the domains of Beautrais’ model, and give examples of risk factors in each of those domains, some of which Fergusson used to develop his model. The first four domains, described below, are comprised of exogenous suicide risk factors.

Table 1: Comparing Models of Suicide Risk Factors

Models	
(Beautrais, 2003)	(Fergusson et al., 2000)
*Genetic and biological factors	
*Social and demographic factors	Social background factors
*Childhood adversity	Family factors and childhood environment
*Personality traits and cognitive styles	Personality and individuals factors
**Exposure to stress and adversity	Stressful life events
**Mental health factors	Mental health factors

Taken from (Beautrais, 2003) and (Fergusson et al., 2000)

\* - proximal domains

\*\* - exogenous domains

### *Genetic and Biological Factors*

A family history of suicidal behavior is a strong predictor of suicidal behavior in young people. This has been studied using twin design studies and marker genes. Twin studies have revealed levels of heritability in which up to 45% of the variance in suicidal behavior may be explained by genetics (Statham et al., 1998). Marker gene studies have focused primarily on the serotenergic system, but many of these studies have yet to be replicated. It still remains to be concluded whether a genetic basis for suicidality exists or if suicidality is a result of inheritance of psychiatric disorders, reinforcing its exogenous relationship with suicidal thoughts and behavior (Beautrais, 2003).

### *Social and Demographic Factors*

Higher suicide rates exist for individuals from socially disadvantaged backgrounds evidenced by low socioeconomic status, limited educational achievement, low income, and poverty (Beautrais, 2003). Mental health and family functioning have also been found to play a mediating role in these education and income factors (Fergusson et al., 2000).

### *Childhood Adversity*

Instead of lumping family factors and childhood environment, like Fergusson (2000), Beautrais reviewed a large number of studies linking suicidal behavior with childhood adversity (Beautrais, 2003). Included in this list of specific adversities studied are: parental separation and divorce (Fergusson et al., 2003), parental psychopathology, parental or family discord, history of physical and/or sexual abuse during childhood, and impaired or neglected parenting (Beautrais, 2003). Additional research has been

suggested on the nature and frequency of adversity and how that impacts levels of suicidality later in life (Wagner, 1997).

### *Personality Traits and Cognitive Styles*

High scores on measures of neuroticism, hopelessness, introversion, impulsivity, low self-esteem, novelty seeking, restlessness, and risk taking have all been correlated with higher rates of suicidality (Fergusson et al., 2000). These personality traits have been hypothesized to be linked with suicide in two possible ways. First, they may be symptoms of a psychiatric disorder, like depression, which, as will be described below, is a mental health factor that Beautrais proposes to have a proximal influence on suicidal behavior. Second, personality traits may have an impact on how an individual reacts when exposed to a psychosocial stressor, a factor in the other domain that Beautrais proposed to have a proximal influence on suicide. For example, a person with high impulsivity may respond differently to an unexpected relationship loss than a person who has a lower level of impulsivity (Beautrais, 2003). The final two domains of risk factors are proximal.

### *Exposure to Stress and Adversity*

In the example just given, the unexpected loss of a relationship is an example of exposure to stress or adversity. Psychological autopsy studies have revealed that two-thirds of suicides have had stressful life events affiliated with the suicide (Beautrais, 2003). Research on exposure to stress, adversity or discrimination has been focused on three main areas: 1) adverse or stressful life events, 2) unemployment, and 3) sexual orientation.

Adverse or stressful life events have been parceled into two classes, namely 1) interpersonal losses and conflicts, and 2) legal, forensic, or disciplinary crises. Examples of interpersonal losses include bereavement and conflict with family, friends or partners, and an example of legal, forensic or disciplinary crises is being in trouble with the police. A higher number and intensity of stressors has also been suggested to be positively correlated with suicidal behavior in young people (Beautrais, 2003).

Regarding the other two main areas of this domain, unemployment and sexual orientation, research results have been suggestive but not conclusive. The correlation between unemployment and suicide has been suggested to be spurious, with research suggesting unemployment and increased risk of suicide being the result of other disadvantageous factors, like a depressed mood (Fergusson et al., 2001). Individuals who identify as gay, lesbian or bisexual have been shown to have higher rates of suicidality in several studies, but not all. Additionally, the impact of moderating variables like sampling, recruitment and age has been suggested to need further exploration before conclusions can be drawn (Doolin, 2009).

### *Mental Health Factors*

As discussed above, mood disorders, substance use disorders, antisocial behaviors and anxiety disorders all are linked with suicidal behavior in young people (Beautrais, 2003). Since a lot of these disorders begin in young adult years, it is particularly important to acknowledge their contribution to suicidality for college students, and this will be discussed in the next section.

### *Risk Factors for College Students*

To understand college student suicide risk factors, it is helpful to use a multilevel model, like Beautrais' (2003). While depression has been identified as the most common emotional state that has a clear link with college student suicide (Kisch et al., 2005), the amount that varying exogenous factors contribute to that depressed state is less clear. For example, in a study done by Westefeld (2005), 100% of college students who attempted suicide identified school stress, relationship issues, family problems, depression, and hopelessness as reasons for attempting suicide; and anxiety, financial problems and social isolation were endorsed by a vast majority of attempters. That study's contribution is focused on understanding the correlation of college students' emotions (i.e. depression, hopelessness, and anxiety) and situations (school stress, relationship issues, family problems, financial problems, and social isolation) with suicide attempts, but it leaves questions about whether emotions contributed to situations (ex. Does a student's depressed mood lead to relationship issues?) or vice versa (i.e. Do relationship issues contribute to a student's depressed mood?), and the likelihood that each of these might lead to suicidality. Additionally, the large number of depressed students that never consider or attempt suicide also makes the link between depression and suicidality less clear. To review the literature around both of these areas for college students, this section will first explore proximal risk factors, like depression, that predict college student suicidality, and then address exogenous risk factors that contribute to these proximal factors, but may also have a direct link to suicide.

*Proximal factors that contribute to college student suicidality*

Research has found that feeling depressed, helpless, hopeless, and lonely is not uncommon for college students, and these emotional states are often linked with college student suicidality (Brown et al., 2000; Stephenson et al., 2006; Westefeld & Furr, 1987). However, it has been difficult to predict suicide based on any of these emotional states, because correlations between any of them and suicide are relatively low. For example, one study found that 81% of college students experienced depression at some point in their college experience (Westefeld & Furr, 1987). However, in this same study, only 30% of students considered suicide and only 1% attempted suicide. Of the 1% who attempted, they almost unanimously reported feeling hopelessness, helplessness, loneliness, and depression. In research done using the results of the 2000 NCHA survey, Kisch (2005) explored how much students experienced various emotional states, and the amount these emotional states predicted suicidality. It was found that a higher percentage of students felt “hopeless” than students who felt “so depressed that they found it difficult to function.” However, students that found themselves so depressed that they found it difficult to function were much more likely to have suicidal thoughts and actions. One-third of students who felt so depressed they found it difficult to function seriously considered suicide, and less than one-quarter of students who felt hopeless on three or more occasions reported seriously considering suicide. Conversely, while many of the students who reported feeling depressed did not consider or attempt suicide, almost all students who considered or attempted suicidal reported feeling so depressed they could not function on at least one occasion during the last 12 months (94.9%). Maybe even more telling is that 78.3% of students who considered or attempted suicide reported

feeling so depressed they could not function on three or more occasions. These results clearly identify this factor (feeling so depressed that it was difficult to function, especially multiple times) as a serious suicide warning sign and a strong predictor of suicide (Kisch et al., 2005). In addition to mood disorders, like depression, studies have identified risk factors with a proximal relationship to suicide. Examples include: schizophrenia or psychosis, substance abuse or dependence, and personality disorders, as well as clinical and demographic risk factors, like previous psychiatric treatment, previous suicide attempts, and a family history of mental disorder. Males, and persons who are unemployed, widowed, or divorced also represent high risk groups. (Brown et al., 2000). A greater likelihood of suicidal ideation was found in those from disturbed families, with more poorly educated mothers, with liberal political views, and with a prior history of mental health treatment (Rudd, 1989). Additionally, one study found social problem solving to be a more useful predictor of suicide potential than hopelessness (Chang, 1998).

*Exogenous factors that contribute to depression and suicidality*

Other studies have shown a relationship between various factors and college student suicide, but also leave the question of whether the measured characteristic is directly linked with suicidality, or if the characteristic measured is linked with depression that leads to suicidality. Three studies will be reviewed to explore the relationship between these factors, depression and suicidality. One study by Westefeld (1987) had participants who experienced depression endorse any of a long list of contributing factors (e.g. 'money problems, legal problems, helplessness, etc.). In this same study a similar format was used to assess contributing factors to suicidality. Results showed that 81% of

college students experienced “depression” while in college, and contributing factors included: grade problems; relationship problems; loneliness, and money problems. In a ten-year follow-up study by Furr et al. (2001) the factors that contributed to student depression and suicidality were again explored. The most endorsed contributing factors to depression included: grade problems (53%), loneliness (51%), money problems (50%), and relationship problems with boyfriend/girlfriend (48%). The most endorsed contributing factors to suicidal ideation or behavior were quite different and included: hopelessness (49%), loneliness (47%) and helplessness (37%) (Furr et al., 2001;). Table 2 provides the results of these two studies. As can be seen, a much larger percentage of students reported depression in 1987 (81%) than in 2001 (53%). A large difference was also found in suicidal ideation and behavior, with 32% reporting suicidal ideation/behavior in 1987 and 8.5% in 2001.

Table 2: Contributing Factors to Depression, Suicidal Ideation and Suicidal Behavior

	Depression		Suicidal Ideation/Behavior	
	1987	2001	1987	2001
Year  (percentage of depression/suicidality)	1987  (81%)	2001  (53%)	1987  (32%)	2001  (8.5%)
Grade problems	57%	53%	24%	N/A*
Relationship problems with boyfriend/girlfriend	53%	48%	30%	27%



Loneliness	47%	51%	47%	47%
Money problems	43%	50%	14%	26%
Hopelessness	N/A*	26%	38%	49%
General, undefined depression	---	---	32%	26%
Parental Problems	N/A*	25%	22%	20%
Helplessness	N/A*	17%	27%	37%

\* – reflects results that were not given in publication (N/A), because they were not among the top contributing factors to depression or suicidal ideation/behavior

Table results taken from (Furr et al., 2001) and (Westefeld & Furr, 1987)

The four most common factors that were found to contribute to college student depression in 1987 remained in 2001 (grade problems, relationship problems with boyfriend/girlfriend, loneliness, and money problems). Regarding factors that contributed to suicide, there was less consistency between the findings. While loneliness and hopelessness were the most endorsed contributing factors, loneliness stayed consistent at 47%, but hopelessness rose from 38% in 1987 to 49% in 2001. Additionally, helplessness was a contributing factor that rose from 27% in 1987 to 37% in 2001.

While Furr (2001) did not propose explanations for these differences, results suggest that hopelessness and helplessness are factors that are becoming more linked with suicidality and should be researched further. Also noteworthy is that “general unspecified depression” was not the most reported factor linked with suicidality, as it has been found to be in other data (e.g. (Kisch et al., 2005). The authors did not directly address this, but

a couple of possible explanations exist. First, depression was an independent variable being studied, so the focus on it might have diffused some of the significance of it for respondents. Secondly, the way it was labeled (general, unspecified depression) might have led to some confusion about whether or not their mood fit that definition.

Data from the national study used for this dissertation measured many of the same variables as the studies by Furr et al. (2001) and Westefeld (1987) and is reviewed in Drum et al. (2009). Findings revealed that the three factors most related to students' suicidal ideation were: 1) wanting relief from emotional or physical pain, 2) problems with romantic relationships, and 3) the desire to end one's life. Additionally, family problems, problems with friends, and problems with academics were situational factors that were often rated as having a large impact on suicidal ideation. Emotionally, feelings of sadness, loneliness, and hopelessness were most frequently endorsed as moods college students experienced during periods of suicidal ideation (Drum et al., 2009).

Other examples of exogenous factors related to suicide are in the areas of sexual and physical victimization, substance abuse, sexual orientation, and ethnicity. In a study by Stevenson (2006), women's experience of sexual victimization and men's experience of being physically assaulted were both predictive of suicide. Other studies have revealed relationships between suicidality and being in an emotionally abusive relationship (Kisch et al., 2005), suffering from unspecified relationship problems (Meilman, Pattis, & KrausZeilmann, 1994) and being in a fight (Stephenson et al., 2006). Regarding substance use/abuse, chronic alcohol consumption by women in last 30 days has been found to predict suicidal ideation (Stephenson et al., 2006). Also, the NCHRBS found that of the 10% of students that had seriously considered suicide during the last 12

months, those students were also at increased odds of using tobacco, alcohol and illegal drugs (Barrios, Everett, Simon, & Brener, 2000). Another study found a similar link between drug and alcohol consumption and increase suicidality, and identified that substance use often exacerbated depressive states (Brener et al., 1999). Regarding sexual orientation, the study by Kisch (2005), using the 2000 NCHA survey, found that being gay, lesbian, transgender, or bisexual increased the likelihood of being suicidal by a factor of 2.6. In that same study, Asian college students were found to be 1.59 times more likely than Caucasians to seriously consider suicide (Kisch et al., 2005).

In summary, research suggests that the proximal risk factors most connected with college student suicidal ideation and behavior are depression, loneliness, hopelessness, and helplessness (Furr et al., 2001; Kisch et al., 2005). Additionally, there are an abundance of exogenous risk factors that have also been shown to have a relationship with suicidality. However, the impact that exogenous factors have on proximal factors and suicidality remains unclear and needs further study. Consequently, it seems logical to suggest that helping college students identify methods to reduce exogenous and proximal factors would also reduce the likelihood of suicide. That is where protective factors come into play.

#### *Protective Factors*

Compared to risk factors, not nearly as much research has been done about factors that mitigate risk factors, namely *protective factors*. Researchers have viewed and studied protective factors in three ways. First, research has studied variables that distinguish suicidal and non-suicidal individuals by comparing individuals who have suicide risk factors with individuals who do not. Second, variables that increase resilience toward suicidality have been studied as protective factors. The third approach of protective factor

research has been to study situational and environmental factors that lower a person's likelihood of becoming suicidal, and specific protective characteristics of colleges have been identified. This section will explore each of these areas.

The first area of research on protective factors has focused on constructs that have consistently been shown to distinguish suicidal individuals from non-suicidal individuals. In a study referenced earlier, the following factors were found to either mitigate or exacerbate risks of suicidal behavior among depressed young people: a family history of suicidal behavior, childhood sexual abuse, neuroticism, novelty-seeking, self-esteem, and peer affiliations (Fergusson et al., 2003). In other words, subjects who positively endorsed these areas (e.g. no family history of suicidal behavior) were more likely to have resilience to suicide attempts, and subjects who negatively endorsed these areas (e.g. had a family history of suicidal behavior) were less likely to attempt suicide. In another study, five constructs were consistently shown to differentiate between suicidal and non-suicidal groups, and included impulsivity/aggression, depression, hopelessness, anxiety, and self-consciousness/social disengagement (Conner, Duberstein, Conwell, Seidlitz, & Caine, 2001). As can be seen in both studies, most of these factors were discussed as risk factors earlier in the chapter, highlighting that lack of each of these risk factors often lead to a reduced likelihood of an individual becoming suicidal.

The second way researchers have studied protective factors is by looking at what makes an individual resilient to considering or attempting suicide, and is primarily related to the emotional stability and interpersonal skills of an individual. The list of factors that have been shown to increase resiliency toward suicide include: adaptable temperament; internal locus of control; good self-esteem, self-image, self-confidence, and self-efficacy;

good problems-solving skills; good social support and social networks; a good emotional relationship with at least one person in the family; positive school experiences; and spiritual faith (Beautrais, 2003; Clum and Lerner, 1990; Dervic et al., 2004; Ellis & Lamis, 2007). Interestingly, many of these protective factors have been shown to exist cross-culturally (Borowsky et al., 2001; Colucci & Martin, 2007). As stated above, some of these 'resilience' protective factors also can be viewed as a lack of suicide risk factors (e.g. good social support versus lack of social support). However, this avenue of research is less focused on proximal suicide factors than the first and more focused on how exogenous factors reduce suicide risk.

The third focus area for suicide protective factors is on situational and environmental factors, many of which are related to college environments. Westefeld (2006) suggested several suicide protective factors specifically for college students: reasons for living; social support; and no-harm contracts. Other literature has suggested several practical protective factors already exist on a majority of college campuses, likely contributing to the lower rate of suicide on college campuses compared to the general population. Examples include, more readily available no or low cost health and mental health services on campus; a more supportive peer and mentor environment than is found in the general community, campus prohibitions on availability of firearms; tighter campus monitoring of alcohol use; a clearer sense of purpose among college students; and the relative freedom students enjoy from the daily hassles of living that occur in nonacademic settings (Haas et al., 2003). While a majority of this research is speculative, some data has provided evidence that supports these claims, like the lower levels of suicidality for married students compared to non-married students (Kisch et al., 2005).

### *Prevention Related to Risk and Protective Factors*

To prevent suicide colleges need to make students more aware of mental health services and get students who are suffering from mental health concerns linked with these services. One study found that only 26% of students were aware of services available to help with suicide (Westefeld et al., 2005), while another found that less than 20% of students reporting suicidal ideation or having attempted suicide were receiving treatment (Kisch et al., 2005). The National Survey of Counseling Center Directors (2003) revealed that of the 160 students who reportedly committed suicide, only 31 were current or former counseling center clients. Given that students are much more likely to talk with their peers about their suicidality than faculty or staff (Drum et al., 2009), it makes comprehensive communication about student services important.

### *Religion and Suicide*

It has been discovered that adolescents and young adults who find the act of ending one's life acceptable are fourteen times more likely to make a plan to kill themselves than those who do not have those beliefs (Joe, Romer, & Jamieson, 2007). This statistic, and the proclamation of most religious faiths that suicide is unacceptable, provides an example of religion's relationship with suicide, the focus of this section. It will begin by sharing a brief historical review of religion's relationship with suicide, followed by information on suicide prevalence as it relates to religion. More detail will then be shared regarding how religion functions as a protective factor and/or risk factor for suicide. Finally, the section will conclude by identifying limitations of how we are currently able to understand religion and suicide.

### *History of Religion's View of Suicide*

Religion has been more or less involved in defining suicide as acceptable or not for centuries. For example, in early Christianity, killing oneself was not condemned. However, in the fourth century, Augustine, a Christian, defined killing oneself as a sin and a crime, and that belief was subsequently supported by others. For example, Aquinas “condemned suicide for three reasons: 1) it was contrary to the sanctity of life, 2) it was a trespass against the community, and 3) it was a sin against God.” (Chamberlain & Hall, 2000, p. 171) The term ‘suicide’ didn’t come into use until the middle of the 17<sup>th</sup> century (Chamberlain & Hall, 2000), likely coming from the Latin roots, but those roots are not clear, and a single Latin word for suicide does not exist (Evans & Farberow, 2003). It was not until the eighteenth and early nineteenth centuries that authors started describing suicide as an illness and not a crime against God (Hume, 1929 (Original Work published in 1783); Merian, 1763).

Historically, the acceptability of suicide has been complicated by discrepancies between church and state and the range of motivations for suicide. For example, there is a long history of *altruistic suicide* – a person giving up one’s life for the greater good of others – and the accompanying debate about whether or not altruistic suicide should be considered morally and/or legally acceptable (Stillion & McDowell, 1996). Examples are found in various cultural groups, including Eskimos, Crow Indians, and Samoans. In these cultures, it is not uncommon for elders who felt their contributions to the tribe had become outweighed by the burden of their care, so they would choose to end their life. Less related to age, altruistic suicide has also occurred on the battlefields of numerous

wars. The other extreme of altruistic suicide is suicide bombings, often viewed as a testament to one's faith.

### *Religion and Suicide Prevalence*

Research on how religion impacts suicide prevalence has happened internationally, nationally and even at the college level. Overall, affiliating with a religious faith has been found to be negatively correlated with suicide rates (Martin, 1984). Stack (1986) has made a related point that overall declining religiosity may contribute to increased suicidal risk.

A study done in Ireland in 2003 compared national suicide rates with the results of a national suicide study conducted the same year and revealed three primary findings (Clarke, Bannon, & Denihan, 2003). First, urban dwellers were less religious and had lower rates of suicide than rural dwellers. Second, females had lower rates of suicide and were more religious in terms of practice and belief. Third, suicide levels were highest in the age group that was least religious. Similarly, a study in the United States found a strong correlation between an individual's faith in God and that person's moral objections to suicide (Ellison & Smith, 1991). In slightly different ways, both studies suggest that religious faith in God is positively correlated with a moral objection to suicide.

College students who are less committed to religion are more likely to consider suicide, and the stronger the religious commitment (measured by frequency of church attendance and reported strength of attachment) the less likely they are to consider suicide as morally acceptable for other people or themselves (Minear & Brush, 1981). Of students who affirmed a religious commitment, Catholics were least supportive of suicide as an option, Jewish the most, and Protestants in between. In another study, 35% of



nonreligious respondents viewed suicide as morally acceptable, versus 14 percent of Protestants and 13 percent of Catholics (Shagle & Barber, 1995). Conversely, students who identified themselves as atheist or agnostic had the most liberal and accepting attitudes toward suicide (Minear & Brush, 1981)

### *Religion's Relation to Protective Factors*

Most suicide prevalence literature supports religion as a protective factor for suicidality. So, the next question becomes 'What is it about religion that makes it a protective factor?' Authors have found varying mediators between religion and suicide. Culture has been shown to influence suicidal behavior (Lester, 1997a; Lester, 1997b), suggesting that some cultures (and their accompanying spiritual/religious beliefs) are more or less open to the acceptability of suicidality. Other authors have found more specific links between religion and social well-being, citing the potential benefits of religion as a coping mechanism for life difficulties like drug abuse, divorce, physical illness, depression and suicide (Exline et al., 2000). Finally, another study found social support to be a major function of religious involvement for many people (Ellison & George, 1994).

One study of depressed inpatients explored the link between religious affiliation and suicide in a slightly different manner. Instead of asking what it is about religion that makes it a protective factor, the study explored *what it is about religious people that reinforces protective factors? And what it is about non-religious people that reinforces risk factors* (Dervic et al., 2004)? One of the findings was that religious affiliation may affect suicidal behavior by lowering aggression levels. Additionally, using the Reasons for Living Inventory to measure level of moral objection to suicide, moral objection to

suicide was found to be positively correlated with religious affiliation. People who did not affiliate with a religious faith were found to be younger, less often married, less often had children, and had less contact with family members. They perceived fewer reasons for living – particularly less moral objection to suicide. Religiously unaffiliated subjects had more lifetime impulsivity, aggression, and past substance abuse, but no difference in religious affiliation was found in measures of depression, hopelessness, or stressful life events. Overall, the authors suggest two factors that are possibly influencing the negative relationship between religion and suicide: 1) integrative benefits of connecting with others, and/or 2) moral imperatives of religious belief (Dervic et al., 2004).

In a study exploring how different levels of religiosity relate to suicide, orthodoxy emerged as the only religious variable that related to perceived risk of suicide (Greening & Stoppelbein, 2002). The negative correlation between orthodoxy and suicide was not surprising, but not finding a similar link between intrinsic religiosity (internalizing religious beliefs) and suicide was unexpected. The only explanation offered for these results was that the average age for the adolescents in this study was 15.9 years old, and that age may have impacted their spiritual development and accompanying intrinsic religiosity.

#### *Religion's Relation to Risk Factors*

While religious affiliation has been found to be a protective factor for suicide, some research has also found religion to be a suicide risk factor. One clear example is in apocalyptic suicide – “mass suicides among members of religious cults” (Spilka, 2003, p 231). Examples of these include the Jonestown People's Temple, the Branch Davidians, and Heaven's Gate. Efforts to understand these mass suicides have focused on

personality characteristics of the leaders and the members (Spilka, 2003). Other research exploring how religious affiliation serves as a risk factor has studied the emotional impact of changing religious values. One study looked at how Christian and Pagan missionaries have worked among Native American people to convert them to their respective belief systems (EchoHawk, 1997). Following conversion of some Native Americans to Christianity or Paganism, the resulting dissonance among Native American people, seen in examples like marital conflict and lack of acceptance of others, created widespread conflict, and sometimes emotional instability. Suicidality is more accepted in Native American spirituality, so this was proposed by the authors as a way to deal with some of the conflict and dissonance. Another study, which was focused on college students, indicated that, regardless of religiosity levels or the degree of comfort found in religion, religious strain was found to be associated with greater depression and suicidality (Exline et al., 2000). Specifically, with students, suicidality was associated with religious fear and guilt, especially in situations where an unforgivable sin was committed.

#### *Limitations of Research on Suicide and Religion*

Religion has been seen as a protective factor for suicide for decades, if not centuries. However, with an increased understanding of suicide risk and protective factors has come a more critical evaluation of those risk and protective factors that serve as moderating variables for suicidality. For example, research has made a strong case for social support as a significant moderating variable of religious involvement for many people (Ellison & George, 1994), but understanding the way sociocultural factors influence suicide is limited (Leach, 2006).

Research studies have measured 'religious affiliation' in varying ways. In some studies it has been measured continuously via strength of affiliation (Burdette, Hill, & Moulton, 2005); in others it has been measured via church attendance (Burdette et al., 2005); or via an endorsement of faith affiliation (Drum et al., 2009). In addition to the inconsistency of methods of acquiring this data, it is also noteworthy that a large number of significant research studies on college student suicide have either not included religious affiliation as a variable or not reported it in the results (Brown et al., 2000; Kisch et al., 2005; Rudd, 1989; Schwartz, 2006a).

#### Campus Activity Involvement and Suicidality

In addition to social support being a major factor in the relationship between religious involvement and suicidality (C. G. Ellison & George, 1994), the link between social support and activity involvement has also been shown to be an independent variable linked to suicidality (Greening & Stoppelbein, 2002; Mazza & Eggert, 2001). Previous research has shown that when social support was increased in prevention interventions, levels of depression and suicide risk behaviors decreased (Eggert, Thompson, Herting, & Nicholas, 1995). However, this is one of few studies that has explored this relationship, and no prior research was found that studied the impact of social support for college students using activity involvement as a measure. Specifically, the current study will explore the relationship between participation in campus activities and suicidality.

In the study by Mazza and Eggert (2001) high school students were studied to see how suicidality correlated with activity involvement. The study compared weekly activity levels among four groups of high-risk and typical high school students: 1) potential

dropouts at suicide risk, 2) typical youth at suicide risk, 3) potential dropouts not at suicide risk, and 4) typical youth not at suicide risk. Results showed that students who were at risk for suicide, regardless of dropout status, engaged in more solitary activities, like watching TV, being alone, or having nothing to do, than students who were not at risk for suicide. This finding concerned the authors because solitary activities are difficult to identify in high school students. For college students, solitary activities would likely be at least as difficult to identify, because college students have more of an opportunity to isolate. One surprising finding from the study was that students who were both at risk for suicidal behavior and school dropout reported significantly higher levels of social activity.

Greening and Stoppelbein (2002) studied social support and also found a significant negative relationship between that and suicidality. However, the measure of social support used for the study included two scales that assessed for perceived support from friends and family. The scales did not include a direct measure of support through activity involvement. Results of this study revealed that suicide risk was significantly lower with perceived family support, but not with perceived friend support, and the authors speculated that family might provide a more stable and effective source of support.

The importance of social support regarding suicidality is also highlighted in Thomas Joiner's theory of suicide (2005). The three necessary characteristics that Joiner believes contribute to suicide are perceived burdensomeness, failed belongingness, and the ability to enact lethal self-injury. Two of these characteristics, perceived burdensomeness and failed belongingness, are directly related to an individual's need for

social support. Perceived burdensomeness reflects a belief that a person's existence is more of a negative contribution to others than a positive. Failed belongingness is a perception about not having adequate social connections and lacking hope for strengthening one's social connections. For this study involvement in campus activities is proposed to represent social connectedness.

### Institutional Secularity and Suicidality

While the above section on campus activity involvement explored the relationship between suicidality and an individual's participation in an activity on the campus, this section will explore research about the relationship between the secularity of a campus and student suicidality. This relationship between institutional secularity and suicidal ideation and attempts also has a limited body of related previous research, all of which studied high school aged students.

One suicide study comparing public and parochial high schools came the closest to paralleling hypotheses of the current paper, exploring student suicidality rates at secular vs non-secular high schools. The study compared the attitudes toward suicide of public high school students to parochial high school students (Greening & Dollinger, 1993). Students at parochial schools were found to have lower perceived risk of suicide. From these results, the authors suggested that ties to a religious community may influence perceptions and attitudes about suicide. The religious affiliation of students was not assessed.

Three other studies focused on the impact of school relations, namely how positive or negative the school climate was for students (e.g. enjoyment of school and a perception of supportive relationships with teachers). Two of the studies found a lack of a

positive school climate to contribute to increased suicidality in students (Kandel, Raveis, & Davies, 1991; Perkins & Hartless, 2002). The third study found that when boys who had attempted suicide were struggling in their relationships with their peers, school relationships augmented the positive effects of their relationship with their parents (Kidd et al., 2006). In other words, positive relationships with parents and schools served as a protective factor against suicide for boys who were struggling in their relationships with peers.

## CHAPTER 3: METHOD

### National Study and Survey

This study utilized a subset of archival data from the Study on the Nature of College Student Suicidal Behavior conducted by the National Research Consortium of Counseling Centers in Higher Education. The title of the 2005 research study was *Suicidal Thoughts and Behavior among Undergraduate and Graduate Students in the United States* and was conducted by Dr. Chris Brownson, Dr. David Drum, and Dr. Shanna Smith at the University of Texas – Austin. In this chapter an overview of the National Study and National Survey will be given, followed by a description of the subset of data and participants utilized in this study. The methods used to analyze the data will also be briefly discussed.

#### *Description of the National Study*

This section highlights the goals, instrument, format, procedure, and participants of the National Study. For a more thorough description of the study, see the research proposal in Appendix A.

#### *Study Goals*

The National Study addressed three goals. The first goal was to better understand students' experiences during a suicidal crisis. This information was intended to guide institutions toward more effective prevention and response for students entering and proceeding along the continuum of suicidality. The second goal of the study was to learn more about students' help seeking behavior. These results were intended to help colleges identify students in crisis, and develop prevention programs that effectively reach those students. The third goal of the study was to gain a better understanding of the



psychological and situational factors associated with suicidal ideation and attempts. This goal was intended to identify typologies of students in these crises, and subsequently develop more effective procedures that counseling centers could use to meet the varying needs of college students.

The research proposal (see Appendix A) cited the rationale for study as a means of “seeking detailed information about the *nature, course, and subjective experience* of college students’ suicidal crises” (p. 2 – research proposal). The researchers also identified the lack of direction research has provided counseling centers in prevention and early intervention efforts offered to at-risk college students who are counseling center clients. The proposed sampling for the study (i.e. over 100 higher education institutions with a combined enrollment of nearly 2 million students) was also intended to improve the understanding of psychological and social factors that surround suicidal situations on college campuses.

#### *Instrument*

The instrument used to collect data for the National Survey was designed by Dr. Chris Brownson, in conjunction with Dr. David Drum and Dr. Shanna Smith. Items on the questionnaire were reviewed by the consortium of directors from each participating college counseling center, as well as by two suicide research experts, Dr. David Rudd and Dr. Allan Schwartz. For a listing of all of the questions on the National Survey see Appendix B. The National Survey is a self-report measure and is not standardized. Therefore, the reliability and validity of the measure have not been established.

*Format*

The National Survey was given as an online questionnaire regarding factors related to suicidal thoughts and behavior among undergraduate and graduate students in the United States. The first section of the survey acquired demographic information of participants. The next area asked questions about death and suicide. Students who positively endorsed having suicidal ideation in the last 12 months (question #29 – see Appendix B) were asked to answer another subset of questions related to help seeking behavior and utilization of campus support services. Additionally, students who positively endorsed the National Survey question indicating a suicide attempt in the last 12 months (question #62) were asked to complete a similar subsection of questions about help seeking behavior and utilization of campus support services.

*Procedure*

A national network of college and university counseling centers were invited to participate in the National Study on the American University College Counseling Center Directors' (AUCCCD) list-serve. One hundred nine colleges initially signed up and 70 ultimately participated. Once an institution agreed to participate in the National Study, a principal investigator was asked to serve as a coordinator for her or his campus. The principal investigator helped with research compliance (e.g. selecting a random sample), and participation in other procedures necessary to support the research project. Principal investigators worked with the appropriate office (usually the Registrar's Office) at their institution to acquire a list of currently enrolled students over the age of 18. The number of participants selected from each institution was based on undergraduate and graduate student enrollment, and was intended to allow for individual campus-level analyses. For

campuses with more than 5000 undergraduates, 1000 were randomly selected; for campuses with between 500-4,999 undergraduates, 500 were randomly selected; for those with enrollments of fewer than 500, all students were selected. All participants were randomly selected and received an email from their local college counseling center containing information about the National Study (see Appendix C for an example of this email invitation). If students did not click on the link to participate, up to three follow-up invitations were sent as recruitment reminders. Incentives to participate in the study included one of 100 \$25 gift certificates from Amazon.com, as well as three top prizes of \$1000, \$750, and \$500 gift certificates from Amazon.com.

Students that chose to participate were directed to a consent form for the study (see Appendix D). Students that consented to the study were given the opportunity to withdraw from the study via a link at the bottom of each webpage of the study. Students who withdrew, as well as students who completed the study, were directed to a webpage that contained information about their local college counseling center, as well as local resources that might be helpful for students dealing with mental health concerns, including suicidal ideation.

### *Participants*

The National Survey was emailed to approximately 108,500 students from 70 participating U.S. colleges and universities. The response rate for undergraduate students was 24% (14,839/62,000) and for graduates was 25% (11,618/46,536).

## Current Study

### *Participants*

The National Study dataset is comprised of both undergraduate and graduate student participants. The undergraduate subset of data used for this study consisted of 15,010 students from 70 colleges and universities across the United States of America. Of the total students in this subset, a small percentage identified as non-degree seeking, graduate, law or medical students. These participants were likely erroneously linked to the wrong survey at their higher education institution and will be excluded from this study. To control for educational level, social influence and age, the current study only used subjects who classified themselves as undergraduate and were 18 to 24 years of age.

Regarding religious affiliation, one of the research goals of this study was to explore differences in suicidality between individuals who identify as ‘secular’ versus individuals who identify as ‘Christians.’ To achieve this goal the ‘Christians’ classification for this study is simply comprised of subjects who endorsed ‘Christian’ on the National Survey question inquiring about religious affiliation (questions #13). Of the eleven potential responses for this survey question, subjects who endorsed any of the other responses that could also be viewed as ‘non-secular’ (i.e. Buddhist, Hindu, Islamic, Jewish, Native American Religion and Unitarian/Universalist) were not included in this study’s dataset because of the confounding effects of trying to interpret results from non-secular faiths that are from distinct cultures (i.e. Eastern, Western, Native American). Using the same rationale, only subjects who identified themselves as Atheist, Agnostic, or Non-religious/Secular were included in this study to represent ‘secular’ participants. The data from this survey question will be recoded into a new ‘individual secularity’

variable, with the value '1' representing Christians (including all subjects who identified themselves as Christian) and the value '2' representing secular (including all subjects who identified as Atheist, Agnostic, Non-religious/Secular). Subjects who identified with any of the other potential responses for this question were not included in the dataset used for this study.

### *Study Variables*

This study focused on several variables in the National Survey related to suicidality, religion, and participation in campus activities. These variables are categorized as dependent or independent and described below.

#### *Dependent Variables*

*Suicidal ideation.* This dichotomous variable is based on question 29 of the National Survey, which reads, "During the past 12 months, have you seriously considered attempting suicide?" The response format for this question was 'yes' or 'no.'

*Suicidal Ideation Continuous.* This continuous variable is based on question 25 of the National Survey, which reads, "Which phrase best describes you?" Possible responses included: 1 = "I have had some type of suicidal thought on a regular basis for several years," 2 = "I have repetitive episodes of suicidal thoughts with periods in between of no suicidal thoughts at all," 3 = "I have had a few discrete periods in my life of having suicidal thoughts," 4 = "I have only had one period in my life of having suicidal thoughts," and 5 = "I have never had suicidal thoughts." Participants selected from these possible responses.

*Suicide attempt.* This dichotomous variable is based on question 62 of the National Survey. It reads, “Have you *attempted* suicide within the last 12 months?” The response format for this question was ‘yes’ or ‘no.’

#### *Independent Variables*

*Individual religious affiliation.* This nominal variable is based on question 13 of the National Survey. Participants were asked to select from 11 possible responses. This variable was recoded into a dichotomous *individual secularity* variable. Participants from this data subset who endorsed Christian were categorized as Christians, and participants who endorsed Agnostic, Atheist, or non-religious/secular will be categorized as secular.

*Institutional secularity.* This dichotomous variable is based on whether or not the higher education institution the participant attends is affiliated with a Christian faith. This variable is not an item in the survey and was identified by researching the participating institutions. An *institutional secularity* variable was added to all data records. Participants from those institutions that affiliate with a Christian faith had this variable coded Christian schools. Participants from an institution that does not affiliate with a religious faith had the institutional secularity variable coded secular schools.

*Campus activities.* This variable is based on question 11 of the National Survey, and asked participants to identify activities in which they participate and/or lead. The 13 possible campus activities participants could endorse were: educational/departmental organizations, fraternity/sorority – service, fraternity/sorority – social, honorary organizations, international/ethnic/cultural organizations, intramural/club sports, political/social-action organizations, professional organizations, religious organizations, service organizations (other than fraternity/sorority), social organizations (other than

fraternity/sorority), student government organizations, and varsity athletic teams. This study will recode participation responses into a dichotomous 'student activities' variable. Participants who endorsed participation and/or leadership in at least one of the student activities were recoded to '1', and students who did not participate or lead any of the activities were recoded to '0'.

### *Data Analysis*

#### *Preliminary analysis*

The main analyses used for this study were chi-square, ANOVA, and logit regression. For all dependent variables the normalcy of data was tested to satisfy the assumptions of an ANOVA by using the Kolmogorov-Smirnov test. Additionally, Levene's Test of Equality of Error Variances was used to confirm that the data meet the homogeneity of variance assumption. Because the dataset is large, the Cramer's V was selected to measure effect size related to the chi-square analyses. Cramer's V estimates also allow for an assessment of the degree of relationship between variables. Effects of demographic variables on dependent variables were also analyzed. A chi-square was used to analyze the relation between the dichotomous demographic variables of gender and year-in-college with the dependent variables of suicidal ideation and suicide attempt. Because age is a continuous demographic variable, a Spearman-Rho was used to analyze its effect on the dependent variables.

#### *Main analysis*

Three types of analyses were used to analyze the data related to the hypotheses of the study. The first six hypotheses explored the relationship between dichotomous variables, namely the relationship between individual secularity and suicidal ideation or

suicide attempts; the relationship between institutional secularity and suicidal ideation and suicide attempts; and the relationship between campus activity involvement and suicidal ideation and suicide attempts. Therefore, a chi-square test of independence was selected as the most appropriate analysis. Second, a logit regression was used to measure the amount each independent variable (i.e. individual secularity, institutional secularity and involvement in campus activities) predicted the dichotomous dependent variables of suicidal ideation and suicide attempts. Finally, a 3-way factorial analysis of variance (ANOVA) was used as the third type of analysis. This method explored main and interaction effects between the independent variables (i.e. individual secularity, institutional secularity, and involvement in campus activities) as they relate to a continuous measure of suicidal ideation (question #25 in the National Survey). Even though this variable measures suicidality over a person's lifetime versus the last 12 months, this analysis complimented the logit regression by analyzing the impact of the same independent variables on suicidal ideation. In addition to this analysis being able to access how the independent variables influenced the dependent variables, it also assessed how the independent variables interacted with one another.



## CHAPTER 4: RESULTS

This chapter will address the results of the study, beginning with an explanation of the  $p$  value used as the standard for significance, followed by participant demographic information, then internal consistency estimates, and concluding with the results of the analyses based on this study's eight research hypotheses.

### Significance of Findings

For this study a more liberal  $p$  value of .05 was selected as the standard to accept significant results for the following three reasons. First, this study explored variables and relationships that have limited or no previous research, so setting a liberal  $p$  value allowed for sensitivity to new findings that were important for this exploratory research. Second, many of the dependent variables used for this study's analysis are dichotomous, so restriction of range becomes an issue. Seriously considering suicide and suicide attempts in the last 12 months are both measured via 'yes' or 'no' responses. Because these responses do not represent a full range of possible values, a more liberal  $p$  value was selected to support the exploratory nature of this study (Gravetter & Wallnau, 2004). Additionally, a continuous measure of suicidal ideation will be used to provide some validity to findings, but it is important to note that this continuous measure of suicidal ideation was over a lifetime versus 12 months, and there is question about the equality of intervals between response options. Therefore, findings should be interpreted with caution. The third reason for the selection of a liberal  $p$  value was that while the overall sample size is large ( $n=11,075$ ), the number of subjects who seriously considered suicide in the last twelve months ( $n=662$ ) and the number that attempted suicide ( $n=98$ ) was relatively small. Therefore, using a more liberal  $p$  value increases the likelihood of a

Type I error but supports the exploratory nature of this study. A Type I error occurs when a statistically significant relationship was concluded, but in fact no relationship exists (Gravetter & Wallnau, 2004).

### Demographic Information

As stated previously, this study used a subset of archival data from the Study on the Nature of College Student Suicidal Behavior conducted by the National Research Consortium of Counseling Centers in Higher Education. The original sample of undergraduate participants consisted of 15,010 subjects from 70 colleges and universities across the United States of America. To control for educational level, age and social influence, the current study only used data from undergraduate subjects between the ages of 18 and 24.

One of the main factors this study focused on was religious affiliation, a variable for which eleven potential responses were available for study participants. Most subjects were Christian, and a complete breakdown of the frequency and percentage of each religious affiliation is provided in Table 3.

Table 3: Religious Affiliation (of all undergraduate students in the National Study)

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Religious Faith	Frequency	Percentage
*Agnostic	1216	8.84
*Atheist	570	3.83
Buddhist	133	0.89
*Christian	9,796	65.83
Hindu	124	0.83

Islamic	150	1.01
Jewish	409	2.75
Native American Religion	23	0.15
*Non-religious/Secular	1,148	7.71
Unitarian/Universalist	120	0.81
Other	1,092	7.34

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\* - used for this study

As indicated by the asterisk (\*) in Table 3, only subjects who identified as Christian, Atheist, Agnostic, and Non-religious/Secular were used for this study. This was done to clearly delineate between Christian and non-religious groups. A new individual secularity variable was created. All subjects who identified as Christian were recoded to *Christians* and all subjects who identified as Atheist, Agnostic, and Non-religious/secular were recoded to *secular*. Table 4 shows the number and percentage of students who comprised the recoded individual secularity variable, derived from participants who fit secular and non-secular criteria, as defined above. Using data only from subjects who fit individual secularity criteria, and controlling for educational level (only undergraduate students), age (18-24 years old), and social influence, the number of subjects for the study was reduced to 11,075.

Table 4: Individual Secularity Frequencies

Secularity	Religious Faith	Frequency	Percentage
Non-secular		8456	76.4%
	Christian	8456	76.4%
Secular		2619	23.6%

Agnostic	1162	10.5%
Atheist	500	4.5%
Non-religious/secular	957	8.6%

Demographic information regarding gender, sexual orientation, race/ethnicity, age, and year-in-college is reported in Table 5. As can be seen in this table, most study participants were female (62.5%), heterosexual (95.2%) and Caucasian (81.2%). The mean age of students was 20.24 ( $SD = 1.53$ ) and the median was 20. Year-in-college of students was equally distributed.

Table 5: Demographic Information of Sample

	<u>n</u>	Percentage
<b>Gender</b>		
Female	6924	(62.5%)
Male	4151	(37.5%)
<b>Sexual Orientation</b>		
Bisexual	224	(2%)
Gay/Lesbian	163	(1.5%)
Heterosexual	10,540	(95.2%)
Questioning	125	(1.1%)
Missing	23	(0.2%)
<b>Race/Ethnicity</b>		
African American/Black	417	(3.8%)
Alaskan Native/American Indian	31	(0.3%)

Asian American	548	(4.9%)
Caucasian/White	8998	(81.2%)
Hispanic American/Latino	485	(4.4%)
International/Foreign Student	151	(1.4%)
Multiracial	419	(3.8%)
<hr/>		
Age		
18	1433	(12.9%)
19	2592	(23.4%)
20	2472	(22.3%)
21	2293	(20.7%)
22	1405	(12.7%)
23	568	(5.1%)
24	312	(2.8%)
<hr/>		
Year in School		
Freshmen	2738	(24.7%)
Sophomore	2641	(23.8%)
Junior	2802	(25.3%)
Senior	2894	(26.1%)
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#### Frequency of Suicidality

In the last 12 months 662 (6%) of undergraduate students seriously considered suicide and 98 (0.9%) attempted suicide in this same time period.

### Suicidality Relationship with Gender and Year-in-College

A chi-square test of independence was used to explore the relationship between the demographic variables of gender and year-in-college with the dependent variables of suicidal ideation and suicide attempts in the last 12 months. A significant relationship was found between suicidal ideation in the last twelve months and gender,  $X^2(1)=11.303$ ,  $p<.01$ ,  $V=.032$ . These results are seen in Table 6, and show that females reported suicidal ideation significantly more often than males. For exploratory purposes a separate analysis will be run for men and women to allow for the independent variables to be evaluated in isolation for the three hypotheses with suicidal ideation as the dependent variable (hypotheses 1, 3, and 5). No significant relationship was found between subjects who reported attempting suicide in the last twelve months and gender,  $X^2(1)=.382$ ,  $p>.05$ ,  $V=.024$ , so separate analysis for men and women will not be run for the three hypotheses with suicide attempts as the dependent variable (hypotheses 2, 4, and 6).

Table 6: Summary of Chi-square Correlations between Gender and Suicidal Ideation

		Suicidal Ideation last 12 Months			
Gender		Suicidal	Non suicidal	Total	Chi-square
Female	Count	453	6338	6791	<.01
	Expected	412.4	6378.6	6791	
Count					
Male	Count	209	3902	4111	

	Expected	249.6	3861.4	4111
	Count			
Total	Count	642	10240	10902

No significant relationship was found between suicidal ideation in the last twelve months and year-in-college,  $X^2(3)=5.156, p>.05, V=.022$ . This result indicated that no significant difference existed in rates of suicidal ideation between freshmen, sophomores, juniors, and seniors. Additionally, no significant relationships were found between subjects who reported suicide attempts in the last twelve months and year-in-college,  $X^2(3)=4.559, p>.05, V=.084$ . These results indicate no significant differences in rates of suicide attempts between freshmen, sophomores, juniors, and seniors.

#### Testing the Assumptions of the Analyses

Before performing analyses of the hypotheses, tests of normalcy and homogeneity of variance were conducted for each of the dependent variables. For the dependent variables of suicidal ideation and suicide attempts, the normalcy of data was tested using the Kolmogorov-Smirnov test. The results for both variables were significant -  $Z=56.334, p<.01$  for seriously considering suicide in the last 12 months; and  $Z=13.100, p<.01$  for making at least one suicide attempt in the last 12 months - indicating that the data is not normally distributed. To try to achieve normal distribution the variables were transformed by taking the square and the square root of each of the dependent variables and rerunning the Kolmogorov-Smirnov test. The results were still significant using these transformed variables, so the original values were used for analysis (Howell, 2002).

Additionally, Levene's Test of Equality of Error Variances was used to confirm that the data met the homogeneity of variance assumption. Levene's Test for Equality of Error Variance was significant,  $F(7,10794)=25.326, p<.01$ , indicating that the error variances of suicidal ideation across institutional secularity, individual secularity and activity involvement were heterogeneous, so results of the 3-way ANOVA (i.e. testing hypothesis 7) should be interpreted with caution.

### *Study Hypotheses*

#### *Hypotheses 1 & 2:*

The first hypothesis of this study is that Christian students are less likely than secular students (Agnostic, Atheist, and Non-religious/Secular) to have seriously considered suicide in the last 12 months. Using a chi-square test of independence, religious affiliation was found to be significantly correlated with suicidal ideation,  $X^2(1)=53.545, p<.01, V=.070$ . As can be seen in Table 7, secular students were more likely to have suicidal ideation in the last twelve months than Christian students. Separate analyses were run to see if gender differences existed. Individual secularity was found to be significantly correlated with suicidal ideation for men,  $X^2(1)=17.213, p<.01, V=.065$ , and women,  $X^2(1)=41.126, p<.01, V=.078$ . The results of these separate analyses for men and women show that individually, men and women who affiliate with a Christian faith are less likely to consider suicide.



Table 7: Summary of Chi-square Correlations between Individual Secularity and Suicidal Ideation

		Suicidal Ideation last 12 Months			
		Suicidal	Non suicidal	Total	Chi-square
Individual Secularity	Count	427	7884	8311	<.01
	Expected	504.7	7806.3	8311	
	Count				
Non-secular	Count	235	2350	2591	
	Expected	157.3	2433.7	2591	
	Count				
Total	Count	662	10240	10902	

The second hypothesis of the study stated that Christian students are less likely than secular students to attempt suicide in the last 12 months. Results of this chi-square analysis, seen in Table 8, also showed a significant correlation,  $X^2(1)=5.434, p<.05, V=0.091$ . These results show that Christian students are less likely to attempt suicide than secular students.

Table 8: Summary of Chi-square Correlations between Individual Secularity and Suicide Attempt

		Suicide Attempt last 12 Months			
Individual Secularity		Attempt	No Attempt	Total	Chi-square
Non-secular	Count	53	368	421	<.05
	Expected	63.2	357.8	421	
Secular	Count	45	187	232	
	Expected	34.8	197.2	232	
Total	Count	98	555	653	

*Hypotheses 3 & 4:*

The third and fourth hypotheses of the study explored the relationship between suicidality and institutional secularity. The third hypothesis proposed that students who attend non-secular institutions are less likely to seriously consider suicide in the last 12 months than students who attend secular institutions. As can be seen in Table 8, a chi-square was used to analyze this correlation and found a significant relationship between institutional secularity and suicidal ideation,  $X^2(1)=4.148$ ,  $p<.05$ ,  $V=.020$ . These results showed that students who attend non-secular institutions were less likely to attempt

suicide than students who attend secular institutions. Separate analyses were run to see if gender differences existed. While institutional secularity was found to be significantly correlated with suicidal ideation for females,  $X^2(1)=3.127, p<.05, V=.021$ , no significant relationship was found between institutional secularity and males,  $X^2(1)=0.987, p>.05, V=.015$ . This difference indicates that female students who attend non-secular institutions are less likely to consider suicide than females that attend secular institutions, but no difference in frequency of suicidal ideation exists for males who attend secular versus non-secular institutions.

Table 9: Summary of Chi-square Correlations between Institutional Secularity and Suicidal Ideation

		Suicidal Ideation in the last 12 Months			
Institutional Secularity		Suicidal	Non suicidal	Total	Chi-square
Secular	Count	543	8058	8601	<.05
	Expected Count	522.3	8078.7	8601	
Non- secular	Count	119	2182	2301	
	Expected Count	139.7	2161.3	2301	
Total	Count	662	10240	10902	

The fourth hypothesis proposed that students who attend non-secular institutions are less likely to attempt suicide in the last 12 months than students who attend secular institutions. The chi-square results of this correlation were not significant,  $X^2(1)=0.016$ ,  $p>.05$ ,  $V=.005$ , and can be seen in Table 10. This finding indicates that there is no difference in the rate of suicide attempts between students at secular and non-secular institutions.

Table 10: Summary of Chi-square Correlations between Institutional Secularity and Suicide Attempts

		Suicide Attempt last 12 Months			
Institutional Secularity		Attempt	No Attempt	Total	Chi-square
Secular	Count	80	456	536	>.05
	Expected	80.4	455.6	536	
Count					
Non-secular	Count	18	99	117	
	Expected	17.6	99.4	117	
Count					
Total	Count	98	555	653	

### *Hypotheses 5-6*

The fifth and six hypotheses of the study explored the relationship between suicidality and involvement in campus activities. For this hypothesis all students who endorsed participation and/or leadership in at least one of the 13 of campus activities on the survey were considered campus activity participants. A full list of the 13 of campus activities can be found in question 11 of the National Survey (see Appendix B). The fifth hypothesis states that students who participate in at least one campus activity are less likely to seriously consider suicide in the last 12 months than students who do not participate in any campus activities. A chi-square used to analyze this correlation found a significant correlation between activity involvement and suicidal ideation,  $X^2(1)=31.789$ ,  $p<.01$ ,  $V=.054$ . As can be seen in Table 11, these results reflect that students who participated in and/or led at least one campus activity were less likely to have suicidal ideation in the last twelve months than students who did not lead or participate in any campus activities. Separate analyses were run to see if gender differences existed. Campus activity involvement was found to be significantly correlated with suicidal ideation for both men,  $X^2(1)=16.068$ ,  $p<.01$ ,  $V=.063$ , and women,  $X^2(1)=16.374$ ,  $p<.01$ ,  $V=.049$ . These results indicate that students who endorsed involvement in at least one campus activity were less likely to seriously consider suicide, and there were no differences in these findings between men and women.

Table 11: Summary of Chi-square Correlations Between Involvement in Campus Activity and Suicidal Ideation

		Suicidal Ideation in the last 12 Months			
Activity Involvement		Suicidal	Non Suicidal	Total	Chi-square
Yes	Count	485	8401	8886	<.01
	Expected	539.6	8346.4	8886	
No	Count	177	1839	2016	
	Expected	122.4	1893.6	2016	
Total	Count	662	102400	10902	

The sixth hypothesis proposed that students who participated in and/or led at least one campus activity were less likely to attempt suicide in the last 12 months than students who do not participate or lead any campus activities. The chi-square results of this correlation, seen in Table 12, were not significant  $X^2(1)=.855, p>.05, V=.007$ . This finding indicates that participation in campus activities does not correlate with increased or decreased rates of suicide attempts.

Table 12: Summary of Chi-square Correlations between Involvement in Campus Activity and Suicide Attempts

		Suicide Attempt last 12 Months			
Activity Involvement		Attempt	No Attempt	Total	Chi-square
Yes	Count	71	148	175	>.05
	Expected	71.7	148.7	175	
No	Count	27	148	175	
	Expected	26.3	148.7	175	
Total	Count	98	555	653	

### *Hypotheses 7 & 8*

The seventh and eighth hypotheses of this study focused on whether or not the independent variables predicted suicidality. Hypothesis seven states that students who participate in more campus activities, are Christian, and attend a non-secular institution are less likely to seriously consider suicide in the last 12 months than students who participate in less campus activities, are secular, and attend a secular institution. The results of this analysis are shown in Table 13. A multiple logistic regression model conducted to assess institutional secularity, individual secularity, and campus activity involvement as predictors of suicidal ideation in the past 12 months was significant,

$X^2(3)=68.043, p<0.01$ , Cox-Snell  $R^2=0.006$ . Independently, individual secularity and lack of campus activity involvement were both significant predictors of suicidal ideation, Wald  $X^2(1) = 38.476, p<0.01, \phi = 0.18$ , and Wald  $X^2(1) = 19.288, p<0.01, \phi = 0.18$ , respectively. These results indicate that if someone identifies as secular, the odds that they will consider suicide in the next 12 months increase by 1.719 times. Additionally, if someone is not involved with at least one campus activity, the odds that they will consider suicide in the next twelve months increases 1.507 times. Institutional secularity was not a significant predictor of suicidal ideation, Wald  $X^2(1) = 0.208, p>0.05, \phi = 0.18$ , so there is not an ability to predict level of suicidality by knowing the secularity of the college or university in which a student is enrolled.

Table 13: Summary of Regression Analysis for Variables Predicting Suicidal Ideation

Dependent Variables	Independent Variables	B	SE	Wald $X^2$	df = 1	Sig.	Exp( $\beta$ )
Seriously considered suicide	Institutional Secularity	.049	.107	.208	1	.648	1.050
	Individual Secularity	.542	.087	38.476	1	.000**	1.719
	Campus Activities	.410	.093	19.288	1	.000**	1.507

\* $p<0.05$  \*\* $p<0.01$

Hypothesis eight states that students who participate in more campus activities, are Christian, and attend a non-secular institution are less likely to attempt suicide in the last 12 months than students who participate in less campus activities, are secular, and



attend a secular institution. As can be seen in Table 14, the results of a multiple logit regression model conducted to assess institutional secularity, individual secularity, and campus activity involvement as predictors of suicidal attempts in the past 12 months was not significant,  $X^2(3)=5.553$ ,  $p>0.05$ , Cox-Snell  $R^2=0.136$ .

Table 14: Summary of Regression Analysis for Variables Predicting Suicide Attempts

Dependent Variables	Independent Variables	B	SE	Wald $X^2$	df = 1	Sig.	Exp( $\beta$ )
Suicide Attempts	Institutional Secularity	-.129	.289	.199	1	.655	.879
	Individual Secularity	.539	.228	5.569	1	.018*	1.714
	Campus Activities	-.016	.252	.058	1	.810	.914

\* $p<0.05$  \*\* $p<0.01$

#### *Continuous Measure of Suicidal Ideation (lifetime)*

A one-way ANOVA was run to explore the relationship between a continuous suicidal ideation variable and institutional secularity, individual secularity and activity involvement. As can be seen in Table 15, the results of the ANOVA indicate a significant overall difference ( $\alpha < .05$ ) between individual secularity and suicidal ideation,  $F(1, 10801) = 61.772$ ,  $p<.01$ , partial  $\eta^2 = .005$ . Comparing the mean scores of participants who were non-secular ( $M=1.76$ ,  $SD=.940$ ) and secular ( $M=2.17$ ,  $SD=1.134$ ), results indicate that students who are non-secular are less likely to have suicidal ideation than student who are secular. There was also a significant overall difference ( $\alpha < .05$ ) between activity involvement and suicidal ideation,  $F(1, 10801) = 34.863$ ,  $p<.01$ , partial

$\eta^2 = .003$ . Comparing the mean scores of participants who were involved in activities ( $M=1.88$ ,  $SD=1.006$ ) and participants who were not ( $M=2.20$ ,  $SD=1.146$ ), results indicate that people who are involved in at least one activity have lower levels of suicidal ideation over their lifetime. There was no significant overall difference between institutional secularity and suicidal ideation,  $F(1,10801)=0.027$ ,  $p>.05$ , partial  $\eta^2 = .000$ . Finally, there were no significant interaction effects between institutional secularity, individual secularity and activity involvement in relation to levels of suicidal ideation over one's lifetime.

Table 15: Summary of ANOVA Analysis Estimating Factor Contributions to Suicidal Ideation

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Institutional Secularity	.028	1	.028	.027	.869	.000
Individual Secularity	61.772	1	61.772	59.109	.000**	.005
Activity Involvement	34.863	1	34.863	33.360	.000**	.003
Institutional Secularity * Individual Secularity	.041	1	.041	.040	.842	.000
Institutional Secularity * Activity Involvement	.201	1	.201	.192	.661	.000
Individual Secularity * Activity Involvement	.002	1	.002	.002	.966	.000
Institutional Secularity * Individual Secularity * Activity Involvement	.460	1	.460	.441	.507	.000
Error	11280.282	10794	1.045			
Total	52409.000	10802				

\* $p<0.05$

\*\* $p<0.01$

## CHAPTER 5: DISCUSSION

### Introduction

In an effort to curtail college student suicide, research has focused on risk and protective factors that contribute to all levels of suicide, including suicidal ideation, suicide attempts, and completed suicide. This study explored relationships between three protective factors and two levels of suicide, namely college student suicidal ideation and suicide attempts. Results revealed that all three of the protective factors (i.e. individual secularity, institutional secularity, and campus activity involvement) had a significant relationship with college student suicidal ideation, but only one of those factors (i.e. individual secularity) had a significant relationship with suicide attempts. This chapter will explore the meaning of those results, identify the limitations that accompany these findings, and propose clinical, administrative and research implications.

#### *Individual Secularity and Suicidal Ideation*

College students who identified as Christian were less likely to seriously consider suicide in the last 12 months than students who identified as Atheist, Agnostic or Secular/non-religious. Such findings may be explained by the social connections students develop while in college. For instance, attending college is a time when young adults have left the familiarity of their friends and family, and are trying to develop new relationships. If we consider that many elements of family and friendship connectedness are severed when a student goes to college (e.g. proximity to home, social support from family members, ritual of daily routine), a student's connection to a Christian faith might be one element that a college student can maintain while transitioning to the unfamiliarity of a college campus. This unfamiliar college experience might be especially true of the

participants in this study, given that participants in this study all attended four-year colleges and universities, making them less likely than students at community or technical colleges to live at or near home (Pascarella & Terenzini, 1998). Therefore, being Christian might provide familiarity and stability in students' lives as they transition to college life, and may continue to provide a source of connectedness and belongingness throughout a student's college career.

In addition to the social support activities available to all college students, students who affiliate with a Christian faith likely experience an additional sense of social connectedness and perceived belongingness from faith related activities. Such connectedness may contribute to better mental health and reduce the likelihood of suicidal ideation for Christian students compared to secular students. In fact, college student participation in religious activities has been shown to contribute to the development of perceived friend support (Tiamiya, Warner, & Guthrie, 2005). Perceived friend support also likely reflects how much a person has a sense of belongingness in a group, community and/or college campus. Other research has shown that people who go to church more frequently have larger social networks, more contact with people in that network, more types of social support, and a more positive perception of the quality of their social relationships (Ellison & George, 1994). A difference between data for this dissertation and the Ellison & George study just is that this dissertation only focused on Christians and did not measure frequency of church attendance for college students. However, it seems likely that college students who reported affiliating with a Christian faith are more likely to participate in religious activities, and the positive outcomes of

higher levels of social connectedness found in the Ellison and George study are also likely to exist for Christian college students.

To better understand the opportunity Christian college students may have for connections, it might be helpful to specify the variety of ways religious connections can happen on college campuses. First, social connectedness might result from student peers who have similar faith beliefs, values and/or religious practices. Christian students who choose to participate in regular worship services might be more likely to connect to others, because those worship services facilitate bringing students with common beliefs together. Second, social connectedness could also occur through student organizations, like the Fellowship of Christian Athletes, or through less formal connections with peers, like students deciding to attend a church service together. Such socialization may allow students to feel connected with individuals and a larger community that all share common beliefs and practices. Third, students may also turn to clergy to get support during their college experience. College students who have been raised in a Christian faith are likely familiar with the resources of their Christian faith, so turning to a clergy member (even someone that they do not know) might be a comfortable way to feel connected, and would likely be encouraged and/or supported by family members. Similar to the findings of Ellison and George (1994), in which non-college adults who were Christian were found to have enhanced social connections, Christian college students would also seem to have avenues for connectedness and belongingness that their non-religious peers would not. As discussed earlier, this lack of connectedness and belongingness are risk factors for mental health concerns and suicide (Joiner, 2005).

*Individual Secularity and Suicide Attempts*

Students who identified as Christian were also less likely to attempt suicide than students who identified as Atheist, Agnostic or Secular/non-religious. In combination with the earlier findings on individual secularity and suicidal ideation, Christian students in this study are not only less likely to have suicidal thoughts, they are also less likely to act on those thoughts. Two explanations of these findings are offered. First, as suggested earlier, affiliating with a Christian faith may contribute to higher levels of connectedness and belongingness for college students. In this sense, secular college students are less likely than Christian students to turn to Christian resources (i.e. church services, organizations or professionals) that may enhance social connectedness and a sense of belongingness. While that difference in resource support likely does not have a direct relationship with suicide attempts, the distal relationship between lower levels of social connectedness and an increased likelihood of poor mental health (e.g. depression and anxiety) likely contributes to this significant difference in suicide attempts between Christian and secular college students.

Second, most Christians have a moral objection to suicide which may also explain the results. While it seems difficult for a people (including college students) to stop suicidal thoughts from entering their mind, the control an individual has to attempt or not attempt suicide might be influenced by the existence of a moral objection to suicide. This moral objection to suicide may serve as a protective factor for suicide attempts. Greening and Stoppelbein (2002) support such a position stating, “commitment to core, life-saving beliefs may help explain the religion-suicide link for adolescents” (p. 404).

*Institutional Secularity and Suicidal Ideation*

Women and men differed in their endorsement of suicidal ideation based on institutional secularity. Results of this study indicated that women at Christian colleges were less likely to consider suicide than women at secular colleges, but men did not differ on suicidal ideation between secular and Christian colleges. It is possible that environmental differences between secular and Christian colleges may help us understand these findings. For instance, non-secular colleges are almost always private, more costly, and smaller in size (U.S. Department of Education, National Center for Education Statistics, Digest of Education Statistics, 2008) than secular colleges. Consequently, students who attend non-secular colleges may come from more wealthy families and therefore have less of a financial burden when going to these colleges compared to students at secular colleges. Additionally, as a result of lower enrollment, students at Christian schools may experience smaller class sizes and may be more likely to see familiar students on campus than students on secular campuses. This frequency of familiar contact would seemingly contribute to a stronger sense of community and belonging. But, if the contributing factor of institutional secularity is related to connectedness and belongingness, why does it only create a difference in women, and not men? It is possible that women's help seeking behavior may be better suited for non-secular institutions than secular ones. For instance, women are more likely to have relational values (interpersonally and spiritually) that contribute to getting support from peers more readily than men (Kaplan & Klein, 1989). Studies suggest that women are also more likely to seek out professional support in times of emotional need (Gallagher, 2005), and more likely to engage in religious practice and beliefs (Clark, 2003).

Additionally, the cultural differences between these types of schools may also have an effect. For example, the culture created by the religious resources offered to students (i.e. clergy, worship services, prayers) could serve as a protective factor for students in a way that might not exist on secular campuses. This culture, in combination with relational help seeking characteristics of women, could create a strong environment for women to thrive, in which they would be more likely to address mental health concerns earlier, and less likely to have those concerns deteriorate to the stage of suicidality.

#### *Institutional Secularity and Suicide Attempts*

Institutional secularity was not found to be associated with participant suicide attempts for women or men. The lack of a significant relationship between institutional secularity and suicide attempts may be due to a restriction of range issue and/or a distal relationship limitation. If we consider the model of suicide by Beautrais (2003), institutional secularity is a variable that has a distal relationship with suicidality, so, by itself, the secularity of a college probably does not have a direct enough relationship with suicide attempts to reveal a relationship. This relationship with suicide attempts is further limited by the infrequency of participant endorsement of that behavior - a restriction of range issue. Therefore, an action as uncommon as making a suicide attempt combined with the distal relationship between institutional secularity and suicide attempts reduces the likelihood of finding a positive relationship between these variables.

#### *Campus Activity Involvement and Suicidal Ideation*

Students who were involved in at least one campus activity were less likely to seriously consider suicide in the last twelve months. Consistent with the model of suicide by Beautrais (2003), students involved in campus activities may be more likely to



develop positive relationships with peers and feel less isolated and lonely, possibly decreasing the odds of depression. Campus activity involvement also likely reinforces many protective factors of suicide that other researchers have found, including good social support and social networks, positive school experiences, and good problem-solving skills (Beautrais, 2003; Dervic et al., 2004; Ellis & Lamis, 2007). Additionally, students involved in campus activities are likely to share at least a similar interest in that shared activity with other students, and this shared interest may reinforce a sense of connectedness among members of the campus activity. For example, let's consider a student at college who has been feeling homesick and anxious. If that student gets involved in a campus activity, like hall council, that student will be required to interact with several peers who are also members of the hall council. As stated above, this involvement reinforces the development of interpersonal relationships with peers, which other research has identified as a protective factor for college student suicide (Westefeld, 2006). In addition to individual connections, student activity involvement also likely contributes to a sense of group belongingness, a factor that was previously identified as having a negative relationship with suicidality (Joiner, 2005). Related to the above example, the positive interpersonal impact of membership in hall council is reinforced by the fact that other students on the hall council have also chosen to be involved in that same organization. This involvement suggests a shared interest across group members in areas like leadership or student government, which might give a sense of common belongingness across the group. From a practical standpoint, this sense of belongingness and connectedness likely makes it is easier for students to turn to others for support, which is especially important in, or on the cusp of the suicide continuum.

### *Campus Activity Involvement and Suicidal Attempts*

Student involvement in campus activities was not associated with suicide attempts. More specifically, the frequency of students attempting suicide in the last 12 months did not differ between students who were involved in at least one campus activity versus students who were not involved in any campus activities. Consistent with the model of suicide presented by Beautrais (2003), these results might not have met our prediction because many college students do not reach this level of suicidality. Therefore, getting to the stage of making a suicide attempt might signify attainment of a state that is so powerful that the distal factor of campus activity involvement might not have a strong enough protective impact on suicide attempts to make a difference.

#### *Summary*

Results of this study revealed relationships between seriously considering suicide and individual secularity, institutional secularity, and campus activity involvement. However, individual secularity was the only factor significantly related to suicide attempts. To explain the findings related to considering suicide, all three factors seemed to contribute to a sense of connectedness with peers and a sense of belongingness at college. While connectedness and belongingness were also proposed to explain the relationship between individual secularity and suicide attempts, moral objection to suicide was an additional explanation offered for this relationship.

#### *Limitations*

There were several limitations evident in this study. First, this study is non-longitudinal, and comprised of data that is a snapshot of the rapidly evolving lives of college students. While institutional secularity is a constant variable, individual secularity

and campus activity involvement are often more fluid variables for college students as they explore and redefine their faith, and make decisions about their level of involvement in student activities. Therefore, this study does not allow us to see the impact of the changes college students go through in spiritual and interpersonal development.

Additionally, the dependent variables used for this study of seriously considering suicide and suicide attempts only measured the last 12 months, so the fluidity of suicidality over one's life is less clear. This limitation restricts findings to 12 months of a student's life, and makes understanding suicidality, and contributing factors to suicidality, less evident. Finally, this research study only studied 18 to 24-year-old undergraduate college students, an age at which spiritual exploration and identity formation is common. Again, because this study was just a snapshot of a college student's experience, we miss the process of students exploring their faith, and how that process impacts a student's suicidality.

Second, methodologically the national survey was not standardized, so the reliability and validity of the survey items is not known. If the survey, or items in it, lacked reliability or validity, findings would need to be interpreted with caution and retested. Third, as mentioned in chapter four, normal distribution of data assumptions for the ANOVA were not all met, so the results of the ANOVA should be interpreted with caution.

There are also some limitations related to the way variables have been defined. The fourth limitation of this study stemmed from campus activity involvement being recoded as a dichotomous variable. Because of this, students who participated in, or led, as few as one campus activity, or as many as thirteen, were all pooled into the same

variable. This structure did not allow results to reveal if varying levels of campus activity involvement made suicidal ideation or suicide attempts more or less likely. The fifth limitation of this study was also related to the measure of campus activities. Participants could endorse involvement in up to thirteen on-campus activities, but involvement in off-campus activities, like off-campus performance groups or recreation leagues, was not measured, so viewing participants who did not endorse any of the campus activities as a clear indication of poor connectedness is probably not warranted. The sixth and final limitation of the study was also a definitional limit. Activity involvement was chosen to represent the construct of social connectedness in this study. However, there were 13 different types of campus activities that participants could endorse and there may be differences in how participation in each of those activities impacts connectedness and suicidality. For example, given that higher levels of substance use are connected with suicide, it is plausible that some activities might be more likely to integrate alcohol use into their group activities than others. In fact, one study of high school students showed that involvement in activities was correlated with increased suicide risk, and partying was proposed as one of the explanations (Mazza & Eggert, 2001). Given these definitional limitations of campus activity involvement, results related to this independent variable should be viewed as exploratory and interpreted with caution.

#### Implications for Future Research

This study revealed several areas for future research. First, even though this study had a large sample, the small number of students who reported attempting suicide reduced the power of analyses with suicide attempts as the dependent variable. Doing the study again with more students who attempted suicide in the last year would contribute

greatly to suicide research. Additionally, research with larger samples that explores the impact of both campus activity involvement and mediating secularity variables would help clarify many of this study's findings.

A second area for future research would be to gain a better understanding of whether or not there is a significant relationship between questioning one's spirituality and poorer mental health and suicidality. It seems plausible that children who are brought up in a Christian faith, and who attend a college of that same faith, might be deterred from exploring their spirituality, reinforcing the protective factor of a stable religious foundation throughout their college experience. It begs the question of how levels of religiosity may parallel questioning of one's religious faith, before, during or after college. Specifically, future research could explore if students who are actively questioning their religious faith are more suicidal than those who are not questioning their religious faith. This research approach would allow for examination of faith exploration as a protective factor of suicide, a seemingly valuable direction for additional research.

A third area of future research could address students whose religious faith changes during the college years to see if those individuals are more or less likely to have any level of suicidality. The current study created a snapshot of individuals at a given time in their college career. Like the longitudinal study of youth suicide done by Fergusson (2000), it would be valuable to conduct longitudinal research to explore the impact of changing secularity of individuals at secular and non-secular colleges.

Forth, future research directions could address the limitations of this study. For example, a future research area would be to increase clarity about the impact of campus

activity involvement. . Research in this area could explore the types of students that get involved in different types of activities, and learn more about how involvement in different activities impacts individual characteristics, like a sense of belongingness and/or connectedness. A fifth area of recommended future research could explore if students who practice other religious faiths have similar patterns of suicidal ideation and attempts.

A sixth future research area could explore the distinction between the impact of moral objection to suicide and connectedness as contributing factors to protecting against suicide attempts. It may also be valuable to see if having a moral objection to suicide contributes to reduced rates of suicidal ideation. In general, learning more about how affiliating with a religious faith serves as a protective factor will be a promising area for future research.

Seventh, what is it about institution secularity that contributes to lower rates of suicidal ideation for women? Future research could help clarify if it is about: the culture of the college, the secularity of the student at that college, and/or characteristics of a private (costly, small class sizes).

Finally, the eighth area of future research could look at how connectedness and belongingness contribute to suicidality for college students with a qualitative approach. While there are several quantitative measures of religious connectedness (i.e. type and frequency of faith affiliation), many aspects of belongingness and some aspects of connectedness might best be understood via qualitative measures to elaborate on our understanding of the factors that contribute to belongingness and connectedness.

### Implications for Campus Climates and Student Support

While affiliating with a Christian faith has been identified as a protective factor for college students, it does not completely eliminate the risk of suicide. However, given the fact that non-secular (religious) individuals have been shown to feel a stronger sense of belongingness and connectedness (Ellison & George, 1994), colleges can presumably support student well-being by helping students who identify as Christian get linked with faith communities, and offer non-faith involvement opportunities to all students. While pursuing these goals, it will be important for campus professionals to be sensitive to how gender differences might impact of participating in a campus activity. It will be additionally important for college administrators to understand how their campus climate/culture might specifically impact students on their campus differently than a college of a different size or secularity. Finding ways to help students get linked with campus activity opportunities will improve the odds that they will feel a sense of connectedness and belongingness. Also, gathering information about students' spiritual lives in counseling or residential settings might provide some insight into their level of connectedness on campus, as well as how to support strengthening that level of connectedness and involvement. As mentioned above it seems valuable for future research to explore the interplay between spiritual identity development and suicidality as they evolve over time, and to have this research guide administrative and clinical decision-making.

From a theoretical standpoint, Joiner (2005) proposes the contribution of three factors to suicidal behavior: Thwarted belongingness, perceived burdensomeness, and the acquired ability to inflict lethal self-injury. Students who are not involved in campus

activities or a religious faith may be more likely to experience thwarted belongingness than students who are involved in student activities, because both of these areas facilitate the development of relationships. Joiner proposes that thwarted belongingness, coupled with perceived burdensomeness, can lead to suicidal ideation, and lack of belonging or feeling like a burden can be isolating for college students trying to establish meaningful relationships in their lives. However, without the ability to inflict self-injury a student would not make an attempt. This ability to inflict lethal self-injury may serve as a particularly strong protective factor for college students since they are at a younger age and inflicting self-injury is less likely to be habituated (Joiner, 2005). College clinicians and administrators need to understand how to use a student's faith and interests to try to find ways to link them with meaningful relationships that may contribute to lowering a student's level of suicidality. However, professionals must be cautioned not to give excessive importance to factors that have an exogenous relationship with suicide.

### Summary and Conclusion

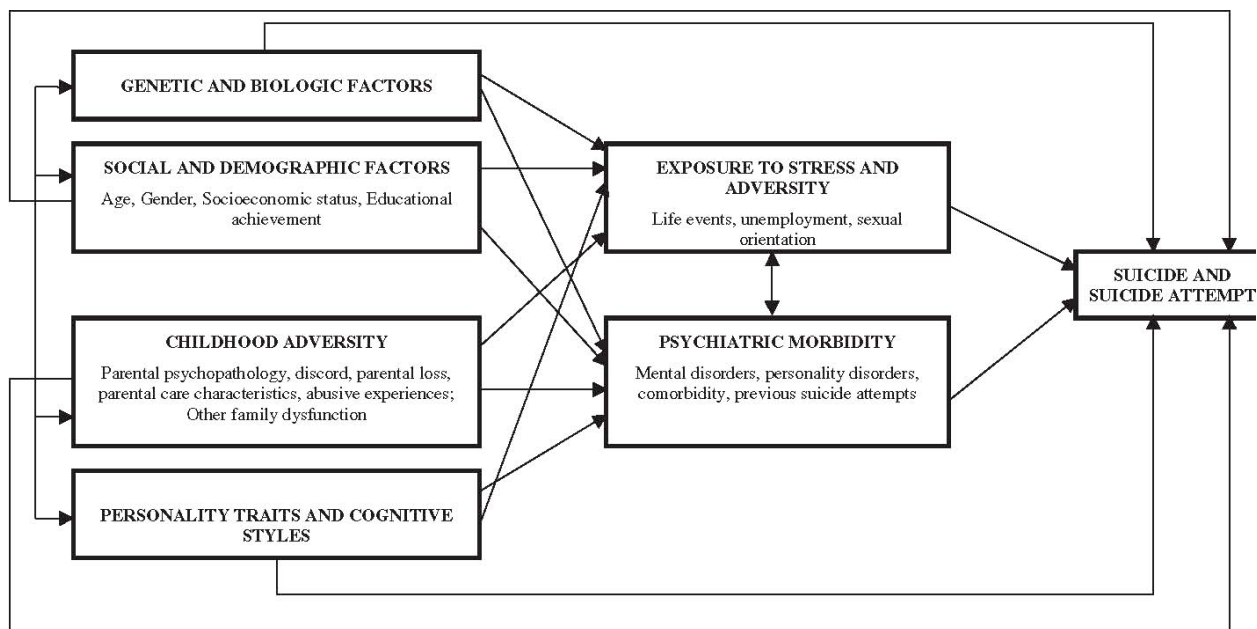
This study focused on college students and how three factors, individual secularity of students, the institutional secularity of the college they attend, and their level of campus activity involvement, contributed to the frequency of suicidal ideation and suicide attempts. Each factor was found to have a significant relationship with college student suicidal ideation, suggesting that campuses could benefit from understanding the secularity and involvement characteristics of students to promote well-being, and lessen the likelihood of students becoming suicidal.

Suicide continues to occur on college campuses at an alarming rate, and the percentage of students considering and attempting suicide is at least as distressing.



Progress toward reducing suicide, suicide attempts, and suicidal thinking will need support from additional research regarding the specific characteristics that contribute to college student suicidality, as well as more preventative programming that provides information about how students get connected with peers and professionals in ways that are consistent with their interests, their values, and their spiritual beliefs. This study found value in understanding how being Christian and getting involved in campus activities serve as protective factors against suicide for college students. This study also uncovered interesting findings that suggest campus activity involvement promotes connectedness and belongingness. Additional new and interesting findings revealed that Christian colleges have more of a protective effect on college student suicidal ideation for women than secular colleges. More research, and the development of accompanying clinical and administrative policies and approaches, will be important as we look for a deeper understanding of how individual factors impact the progression of suicidality for college students.

Figure 1: Conceptual Model of Domains of Factors for Suicidal Behaviors Among Young People



From (Beautrais, 2003) p. 1140

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## **Appendix A: Research Proposal**

### **I. Title: Suicidal Thoughts and Behavior among Undergraduate and Graduate Students in the United States**

### **II. Investigators: Chris Brownson, Shanna Smith, and David Drum**

### **III. Goals of the Project**

1. To explore aspects of suicidal crises among college students, including how students attempted to cope, resources that would have been helpful during the crisis, and methods for positive resolution of the crisis. This data will help college counseling centers better intervene with students in suicidal crisis.
2. To identify the characteristics of suicidal students who do not seek help at their college counseling centers, and in particular, to determine which barriers prevent them from seeking help. This data will help college counseling centers to more effectively reach out to these students and assist them through their crises.
3. To explore the psychological and situational factors associated with suicidal ideation and suicide attempts in order to delineate typologies of students with suicidal ideation. This data will help develop practices and policies that are more finely attuned to students' differing needs.

### **IV. Background and Significance**

At least ten percent of American college students contemplate suicide each year (Brener, Barrios, & Hassan, 1999), and an estimated 6.3 – 7.0 per 100,000 students take their life during their college career (Schwartz, 2003; Silverman et al., 1997), making suicide the third-leading cause of death among college-age students (U.S. Congress, 2004). Most colleges and universities have instituted counseling centers to help students deal with difficulties that could lead to suicide attempts. Seeking help at such centers decreases the rates of suicide among clients to almost one-sixth of expected rates among a clinical population, but counseling does not eliminate all risk: 25% of students who committed suicide previously sought help at their counseling center (Schwartz, 2003). Counseling centers, often faced with dwindling resources as well as increased complexity and severity of client symptomology over the past decade (Benton et al., 2003), are struggling to sustain and improve their services to at-risk clients.

Recognizing that the prevention of youth suicide should be a top national priority, the 108<sup>th</sup> U.S. Congress passed the Garrett Lee Smith Memorial Act in October 2004. The Act was named after a Congressman's son who committed suicide while in college. The Act states that "youth suicide early intervention and prevention have been listed as urgent public health priorities by the President's New Freedom Commission in Mental Health (2002), the Institute of Medicine's Reducing Suicide: A National Imperative (2002), the National Strategy for

Suicide Prevention: Goals and Objectives for Action (2001), and the Surgeon General's Call to Action to Prevent Suicide (1999)" (U.S. Congress, 2004, p. 3). The bill includes a section on Mental and Behavioral Health services on Campus, authorizing college counseling centers to compete for \$1.5 million in grants in FY05-06 for the purposes of hotlines, informational materials, training programs for campus personnel, and other campus initiatives to prevent substance abuse and suicide among college students. This level of government funding is expected to continue across subsequent fiscal years.

While the potential for increased funding in this area is encouraging, many campuses are unsure about the most effective way to leverage this funding. Campus counseling centers feel they need to better understand how to reach out to students who may be contemplating suicide, and how to more effectively help those who do seek their assistance. Research on the topic has been limited. Most studies of suicide among college students have focused on *suicidal ideation*, or the contemplation of suicide. Almost all of these studies have used convenience samples of psychology students, although one used a nationally representative sample (Brenner, Barrios, & Hassan, 1999). The vast majority of these studies discuss the frequency of suicidal ideation among different demographic groups, but few studies, if any, exist which seek to describe detailed information about the *nature, course, and subjective experience* of college students' suicidal crises.

Several studies have focused on the demographic predictors of ideation (Brenner, Barrios, & Hasan, 1999; Rudd, 1989; Schweitzer, Klavich, & McLean, 1995), with conflicting results. For example, one found that Asian students had higher levels of suicide ideation than Caucasian students (Schweitzer et al., 1995) and one found that "Other" races (including Asian students) had higher levels of ideation than White students (Brenner et al., 1999), but a third found no difference between Asian and White students (Rudd, 1989). Among the two studies that examined the impact of separated or divorced parents, one study found the factor significant (Rudd, 1989) while the other did not (Schweitzer et al., 1995). Similarly, the studies disagreed on the impact of student age. However, the findings seem to agree that students who live alone or have recently sought mental health services are at a higher risk for suicide ideation and suicide attempts.

Other studies focusing on the behavioral and psychological correlates of suicide ideation and attempts (e.g., Bonner & Rich, 1987; Mishara, 1982; Mishara, Baker, & Mishara, 1976; Schotte & Clum, 1982) suggest that stress, depression, and feelings of hopelessness are important precursors of suicidal thoughts and behaviors. Building upon these findings, Bonner and Rich (1987) posit that students who feel socially and emotionally alienated, who engage in cognitive distortions, and have deficient adaptive resources are more predisposed to suicidal ideation. Stress and hopelessness may then provide the trigger for suicidal thoughts or behaviors. In addition to these psychological factors, Brenner et al. (1999) suggest that students who consider suicide are much more likely to engage

in behaviors such as cigarette smoking, episodic heavy drinking, and illegal substance use.

The information gathered in the studies above, while illuminating, does not provide concrete assistance to college counseling centers in their efforts to implement preventative and early intervention efforts for students who are not currently counseling center clients, and to improve the efficacy of the services offered to at-risk students who are already counseling center clients. The proposed study would gather data from 109 participating institutions of higher education with a combined enrollment of approximately 1.9 million students (see *Participating Campus Information.xls*). Results for each institution will be provided to their student counseling center, giving the local counseling center staff concrete information regarding the associated factors and incidence of suicidal ideation on their own campus. In addition, data gathered across all 109 institutions will be aggregated into a general report that will increase the understanding of the social and psychological factors that surround suicidal ideation and suicidal crisis in schools across the nation.

The results of the general report will be used to meet the goals listed in Section III above. The first goal is to explore aspects of suicidal crises among students, particularly students' attempts to cope with and resolve the crises. This information will be helpful to counseling centers in their attempts to provide useful assistance to clients in suicidal crisis. In particular, a counselor's ability to tell a client that "other suicidal students have found it helpful to..." may increase the relevance and impact of the proffered advice.

The study's second goal is to identify the characteristics of suicidal students who do not seek help at their college counseling center, and in particular, to determine which barriers prevent them from seeking help. Seventy-five percent of students who commit suicide do not seek help at their counseling center. In order to decrease the rates of campus suicide, it is vital for counseling centers to learn how to reach out and connect with those students who are most in need of their help.

The study's third goal is to delineate typologies of students with suicidal ideation. Clinical observation and experience tells us that some students have chronic suicidal thoughts, while others have episodic thoughts; some are at high risk for an attempt and others are not; some engage in behavior disruptive to their own and fellow students' learning, while others do not; some may attempt suicide once, and others may make serial attempts. However, the quantitative variation in suicidal thought and behavior, and the degree to which different thoughts and behavior are connected, are unknown. This lack of knowledge presents a serious practical problem to university administrators and counseling center directors, as different policies and treatment strategies may be appropriate to different suicide typologies. For example, some universities have a policy to expel students who exhibit suicidal behavior, on the grounds that their behaviors will escalate to an attempt that will be disruptive to their peers' learning. Shedding light on the types

and nature of suicidal thought may help universities and their counseling centers develop policy that is more finely attuned to students' differing needs.

## V. Research Method, Design, and Proposed Statistical Analysis:

The proposed research would involve a stratified random sample of approximately 90,000 students across 109 participating U.S. colleges and universities. Each university's registrar or Dean of Students will provide the principal investigators with a list of currently enrolled students over the age of 18 and their e-mail addresses. The principal investigators will randomly select 500 (for small colleges) to 1,000 (for large Universities) students for inclusion in the sample and assign a respondent identification number to each selected student. Each member of the sample will receive an e-mail from their local campus counseling center containing information about the study. The invitation will specify that the study is being conducted by the University of Texas at Austin, but is sponsored and supported by the local campus. Included in the invitation will be a link; clicking on the link will take the student to an online survey web page, which will be customized with the colors and logo of their local campus. Students will read the study information and consent form, and decline or consent to participate. As the student completes and submits the survey, data will be stored in two separate locations:

- (1) An identification table, which will contain study identification numbers, information about whether the student accessed the survey and, if so, whether they declined or consented to take the survey, and
- (2) a de-identified survey response table, which will store the anonymous student responses.

The two tables lack a common identifier; thus, it would be impossible to map identifiable student information to the student's response. More detailed information about the technical implementation of this process is discussed below in section *VI-E*.

Survey data will be collected and held by the principal investigators. We will produce reports for each individual campus, and will use stratification weights to create an overall report for the entire sample. Reports will include descriptive statistics, primarily tables of frequencies and percentages for each item. Responses may also be broken down by factors such as ethnicity or gender. Open-ended responses will be coded for themes. More advanced data analyses (such as cluster analysis, factor analysis, ANOVA, regression, and multilevel analysis) will be performed as necessary to meet the goals set forth in Section III.

## VI. Human Subject Interactions

### A. Sources of potential participants

The sample will be stratified by college campus, with each campus sample of  $N = 500 - 1000$  randomly selected from the databases of all currently enrolled students over age 18, obtained from the participating campus registrars



generated after the final add/drop period for all campuses (mid-September 2005). For campuses with substantial graduate enrollment, the sample will also be stratified by undergraduate versus graduate status. Details regarding the sample size for each campus are included in *Participating Campus Information.xls*.

#### B. Procedures for the recruitment of participants

Each member of the sample will receive an e-mail from their local campus counseling center containing information about the study (see document *Email Invitations.doc*). The invitation would specify that the study is being conducted by the University of Texas at Austin, but is sponsored and supported by the local campus. The e-mail will contain a URL with the respondent identification number embedded in the link. For example, if a student's identification number were 550, the link might be:

<http://www.utexas.edu/its/rc/survey/index.php?c=si&550>

Invitations will inform students that completing the survey will make them eligible to be awarded one of 100 gift certificates from Amazon.com or a grand prize award of a \$1000, \$750, or \$500 gift certificate from Amazon.com. Winners of the incentives will be randomly selected from the pool of participants who consent to participate.

#### C. Procedure for obtaining informed consent

After clicking on the e-mailed link, students will be taken to an introductory information page containing a survey consent form (see *Consent Form.doc*). After reading the consent form, students will select one of two options: "I consent to participate in this survey" or "I decline to participate in this survey." If they choose the latter option, they will be taken to a page that thanks them for their time and provides information about their local campus counseling center and local resources which might be helpful for someone who needs psychological treatment or who has suicidal thoughts (see *Logout Page.doc*). If they consent to participate, they will proceed to the survey itself. Each page of the survey will contain a link at the bottom of the page reading "Click here if you would like to withdraw from this study." If the student clicks on the link, they will be taken to a page that reads: "If you choose to withdraw from the study, all information you have entered thus far will be deleted from the study database, and you will receive no further invitations to participate. Do you wish to withdraw?" Students may then choose "I wish to withdraw," "I wish to exit the survey permanently, but my anonymous responses may be included in the study," "I wish to exit the survey now, but I would like to return to the survey later." "I do not wish to exit now; please return me to the survey." Students who choose to withdraw or exit will receive information about their local campus counseling center and local resources which might be helpful for someone who

needs psychological treatment or who has suicidal thoughts. In addition to the withdrawal and exit options, students may participate in the study but skip any questions they do not wish to answer.

Students who do not respond to the first survey invitation may receive up to three follow-up invitations. Follow-up invitations will not be sent to any student who has already visited the website and consented or declined to participate (see follow-up invitations in the document *Email Invitations.doc.*)

#### D. Research protocol

The surveys will be completed by each respondent on a computer using the attached set of questions (see document *Questionnaire.doc.*). Items on the questionnaire were reviewed by the consortium of directors from each participating campus counseling center, as well as by two experts in the suicidal ideation field, Dr. David Rudd and Dr. Allan Schwartz. The survey is estimated to require approximately five minutes to complete for those who have not had suicidal thoughts in the past year. Those who report having had suicidal thoughts in the past year will receive extra items, which will extend the length of the survey by approximately 15 minutes.

#### E. Confidentiality of participants

The degree of privacy inherent in an online survey is dependent upon the respondent's preference. It is expected that most students will choose to take the survey in the privacy of their home.

In order to preserve the anonymity of student responses, the survey responses will never be associated with personally identifiable information. In the following section, we detail the technical issues that will allow this disassociation of data during the survey itself.

As noted in sections V and VI.B above, students will click on a personalized link to visit the website and indicate whether they consent or decline to participate. This information will be stored in an identification table, which will contain study identification numbers, information about whether the student accessed the website and, if so, whether they declined or consented to take the survey. When a respondent submits the consent page, the respondent is assigned a new identification number (henceforth called the "random ID") comprised of their three-digit school identifier and a randomly-generated number. It is necessary to include the 3-digit school identifier within the random ID in order to calculate response rates and other results separately for each campus, and to provide respondents with *local* counseling resources and emergency contact information (see Section VII). The random ID would serve as the unique identifier necessary for the survey's internal programming, but will have no relation and no link to the student's original identification number. In other words, if a student consents to

take the survey and begins the survey, none of the student's responses can be linked back to the student's name, identification number, or any other identifying information about them. Survey responses for the student would be stored in a file indexed by the random ID.

Based on our experience with online surveys, respondents sometimes request the capability to exit the survey before completion, and then return to complete the survey at a later date. In order to allow this possibility, if a respondent closes the survey window before completion, a pop-up window will inform them that if they wish to return to the survey to complete it at a later date, they may do so by allowing the survey to set a cookie<sup>1</sup> on their machine (the cookie would contain only the random ID). Students would be informed that the acceptance of the cookie would not compromise the anonymity of the student's responses, and that the cookie would be deleted when the student returns to the survey or after the space of 14 days, whichever comes sooner. Students will choose between the response, "Do not set a cookie; I wish to exit the survey permanently," or "Please set a cookie on my computer so that I may return to the survey later." The survey would have no method for tracking the number or locations of any cookies set.

#### F. Confidentiality of data

The survey will use the Secure Sockets Layer protocol, a method commonly used to encrypt sensitive data transferred over the Internet (e.g., credit card numbers). This protocol can be identified through the use of a URL beginning with *https*: rather than *http*:

Submitted data will be stored in a password-protected database on a secure server located at the University of Texas at Austin. Access to the data will be limited to the principal investigators and their research staff. Results of the study will be reported in such a way that no responses or comments they make can be identified to them specifically.

#### G. Research Resources.

The primary resource-intensive phase of the study will be the programming of the online survey. The second PI, Dr. Smith, has several years' experience with survey programming; her staff includes a full-time systems analyst whose primary responsibilities include the technical aspects of online survey management, including the coordination of mass e-mail invitations and large-volume data collection.

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<sup>1</sup> A *cookie* is a piece of information stored on the user's computer, usually without the user's knowledge. Cookies are used by most online companies to identify returning customers. Users may delete any cookies stored on their computer if they wish. For more information on cookies, see the Webopedia entry: <http://www.webopedia.com/TERM/c/cookie.html>

## VII. Potential Risks

The only research to systematically examine the impact of suicide assessments on suicidal risk and emotional distress (Reynolds, Lindenboim, Comtois, Murray, & Linehan, under review) concluded that respondent risk for increased suicidality is minimal. The Reynolds et al. study involved 63 *chronically suicidal* women who responded to an intensive suicidal behavior inventory on several different occasions across two years. The study concluded that participant suicidality was as likely to decrease as increase over the course of a suicidal inventory session; in addition, among the sessions that increased in suicidality, the increase was typically small. Even in sessions involving high-risk feelings of suicidality, low-intensity interventions (e.g., providing emergency contact information) were typically sufficient for risk reduction.

In order to reduce the risk of heightened suicidality among our respondents, students will be provided with information about their local counseling center services and other local mental health and emergency contact information (see *Logout Page.doc*). There will be several opportunities for students to receive this information: (1) If they click on a link provided at the top of the survey welcome page, (2) if they go to the study site but decline to take the survey, (3) if they begin the survey but withdraw or exit prematurely, or (4) if they submit a completed survey. For example, students who attempt to close their browser in the middle of the survey will be blocked by a message (see section VI-E) asking if they wish to exit the survey permanently or return to the survey later. If they choose to exit the survey permanently, they will be taken to an exit page containing the counseling center and emergency contact information. It should be noted that this “blocking message” method will work with the majority of platforms and browsers; however, perhaps 5% of those who attempt to prematurely close their browser will not receive the pop-up message and will exit without seeing the information. Because of this possibility, in an attempt to provide all students with the opportunity to see the information, the local counseling center and emergency contact information will also be provided via a link on the survey welcome page (see *Login Page.doc*).

## VIII. Potential Benefits

Students who have suffered from suicidal thoughts but have hesitated to confide in others are likely to benefit from sharing their experience in an anonymous, non-socially-threatening situation. By answering questions about suicidality and then being informed that help is available for such thoughts, students who have not sought services can realize that it is appropriate, and indicated, to use those available resources. Participation in the survey will inform students of the free or low-cost services provided by their college counseling center; this may encourage at-risk students to seek assistance at the center, reducing their suicidal risk. In

addition, as noted in section IV of this proposal, the information garnered by the survey will increase the effectiveness of the counseling services, by: (1) helping college counseling centers better intervene with suicidal students who seek help, (2) helping college counseling centers to more effectively reach out to suicidal students who do not seek help on their own, and (3) helping develop practices and policies that are more finely attuned to differing needs among suicidal students.

### **VIII. Other Research Sites**

The University of Texas at Austin will receive enrollment information from 108 other campuses (see *Participating Campus Information.xls* for a complete list of participating institutions). After the University of Texas at Austin IRB has preliminarily approved this proposal, the directors of each campus counseling center will use this proposal as a basis for a petition to their own registrar or Dean of Students to provide them with the necessary student enrollment data for the University of Texas at Austin. After each campus request is approved, each counseling center director will provide us with an official letter of approval, which we will in turn provide to the University of Texas at Austin IRB for the final proposal approval. Each campus counseling director will also serve as the local Project Coordinator for that campus, providing their name and e-mail address to the students to answer questions about the study. The document *Participating Campus Information.xls* contains the names of all 109 local project coordinators.

### **X. Review by another IRB**

This project has not been reviewed by another IRB. The federal Office for Human Resource Protection (OHRP) communicated to us that, in their opinion, the colleges and Universities participating in this study are not engaging in their own research (see document *OHRP-Communication.doc*). As a consequence, the study requires approval only from The University of Texas at Austin IRB.

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**Appendix B: Suicide Ideation Survey – Spring 2006**  
**National Survey Codebook**

<b>Conventions</b>	
<b>Question Numbering</b> Q2, Q3A, ...	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.
<b>Survey Content</b> “Your age:”	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.
<b>Response Options</b> 1 = “Yes”	The response options for each question are indicated on the right side of the each row. In the case of questions with multiple data points, the response options presented apply to each point. In some cases, a question has the same response options as a previous question, and will refer back to it.
<b>Missing Values</b>	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 selected.
<b>Skip Patterns</b> [Q3F = 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; the majority of these represent opportunities to provide an explanation for an “other” response. Larger skip patterns, in which entire sections of questions are skipped, are indicated by separate rows labeled “Skip:”, with explanations of the pattern.
<b>Question Groups</b>	The study contains several groups of questions, in which a series of questions all relate to and depend on a previous question. These groups are preceded by a separate row labeled “Group:” which explains their relation and the skip pattern controlling them. Further, the questions in each group share the same number, with sequential letters appended.
<b>Required Questions</b>	The respondent was only required to answer two or three questions that controlled the large skip patterns of the survey. These questions are marked in the code book with “(respondent is required to answer this question)”.

<b>Response</b>	A fully anonymous number that uniquely identifies the response.	(integer number; always present)
<b>Duration</b>	The duration of the response in minutes. Due to a variety of factors this value should not be considered very accurate.	(integer number; always present)
<b>Affiliation</b>	A unique number which identifies the school of the respondent.	(integer number; always present)
<b>School</b>	The school attended by the respondent.	(text; always present)
<b>Class</b>	A number indicating if this respondent was marked as being an undergraduate or graduate level student.	1 = undergraduate 2 = graduate
<b>Q1 R_Q1</b>	“Your age:” This question was recoded for the crosstabs report only to represent age categories.	(integer number; blank = no response); Outliers were defined as age < 16 years and > 81 years and were recoded as missing on this variable. 1 = “16-21 years” 2 = “22-25 years” 3 = “26-29 years” 4 = “30-39 years” 5 = “40+ years”
<b>Q2</b>	“Your gender:”	blank = no response 1 = “Female” 2 = “Male”



<b>(Q3) R_Q3</b>	<p>“With the understanding that these categories might be limiting, which ethnicity best describes you?” (Please check all that apply.) <b>Q3A:</b> “African American/Black” <b>Q3B:</b> “Alaska Native/American Indian” <b>Q3C:</b> “Asian-American” <b>Q3D:</b> “Caucasian/White” <b>Q3E:</b> “Hispanic-American/Latino” <b>Q3F:</b> “International/Foreign Student” This question (Q3A-F) was recoded into one variable. Respondents who selected more than one ethnicity were recoded to “Multiracial”.</p>	<p>0 = no response / no 1 = yes 1 = “African American/Black” 2 = “Alaska Native/American Indian” 3 = “Asian-American” 4 = “Caucasian/White” 5 = “Hispanic-American/Latino” 6 = “International/Foreign Student” 7 = “Multiracial”</p>
<b>Q4</b>	<p>“What is your country of origin?” [Q3F = 1]</p>	<p>(text; blank = no response or skipped)</p>
<b>Q5</b>	<p>“What is your grade classification?”</p>	<p>blank = no response 1 = “Freshman” 2 = “Sophomore” 3 = “Junior” 4 = “Senior” 5 = “Graduate Student” 6 = “Law Student” 7 = “Medical Student” 8 = “Non-degree-seeking Student”</p>

<b>Q6 R_Q6</b>	“What is your major field of study?” This question was recoded into 10 categories.	(see appendix a) 1 = “Arts and Humanities” 2 = “Biological Science” 3 = “Business” 4 = “Education” 5 = “Engineering” 6 = “Physical Science” 7 = “Professional” 8 = “Social Science” 9 = “Technical” 10 = “Other Fields”
<b>Q7 R_Q7</b>	“Please estimate your cumulative GPA:” This question was recoded for the crosstabs report only to represent GPA categories.	(floating point number; blank = no response); Outliers were defined as cumulative GPA > 4.0 and were recoded as missing on this variable; although some schools may use an alternative GPA scale, 99.6% of the total sample fell within the GPA range of 0.0 to 4.0. 1 = “A: 3.7-4.0” 2 = “B: 2.7-3.69” 3 = “C: 1.7-2.69” 4 = “D: <1.7”
<b>Q8</b>	“What is your current living arrangement?”	blank = no response 1 = “On-campus residence hall” 2 = “Off-campus residence hall” 3 = “On-campus apartment/house” 4 = “Off-campus apartment/house” 5 = “Fraternity/Sorority house”
<b>Q9</b>	“Do you have a roommate?”	blank = no response 1 = “Yes” 2 = “No”

<b>Q10</b>	“Do you live with a family member?”	blank = no response 1 = “Yes” 2 = “No”
<b>(Q11)</b>	<p>“Of the following activities, in which do you actively participate and in which do you have a leadership role?” (Please check all that apply.)</p> <p><b>Q11A</b>[P L]: “Educational/departmental organizations” <b>Q11B</b>[P L]: “Fraternity/sorority – service” <b>Q11C</b>[P L]: “Fraternity/sorority – social” <b>Q11D</b>[P L]: “Honorary organizations” <b>Q11E</b>[P L]: “International/ethnic/cultural organizations” <b>Q11F</b>[P L]: “Intramural/club sports” <b>Q11G</b>[P L]: “Political/social-action organizations” <b>Q11H</b>[P L]: “Professional organizations” <b>Q11I</b>[P L]: “Religious organizations” <b>Q11J</b>[P L]: “Service organizations (other than fraternity/sorority)” <b>Q11K</b>[P L]: “Social organizations (other than fraternity/sorority)” <b>Q11L</b>[P L]: “Student government organizations” <b>Q11M</b>[P L]: “Varsity athletic teams”</p>	0 = no response / no 1 = yes
<b>Q12 R_Q12</b>	“On average, how many hours per week have you been employed during the 2005-06 academic year?” This question was recoded for the crosstabs report only to represent hour or work categories.	(integer number; blank = no response); Outliers were defined as average number of hours worked per week > 80 hours and were recoded as missing on this variable. 1 = “0-10 hours” 2 = “11-20 hours” 3 = “21-30 hours” 4 = “31-40 hours” 5 = “41-60 hours” 6 = “61-80 hours”

<b>Q13</b>	“Religious affiliation:”	blank = no response 1 = “Agnostic” 2 = “Atheist” 3 = “Buddhist” 4 = “Christian” 5 = “Hindu”
		6 = “Islamic” 7 = “Jewish” 8 = “Native American Religion” 9 = “Non-religious/Secular” 10 = “Unitarian/Universalist” 11 = “Other”
<b>Q14</b>	“Please specify your other religious affiliation:” [Q13 = 11]	(text; blank = no response or skipped)
<b>Q15</b>	“What is your marital status?”	blank = no response 1 = “Single/Never Married or Partnered” 2 = “Married/Partnered” 3 = “Separated” 4 = “Divorced” 5 = “Widowed” 6 = “Other”
<b>R_Q16</b>	“What is your relationship status?”	blank = no response 1 = “Not in a relationship” 2 = “In a relationship but not living with partner” 3 = “In a relationship and living with partner”

<b>R_Q17</b>	“What is your sexual orientation?”	blank = no response 1 = “Bisexual” 2 = “Gay/Lesbian” 3 = “Heterosexual” 4 = “Questioning”
<b>Q18</b>	“Are you transgendered?”	blank = no response 1 = “Yes” 2 = “No”
<b>(R_Q19)</b>	“In the past 12 months, on average, I have:” <b>Q19A:</b> “used tobacco” <b>Q19B:</b> “drunk 5 or more drinks of alcohol in a 24 hour period” <b>Q19C:</b> “used marijuana” <b>Q19D:</b> “used cocaine” <b>Q19E:</b> “used hallucinogenic drugs (ie: LSD, mushrooms, ecstasy, etc.)” <b>Q19F:</b> “used stimulants (ie: Adderall, Ritalin, amphetamine, etc.) when they were not prescribed for me”	blank = no response 1 = “Daily” 2 = “Weekly” 3 = “Twice or more per month” 4 = “Once a month” 5 = “Seldom” 6 = “Never”
<b>(Q20)</b>	“From which of the following have you ever received psychological or mental health services:” <b>Q20A:</b> “Counselor/therapist/psychologist” <b>Q20B:</b> “Psychiatrist” <b>Q20C:</b> “Other medical provider (physician, nurse, etc.)” <b>Q20D:</b> “Clergy” <b>Q20E:</b> “None”	blank = skipped 0 = no response / no 1 = yes
<b>Q21</b>	“Have you ever received services from your college/university counseling center?”	blank = no response or skipped 1 = “Yes” 2 = “No”

<b>Q22</b>	“Have you ever taken medication for mental health concerns?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>Q23</b>	“Have you ever been hospitalized for mental health reasons?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>(Q24)</b>	“Indicate if you have had any of the following thoughts in the past 12 months:” <b>Q24A:</b> “I wish this would all just end” <b>Q24B:</b> “I wish I was dead”	blank = skipped 0 = no response / no 1 = yes
<b>R_Q25</b>	“What phrase best describes you?”	blank = no response or skipped 1 = “I have had some type of suicidal thought on a regular basis for several years.” 2 = “I have repetitive episodes of suicidal thoughts with periods in between of no suicidal thoughts at all.” 3 = “I have had a few discrete periods in my life of having suicidal thoughts.” 4 = “I have only had one period in my life of having suicidal thoughts.” 5 = “I have never had suicidal thoughts.”
<b>Q26</b>	“Have you ever seriously <i>considered</i> attempting suicide?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>Q27</b>	“Please estimate the number of ‘periods in your life’ that you have seriously <i>considered</i> attempting suicide. This ‘period in your life’ could be a day, a week, or even several months in which you had persistent suicidal thoughts with no more than a couple of days of relief from these thoughts.” [Q26 = 1]	(integer number; blank = no response or skipped)

<b>Q28</b>	“How many times have you actually attempted suicide in your whole life?”	(integer number; blank = no response or skipped)
<b>Q29</b>	“During the past 12 months, have you seriously <i>considered</i> attempting suicide?” (respondent is required to answer this question)	blank = no response or skipped 1 = “Yes” 2 = “No”
	<b>Skip:</b> respondents who answered “no” to Q29 skip to the end.	
<b>Q30</b>	“Please estimate how many periods over the past 12 months you have seriously <i>considered</i> attempting suicide. This ‘period’ could be a day, a week, or even several months in which you had persistently considered attempting suicide with no more than a couple of days of relief from these thoughts.”	(integer number; blank = no response or skipped)
<b>R_Q31</b>	“During the past 12 months, you may have had one or more periods of seriously <i>considering</i> attempting suicide, but on average, please estimate for how long you seriously <i>considered</i> attempting suicide during these periods:”	blank = no response or skipped 1 = “Nearly continuous throughout the past 12 months” 2 = “Many months” 3 = “A month” 4 = “Many weeks” 5 = “A week” 6 = “Many days” 7 = “A full day” 8 = “Several hours in a day” 9 = “An hour” 10 = “A few minutes” 11 = “A few seconds”
<b>R_Q32</b>	“When you has thoughts over the past 12 months of seriously <i>considering</i> attempting suicide, how strong were these thoughts on average?”	blank = no response or skipped 1 (“very strong”) ... 2 ... 3 ... 4 ... 5 (“very weak”)
<b>R_Q33</b>	“To what extent did you thoughts of seriously <i>considering</i> a suicide attempt interfere with your academic performance?”	blank = no response or skipped 1 (“ very large extent”) ... 2 ... 3 ... 4 ... 5 (“not at all”)

<b>R_Q34</b>	“At the period/s that you seriously <i>considered</i> attempting suicide over the past 12 months, which phrase best describes your thoughts about your would attempt suicide?”	blank = no response or skipped 1 = “I had a specific plan in mind.” 2 = “I have thought about some ways of doing it, but never seriously considered how I would do it.” 3 = “I never considered how I would attempt suicide.”
<b>Q35</b>	“What was the primary way that you <i>considered</i> attempting suicide?” [Q34 = 3]	(text response; blank = no response or skipped)
<b>R_Q36</b>	“During the period/s in the past 12 months that you seriously <i>considered</i> attempting suicide, how strong was your intention to kill yourself?”	blank = no response or skipped 1 (“very strong”) ... 2 ... 3 ... 4 ... 5 (“very weak”)
<b>(Q37)</b>	“Which of the following did you do during the period/s in the past 12 months during which you seriously <i>considered</i> attempting suicide?” <b>Q37A</b> : “began to gather the material that you would need to kill yourself” <b>Q37B</b> : “wrote a suicide note” <b>Q37C</b> : “did a practice run of a suicide attempt” <b>Q37D</b> : “began to try to kill yourself, then changed your mind” <b>Q37E</b> : “none of the above”	0 = no response / no 1 = yes
<b>Q38</b>	“In times of suicidal crisis, people sometimes turn to others for support. After first recognizing that you were seriously <i>considering</i> attempting suicide, how many people did you tell about these thoughts?”	blank = no response or skipped 1 = “One” 2 = “Two” 3 = “Three or more” 4 = “I did not tell anyone”
<b>Group:</b> the Q39 questions only appear to the respondent if they answered one or more to Q38.		



<b>Q39A</b>	“Who was the first person you told about these thoughts?”	blank = no response or skipped 1 = “mother” 2 = “father” 3 = “sibling” 4 = “other relative” 5 = “spouse/partner” 6 = “boyfriend/girlfriend” 7 = “friend” 8 = “roommate” 9 = “co-worker” 10 = “resident advisor (RA)” 11 = “professor” 12 = “college health center medical provider (physician, nurse, etc.)” 13 = “off-campus medical provider (physician, nurse, etc.)” 14 = “college health center psychiatrist” 15 = “off-campus psychiatrist” 16 = “college health center counselor (psychologist, social worker, etc.)” 17 = “off-campus counselor (psychologist, social worker, etc.)” 18 = “clergy” 19 = “other”
<b>Q39B</b>	(no prompt; provided for “other” response to Q39A) [Q39A = 19]	(text; blank = no response or skipped)
<b>R_Q39C</b>	“How helpful was this person in dealing with your suicidal thoughts?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q39D</b>	“Did this person advise you to seek professional help?” [Q39A >= 1 and Q39A <= 11 or Q39A = 19]	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>Group:</b> the Q40 questions only appear to the respondent if they answered two or more to Q38.		
<b>Q40A</b>	“Who was the second person you told about these thoughts?”	(same mapping as Q39A)
<b>Q40B</b>	(no prompt; provided for “other” response to Q40A) [Q40A = 19]	(text; blank = no response or skipped)
<b>R_Q40C</b>	“How helpful was this person in dealing with your suicidal thoughts?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q40D</b>	“Did this person advise you to seek professional help?” [Q40A >= 1 and Q40A <= 11 or Q40A = 19]	blank = no response or skipped 1 = “Yes” 2 = “No”

	<b>Group:</b> the Q41 questions only appear to the respondent if they answered three or more to Q38.	
<b>Q41A</b>	“Who was the third person you told about these thoughts?”	(same mapping as Q39A)
<b>Q41B</b>	(no prompt; provided for “other” response to Q41A) [Q41A = 19]	(text; blank = no response or skipped)
<b>R_Q41C</b>	“How helpful was this person in dealing with your suicidal thoughts?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q41D</b>	“Did this person advise you to seek professional help?” [Q41A >= 1 and Q41A <= 11 or Q41A = 19]	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>Q42</b>	“Why did you decide not to tell anyone about your thoughts?” [Q38 = 4]	(text; blank = no response or skipped)
<b>Q43</b>	“Some people receive assistance from professionals (counselors, medical providers, clergy) for coping with suicidal thoughts. Which of the following statements best describes you?”	blank = no response or skipped 1 = “I never receive professional help” 2 = “I was already receiving professional help when these thoughts first appeared” 3 = “I received professional help immediately after recognizing these suicidal thoughts” 4 = “I received professional help after some time has passed, but before I ever attempted suicide” 5 = “I received professional help after I had attempted suicide”

<b>(Q44)</b>	“From whom did you receive psychological, psychiatric, or other mental health services after recognizing that you were seriously <i>considering</i> a suicide attempt in the past 12 months?” <b>Q44A:</b> “I did not receive any such services” <b>Q44B:</b> “medical provider (physician, nurse)” <b>Q44C:</b> “psychiatrist” <b>Q44D:</b> “psychologist/social worker/counselor” <b>Q44E:</b> “clergy”	0 = no response / no 1 = yes
<b>Group:</b> the Q45 questions only appear to the respondent if they answered yes to Q44B. This group had the heading: “Please answer the following questions about the mental health services you received from a medical provider.”		
<b>Q45A</b>	“Please estimate the number of times you met with this medical provider:”	(integer number; blank = no response or skipped)
<b>Q45B</b>	“Are you currently seeing this medical provider?”	blank = no response or skipped
		1 = “Yes” 2 = “No”
<b>Q45C</b>	“Is this medical provider associated with your college or university’s student services?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>R_Q45D</b>	“How helpful was this medical provider in preventing you from committing suicide?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q45E</b>	“How difficult was it to access the services of this medical provider?”	blank = no response or skipped 1 (“not at all difficult”) ... 2 ... 3 ... 4 ... 5 (“very difficult”)
<b>Group:</b> the Q46 questions only appear to the respondent if they answered yes to Q44C. This group had the heading: “Please answer the following questions about the mental health services you received from a psychiatrist.”		
<b>Q46A</b>	“Please estimate the number of times you met with this psychiatrist:”	(integer number; blank = no response or skipped)

<b>Q46B</b>	“Are you currently seeing this psychiatrist?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>Q46C</b>	“Is this psychiatrist associated with your college or university’s student services?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>R_Q46D</b>	“How helpful was this psychiatrist in preventing you from committing suicide?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q46E</b>	“How difficult was it to access the services of this psychiatrist?”	blank = no response or skipped 1 (“not at all difficult”) ... 2 ... 3 ... 4 ... 5 (“very difficult”)
<b>Group:</b> the Q47 questions only appear to the respondent if they answered yes to Q44D. This group had the heading: “Please answer the following questions about the mental health services you received from a psychologist, social worker or counselor.”		
<b>Q47A</b>	“Please estimate the number of times you met with this psychologist, social worker or counselor:”	(integer number; blank = no response or skipped)
<b>Q47B</b>	“Are you currently seeing this psychologist, social worker or counselor?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>Q47C</b>	“Is this psychologist, social worker or counselor associated with your college or university’s student services?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>R_Q47D</b>	“How helpful was this psychologist, social worker or counselor in preventing you from committing suicide?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)

<b>Q47E</b>	“How difficult was it to access the services of this psychologist, social worker or counselor?”	blank = no response or skipped 1 (“not at all difficult”) ... 2 ... 3 ... 4 ... 5 (“very difficult”)
	<b>Group:</b> the Q48 questions only appear to the respondent if they answered yes to Q44E. This group had the heading: “Please answer the following questions about the mental health services you received from clergy.”	
<b>Q48A</b>	“Please estimate the number of times you met with clergy:”	(integer number; blank = no response or skipped)
<b>Q48B</b>	“Are you currently seeing clergy?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>Q48C</b>	“Is this clergy associated with your college or university’s student services?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>R_Q48D</b>	“How helpful was this clergy in preventing you from committing suicide?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not very helpful”)
<b>Q48E</b>	“How difficult was it to access the services of this clergy?”	blank = no response or skipped 1 (“not at all difficult”) ... 2 ... 3 ... 4 ... 5 (“very difficult”)
<b>Q49</b>	“Did any of the professionals from whom you sought help do a written or verbal “no suicide” or “no harm” contract with you?” [Q44B = 1 or Q44C = 1 or Q44D = 1 or Q44E = 1]	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>R_Q50</b>	“Please rate how much of an impact this contract had on your decision about attempting suicide.” [Q49 = 1]	blank = no response or skipped 1 (“a great impact”) ... 2 ... 3 ... 4 ... 5 (“no impact”)
<b>Q51</b>	“After having seriously <i>considered</i> attempting suicide in the past 12 months, did you take any prescribed medication to help you with these suicidal thoughts?”	blank = no response or skipped 1 = “Yes” 2 = “No”

<b>R_Q52</b>	“How helpful was the medication in preventing you from committing suicide?” [Q51 = 1]	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q53</b>	“After having seriously <i>considered</i> attempting suicide in the past 12 months, were you hospitalized to help you with these suicidal thoughts?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>R_Q54</b>	“How helpful was the hospitalization to preventing you from committing suicide?” [Q53 = 1]	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q55</b>	“Did you receive post-hospitalization follow-up to help you deal with your suicidal thoughts?” [Q53 = 1]	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>R_Q56</b>	“How helpful was the post-hospitalization follow-up in preventing you from committing suicide?” [Q55 = 1]	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)

<p><b>(R_Q57 A-L)</b></p>	<p>“On average over the past 12 months, please rate the extent to which each of the following contributed to your seriously <i>considering</i> suicide:” <b>R_Q57A:</b> “problems with school/academics” <b>R_Q57B:</b> “problems with friendships” <b>R_Q57C:</b> “problems with family relationships” <b>R_Q57D:</b> “problems with romantic relationships” <b>R_Q57E:</b> “problems with finances” <b>R_Q57F:</b> “problems with alcohol/drugs” <b>R_Q57G:</b> “sexual assault” <b>R_Q57H:</b> “relationship violence” <b>R_Q57I:</b> “get relief from emotional or physical pain” <b>R_Q57J:</b> “show others the extent of my unhappiness/pain” <b>R_Q57K:</b> “punish others for what they did” <b>R_Q57L:</b> “a desire to end my life”</p>	<p>blank = no response or skipped 1 (“very large impact”) ... 2 ... 3 ... 4 ... 5 (“very small impact”)</p>
<p><b>(R_Q58)</b></p>	<p>“How much did the following words describe you during a typical time you were seriously <i>considering</i> a suicide attempt during the past 12 months?” <b>R_Q58A:</b> “angry”</p>	<p>blank = no response or skipped 1 (“described me very much ) ... 2 ... 3 ... 4 ... 5 (“not at all”)</p>
	<p><b>R_Q58B:</b> “anxious/worried” <b>R_Q58C:</b> “sad” <b>R_Q58D:</b> “guilty” <b>R_Q58E:</b> “lonely/isolated” <b>R_Q58F:</b> “hopeless” <b>R_Q58G:</b> “helpless” <b>R_Q58H:</b> “anxious/panic”</p>	
<p><b>Q59</b></p>	<p>“Which of the following best described your relational status while you were seriously <i>considering</i> suicide during the past 12 months?”</p>	<p>blank = no response or skipped 1 = “in a romantic relationship with a boyfriend/girlfriend/partner/spouse” 2 = “not in a romantic relationship”</p>

<b>Q60</b>	“Had you ever seriously <i>considered</i> attempting suicide before coming to your current college/university?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>(Q61)</b>	“Which, if any, of the following occurred before you seriously <i>considered</i> attempting suicide in the past 12 months?” <b>Q61A</b> : “recent suicide of a friend or family member” <b>Q61B</b> : “recent death of a friend or family member” <b>Q61C</b> : “recent breakup or loss of a friendship” <b>Q61D</b> : “recent breakup or loss of a romantic relationship” <b>Q61E</b> : “recent family problems” <b>Q61F</b> : “recent financial problems” <b>Q61G</b> : “recent academic problems” <b>Q61H</b> : “sexual assault” <b>Q61I</b> : “relationship violence” <b>Q61J</b> : “recent trauma/victimization (assault, accident, etc.)” <b>Q61K</b> : “hurting yourself in a non-suicidal way (cutting burning, hitting yourself)” <b>Q61L</b> : “recent conflict regarding my sexual orientation” <b>Q61M</b> : “none of the above”	0 = no response / no 1 = yes
<b>Q62</b>	“Have you <i>attempted</i> suicide with the past 12 months?” (respondent is required to answer this question)	blank = no response or skipped 1 = “Yes” 2 = “No”
	<b>Skip</b> : respondents who answered “no” to Q62 skip to Q84.	
<b>Q63</b>	“During the last 12 months, how many times did you <i>attempt</i> suicide?”	(integer number; blank = no response or skipped)
<b>Q64</b>	“Did any of your suicide attempts in the past 12 months result in an injury, poisoning, overdose, etc. that had to be treated by a doctor or nurse?”	blank = no response or skipped 1 = “Yes” 2 = “No”



<b>Q65</b>	“What method did you choose in your most recent suicide attempt?”	(text; blank = no response or skipped)
<b>Q66</b>	“When you <i>attempted</i> suicide most recently, were you using drugs or alcohol at the moment of your suicide attempt?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>Q67</b>	“Please list what kind of drugs/alcohol you were using and how much you had used:” [Q66 = 1]	(text; blank = no response or skipped)
<b>Q68</b>	“After <i>attempting</i> suicide in the past 12 months, how many people did you tell about the attempt?”	blank = no response or skipped 1 = “One” 2 = “Two” 3 = “Three or more” 4 = “I did not tell anyone”
<b>Group:</b> the Q69 questions only appear to the respondent if they answered one or more to Q68.		

<b>Q69A</b>	“Who was the first person you told about your suicide attempt(s)?”	blank = no response or skipped 1 = “mother” 2 = “father” 3 = “sibling” 4 = “other relative” 5 = “spouse/partner” 6 = “boyfriend/girlfriend” 7 = “friend” 8 = “roommate” 9 = “co-worker” 10 = “resident advisor (RA)” 11 = “professor” 12 = “college health center medical provider (physician, nurse, etc.)” 13 = “off-campus medical provider (physician, nurse, etc.)” 14 = “college health center psychiatrist” 15 = “off-campus psychiatrist” 16 = “college health center counselor (psychologist, social worker, etc.)” 17 = “off-campus counselor (psychologist, social worker, etc.)” 18 = “clergy” 19 = “other”
<b>Q69B</b>	(no prompt; provided for “other” response to Q69A) [Q69A = 19]	(text; blank = no response or skipped)
<b>R_Q69C</b>	“How helpful was this first person to you in dealing with your suicide attempt?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q69D</b>	“Did this first person advise you to seek professional help?” [Q69A >= 1 and Q69A <= 11 or Q69A = 19]	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>Group:</b> the Q70 questions only appear to the respondent if they answered two or more to Q68.		

<b>Q70A</b>	“Who was the second person you told about your suicide attempt(s)?”	blank = no response or skipped 1 = “mother” 2 = “father” 3 = “sibling” 4 = “other relative” 5 = “spouse/partner” 6 = “boyfriend/girlfriend” 7 = “friend” 8 = “roommate” 9 = “co-worker” 10 = “resident advisor (RA)” 11 = “professor” 12 = “college health center medical provider (physician, nurse, etc.)” 13 = “off-campus medical provider (physician, nurse, etc.)” 14 = “college health center psychiatrist” 15 = “off-campus psychiatrist” 16 = “college health center counselor (psychologist, social worker, etc.)” 17 = “off-campus counselor (psychologist, social worker, etc.)” 18 = “clergy” 19 = “other”
<b>Q70B</b>	(no prompt; provided for “other” response to Q70A) [Q70A = 19]	(text; blank = no response or skipped)
<b>R_Q70C</b>	“How helpful was this second person to you in dealing with your suicide attempt?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q70D</b>	“Did this second person advise you to seek professional help?” [Q70A >= 1 and Q70A <= 11 or Q70A = 19]	blank = no response or skipped 1 = “Yes”
		2 = “No”

	<b>Group:</b> the Q71 questions only appear to the respondent if they answered three or more to Q68.	
<b>Q71A</b>	“Who was the third person you told about your suicide attempt(s)?”	blank = no response or skipped 1 = “mother” 2 = “father” 3 = “sibling” 4 = “other relative” 5 = “spouse/partner” 6 = “boyfriend/girlfriend” 7 = “friend” 8 = “roommate” 9 = “co-worker” 10 = “resident advisor (RA)” 11 = “professor” 12 = “college health center medical provider (physician, nurse, etc.)” 13 = “off-campus medical provider (physician, nurse, etc.)” 14 = “college health center psychiatrist” 15 = “off-campus psychiatrist” 16 = “college health center counselor (psychologist, social worker, etc.)” 17 = “off-campus counselor (psychologist, social worker, etc.)” 18 = “clergy” 19 = “other”
<b>Q71B</b>	(no prompt; provided for “other” response to Q71A) [Q71A = 19]	(text; blank = no response or skipped)
<b>R_Q71C</b>	“How helpful was this third person to you in dealing with your suicide attempt?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q71D</b>	“Did this third person advise you to seek professional help?” [Q71A >= 1 and Q71A <= 11 or Q71A = 19]	blank = no response or skipped 1 = “Yes” 2 = “No”

Q72	“Why did you decide not to tell anyone about your attempt?” [Q68 = 4]	(text; blank = no response or skipped)
(Q73)	“From whom did you receive psychological, psychiatric or other mental health services after <i>attempting</i> suicide in the past 12 months?” Q73A: “I did not receive any such services” Q73B: “medical provider (physician, nurse)” Q73C: “psychiatrist” Q73D: “psychologist/social worker/counselor” Q73E: “clergy”	0 = no response / no 1 = yes
<b>Group:</b> the Q74 questions only appear to the respondent if they answered yes to Q73B. This group had the heading: “Please answer the following questions about the mental health services you received from a medical provider.”		
Q74A	“Please estimate the number of times you met with this medical provider:”	(integer number; blank = no response or skipped)
Q74B	“Are you currently seeing this medical provider?”	blank = no response or skipped 1 = “Yes” 2 = “No”
Q74C	“Is this medical provider associated with your college or university’s student services?”	blank = no response or skipped 1 = “Yes” 2 = “No”
R_Q74D	“How helpful was this medical provider in preventing you from committing suicide?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
Q74E	“How difficult was it to access the services of this medical provider?”	blank = no response or skipped 1 (“not at all difficult”) ... 2 ... 3 ... 4 ... 5 (“very difficult”)

	<b>Group:</b> the Q75 questions only appear to the respondent if they answered yes to Q73C. This group had the heading: “Please answer the following questions about the mental health services you received from a psychiatrist.”	
<b>Q75A</b>	“Please estimate the number of times you met with this psychiatrist:”	(integer number; blank = no response or skipped)
<b>Q75B</b>	“Are you currently seeing this psychiatrist?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>Q75C</b>	“Is this psychiatrist associated with your college or university’s student	blank = no response or skipped
	services?”	1 = “Yes” 2 = “No”
<b>R_Q75D</b>	“How helpful was this psychiatrist in preventing you from committing suicide?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q75E</b>	“How difficult was it to access the services of this psychiatrist?”	blank = no response or skipped 1 (“not at all difficult”) ... 2 ... 3 ... 4 ... 5 (“very difficult”)
	<b>Group:</b> the Q76 questions only appear to the respondent if they answered yes to Q73D. This group had the heading: “Please answer the following questions about the mental health services you received from a psychologist, social worker or counselor.”	
<b>Q76A</b>	“Please estimate the number of times you met with this psychologist, social worker or counselor:”	(integer number; blank = no response or skipped)
<b>Q76B</b>	“Are you currently seeing this psychologist, social worker or counselor?”	blank = no response or skipped 1 = “Yes” 2 = “No”

<b>Q76C</b>	“Is this psychologist, social worker or counselor associated with your college or university’s student services?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>R_Q76D</b>	“How helpful was this psychologist, social worker or counselor in preventing you from committing suicide?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q76E</b>	“How difficult was it to access the services of this psychologist, social worker or counselor?”	blank = no response or skipped 1 (“not at all difficult”) ... 2 ... 3 ... 4 ... 5 (“very difficult”)
<b>Group:</b> the Q77 questions only appear to the respondent if they answered yes to Q73E. This group had the heading: “Please answer the following questions about the mental health services you received from clergy.”		
<b>Q77A</b>	“Please estimate the number of times you met with clergy:”	(integer number; blank = no response or skipped)
<b>Q77B</b>	“Are you currently seeing clergy?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>Q77C</b>	“Is this clergy associated with your college or university’s student services?”	blank = no response or skipped 1 = “Yes”
		2 = “No”
<b>R_Q77D</b>	“How helpful was this clergy in preventing you from committing suicide?”	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q77E</b>	“How difficult was it to access the services of this clergy?”	blank = no response or skipped 1 (“not at all difficult”) ... 2 ... 3 ... 4 ... 5 (“very difficult”)
<b>Q78</b>	“After having <i>attempted</i> suicide in the past 12 months, did you take any prescribed medication to help you with further suicidal thoughts?”	blank = no response or skipped 1 = “Yes” 2 = “No”

<b>R_Q79</b>	“How helpful was this medication in preventing you from committing suicide?” [Q78 = 1]	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q80</b>	“After having <i>attempted</i> suicide in the past 12 months, were you hospitalized to help you with further suicidal thoughts?”	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>R_Q81</b>	“How helpful was this hospitalization in preventing you from committing suicide?” [Q80 = 1]	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
<b>Q82</b>	“Did you receive any post-hospitalization follow-up to help you deal with your suicidal thoughts?” [Q80 = 1]	blank = no response or skipped 1 = “Yes” 2 = “No”
<b>R_Q83</b>	“How helpful was the post-hospitalization follow-up in preventing you from committing suicide?” [Q82 = 1]	blank = no response or skipped 1 (“very helpful”) ... 2 ... 3 ... 4 ... 5 (“not at all helpful”)
	<b>Skip:</b> respondents who answered “yes” to Q62 skip to Q85.	
<b>(R_Q84 A-K)</b>	“Please rate the extent to which the following factors were important in preventing you from <i>attempting</i> suicide:” <b>R_Q84A:</b> “Disappointing/hurting my family” <b>R_Q84B:</b> “Disappointing/hurting my friends” <b>R_Q84C:</b> “Disappointing/hurting my partner/spouse/boyfriend/girlfriend” <b>R_Q84D:</b> “Cooperative relationship with a mental health professional” <b>R_Q84E:</b> “Support of my family”	blank = no response or skipped 1 (“very important”) ... 2 ... 3 ... 4 ... 5 (“not important”)



	<b>R_Q84F:</b> “Support of my friends” <b>R_Q84G:</b> “Support of my partner/spouse/boyfriend/girlfriend” <b>R_Q84H:</b> “Religious/moral beliefs” <b>R_Q84I:</b> “Feelings hopeful/having plans for my future” <b>R_Q84J:</b> “Wanting to finish school” <b>R_Q84K:</b> “My pet or pets”	
<b>Q85</b>	“Are you currently considering <i>attempting</i> suicide?” (respondent is required to answer this question)	blank = no response or skipped 1 = “Yes” 2 = “No”
	<b>Skip:</b> respondents who answered “yes” to Q85 skip to the end.	
<b>Q86</b>	“Why do you believe you stopped considering a suicide attempt?”	(text; blank = no response or skipped)
<b>Q87</b>	“What did you find most helpful in resolving the suicide crisis?”	(text; blank = no response or skipped)
<b>Q88</b>	“What did you find least helpful in resolving the suicide crisis?”	(text; blank = no response or skipped)
<b>Q89</b>	“What else could have been helpful in assisting you in the resolution of the suicide crisis?”	(text; blank = no response or skipped)

## Major Field of Study

### Arts and Humanities

- 1 = "Art, Fine and Applied"
- 2 = "English (Language and Literature)"
- 3 = "History"
- 4 = "Journalism"
- 5 = "Language and Lit. (except English)"
- 6 = "Music"
- 7 = "Philosophy"
- 8 = "Speech"
- 9 = "Theater or Drama"
- 10 = "Theology or Religion"
- 11 = "Other Arts or Humanities"

### Biological Science

- 12 = "Biology (General)"
- 13 = "Biochemistry or Biophysics"
- 14 = "Botany"
- 15 = "Marine (Life) Science"
- 16 = "Microbiology or Bacteriology"
- 17 = "Zoology"
- 18 = "Other Biological Sciences"

### Business

- 19 = "Accounting"
- 20 = "Business Adm. (General)"
- 21 = "Finance"
- 22 = "Marketing"
- 23 = "Management"
- 24 = "Secretarial Studies"
- 25 = "Other Business"

### Education

- 26 = "Business Education"
- 27 = "Educational Psychology"
- 28 = "Elementary Education"
- 29 = "Music or Art Education"
- 30 = "Physical Education or Recreation"
- 31 = "Secondary Education"
- 32 = "Special Education"
- 33 = "Other Education"

### Engineering

- 34 = "Aeronautical or Astronautical Engineering"
- 35 = "Civil Engineering"
- 36 = "Chemical Engineering"
- 37 = "Electrical or Electronic Engineering"
- 38 = "Industrial Engineering"
- 39 = "Mechanical Engineering"
- 40 = "Other Engineering"

#### Physical Science

- 41 = "Astronomy"
- 42 = "Atmospheric Science (including Meteorology)"
- 43 = "Chemistry"
- 44 = "Earth Science"
- 45 = "Marine Science (including Oceanography)"
- 46 = "Mathematics"
- 47 = "Physics"
- 48 = "Statistics"
- 49 = "Other Physical Science"

#### Professional

- 50 = "Architecture or Urban Planning"
- 51 = "Dentistry"
- 52 = "Home Economics"
- 53 = "Health Technology (Medical, Dental, Lab.)"
- 54 = "Law"
- 55 = "Library or Archival Science"
- 56 = "Medicine"
- 57 = "Nursing"
- 58 = "Pharmacy"
- 59 = "Pre dental, Pre medical, Preveterinary"
- 60 = "Therapy (occupational, physical, speech)"
- 61 = "Other Professional"

#### Social Science

- 62 = "Anthropology"
- 63 = "Economics"
- 64 = "Ethnic Studies"
- 65 = "Geography"
- 66 = "Political Science (government, international relations)"
- 67 = "Psychology"
- 68 = "Social Work"

- 69 = "Sociology"
- 70 = "Women's Studies"

71 = "Other Social Science"

Technical

72 = "Building Trades"

73 = "Data Processing or Computer Programming"

74 = "Drafting or Design"

75 = "Electronics"

76 = "Mechanics"

77 = "Other Technical"

Other Fields

78 = "Agriculture"

79 = "Communications (radio, TV, etc.)"

80 = "Computer Science"

8 = "Forestry"

8 = "Law Enforcement"

8 = "Military Service"

8 = "Other Field"

8 = "Undecided"

## Appendix C: Email Invitation &amp; Follow-ups

**Initial Invitation**

FROM: *Local Counseling Center Director* ([director@campus.edu](mailto:director@campus.edu))  
REPLY-TO: *Local Counseling Center Director* ([director@campus.edu](mailto:director@campus.edu))  
SUBJECT: *Name of Counseling Center* Invites You to Participate in a National Study

Dear [student name],

You have been randomly selected to represent [Campus Name] in a national study of student mental health. The results of this *anonymous* study are very important to [Campus Name], as we will use the information to help you, your friends, or your classmates through the serious emotional difficulties that can sometimes occur among [*If graduate student: graduate*] students.

This study focuses in particular on suicidal thoughts and behaviors. Current research suggests that a surprisingly large number of college [graduate] students contemplate suicide each year. Even if you have never had suicidal thoughts, chances are that some of your friends and classmates have had such thoughts. Regardless of your experiences with this topic, by participating in this anonymous study, you will help our campus determine the percentage of students suffering from suicidal thoughts and help us increase the effectiveness of the counseling services available to students in suicidal crisis on your campus and around the country.

If you consent to participate in this national study, you will be eligible for a random drawing for one of 100 gift certificates to Amazon.com (value = \$25 each) as well as 3 top prizes of \$1,000, \$750, and \$500 gift certificates to Amazon.com. 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 consent to take the study will be recorded and will make you eligible for the drawing.

You may access the study online at:

*<https://Study link>*.

The login page, hosted by the study's principal investigators at the University of Texas at Austin, includes full instructions and a consent form. If you have questions about the survey or have any difficulty accessing the survey on the Web, please reply to this e-mail or call me *at XXX-XXXX*.

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

Thank you for your help with this important project.

Sincerely,

*[Campus Counseling Center Director signature line]*

**First Follow-Up Invitation**

FROM: *Local Counseling Center Director (director@campus.edu)*  
REPLY-TO: *Local Counseling Center Director ([director@campus.edu](mailto:director@campus.edu))*  
SUBJECT: *Reminder: Name of Counseling Center Invites You to Participate in a National Study*

Dear [student name],

Last [day of week] I invited you to represent [Campus Name] in a national study of student mental health. This online study will require only 5 to 20 minutes of your time, and will qualify you for a random prize drawing (see below). The results of this *anonymous* study are very important to [Campus Name], as we will use the information to help you, your friends, or your classmates through the serious emotional difficulties that can sometimes occur among [*If graduate student: graduate*] students.

This study focuses in particular on suicidal thoughts and behaviors. Current research suggests that a surprisingly large number of college [graduate] students contemplate suicide each year. Even if you have never had suicidal thoughts, chances are that some of your friends and classmates have had such thoughts. Regardless of your experiences with this topic, by participating in this anonymous study, you will help our campus determine the percentage of students suffering from suicidal thoughts and help us increase the effectiveness of the counseling services available to students in suicidal crisis on your campus and around the country.

If you consent to participate in this national study, you will be eligible for a random drawing for one of 100 gift certificates to Amazon.com (value = \$25 each) as well as 3 top prizes of \$1,000, \$750, and \$500 gift certificates to Amazon.com. 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 consent to take the study will be recorded and will make you eligible for the drawing.

You may access the study online at:

*<https://Study link>.*

The login page, hosted by the study's principal investigators at the University of Texas at Austin, includes full instructions and a consent form. If you have questions about the survey or have any difficulty accessing the survey on the Web, please reply to this e-mail or call me at XXX-XXXX.

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

Thank you for your help with this important project.

Sincerely,

*[Campus Counseling Center Director signature line]*



**Second Follow-Up Invitation**

FROM: *Local Counseling Center Director* ([director@campus.edu](mailto:director@campus.edu))  
REPLY-TO: *Local Counseling Center Director* ([director@campus.edu](mailto:director@campus.edu))  
SUBJECT: Final Reminder: *Name of Counseling Center* Needs Your Help!

Dear [student name],

This is your last opportunity to represent [Campus Name] in a national study of student mental health. We know this is a busy time of year for you, but we hope you can donate 5 to 20 minutes of time to contribute to this research. The results of this *anonymous* study are very important to [Campus Name], as we will use the information to help you, your friends, or your classmates through the serious emotional difficulties that can sometimes occur among [*If graduate student: graduate*] students.

If you consent to participate in this national study, you will be eligible for a random drawing for one of 100 gift certificates to Amazon.com (value = \$25 each) as well as 3 top prizes of \$1,000, \$750, and \$500 gift certificates to Amazon.com. 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 consent to take the study will be recorded and will make you eligible for the drawing.

You may access the study online at:

*<https://Study link>*.

The login page, hosted by the study's principal investigators at the University of Texas at Austin, includes full instructions and a consent form. If you have questions about the survey or have any difficulty accessing the survey on the Web, please reply to this e-mail or call me at XXX-XXXX.

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

Thank you for your help with this important project.

Sincerely,

*[Campus Counseling Center Director signature line]*

## Appendix D: Consent Form

*IRB#*  
\_\_\_\_\_*Informed Consent to Participate in Research***The University of Texas at Austin**

You are being asked to participate in a research study. This document provides you with information about the study. Please read the information below. If you have any questions, please contact [NAME] at [NAME OF COUNSELING CENTER] at [director@campus.edu] or [XXX-XXXX] before deciding whether or not to take part. You can also contact the National Director of this research project, Chris Brownson, Ph.D., at 512-475-6939. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled.

This survey is anonymous. If you decide to participate, you will be one of approximately 75,000 students asked to take part in this research study. 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.

**Title of Research Study:** Suicidal Thoughts and Behavior among Undergraduate and Graduate Students in the United States

**Principal Investigators:**

Chris Brownson, Ph.D., Counseling & Mental Health Center, The University of Texas at Austin, (512) 475-6939.

Shanna Smith, Ph.D., Research Consulting, The University of Texas at Austin, (512) 475-9425

**Funding source:**

Contributions from participating colleges and universities.

**What is the purpose of this study?**

To determine the nature and extent of suicidal thoughts and behavior among undergraduate and graduate students across the country, and to explore better ways of providing support and assistance to these students.

**What will be done if you take part in this research study?**

You will be asked to answer a series of questions about yourself in this online survey. Depending on your responses, the survey may take between 5 and 20 minutes to complete. The survey is anonymous, and if there are any questions that you prefer not to answer, you may choose to skip them.

**What are the possible discomforts and risks?**

The survey may ask you to recall events that you are uncomfortable thinking about. If this happens, you may wish to take a break and come back to the survey at another time, or you may exit the survey permanently. You may also call [NAME OF COUNSELING CENTER] at [XXX-XXXX] to discuss any distressing or discomforting feelings. If you wish to discuss the information above or any other risks you may experience, you may contact the research study's local representative, [NAME], at [[director@campus.edu](mailto:director@campus.edu)] or [XXX-XXXX], or contact the Principal Investigator, Dr. Chris Brownson, at [cbrownson@mail.utexas.edu](mailto:cbrownson@mail.utexas.edu) or 512-475-6939.

**What are the possible benefits to you or to others?**

Current research suggests that a surprisingly large number of undergraduate and graduate students contemplate suicide each year. Even if you have never had suicidal thoughts, chances are that some of your friends and classmates have had such thoughts. Campus counseling centers need help determining how many students are dealing with suicidal thoughts and understanding how to reach out to and assist students who may be considering suicide. By participating in this study, you can help increase the effectiveness of the counseling services available to students in suicidal crisis on your campus and around the country.

**If you choose to take part in this study, will it cost you anything?**

No.

**Will you receive compensation for your participation in this study?**

No. However, you will be entered in a national drawing if you agree to participate in the study. If you consent to participate, you will be eligible for a random drawing for one of 100 gift certificates to Amazon.com (value = \$25 each) as well as 3 top prizes of \$1,000, \$750, and \$500 gift certificates to Amazon.com. Although your responses to the survey are anonymous – that is, we will not know which responses belong to you – your consent to take the study will be recorded and will make you eligible for the drawing.

**What if you are injured because of the study?**

This study does not involve physical risk. If, however, you are injured during the course of this study, no provisions have been made to provide treatment, medical care, or payment for such injury.

**If you do not want to take part in this study, what other options are available to you?**

**Participation in this study is entirely voluntary. You are free to refuse to be in the study, and your refusal will not influence current or future relationships with [Local Campus Name] or The University of Texas at Austin, which is where this research originates from.**

**How can you withdraw from this research study and who should you call if you have questions, complaints, or concerns?**

**If you wish to stop your participation in this research study for any reason, you should click on the “Withdraw from Study” link provided at the bottom of each survey page. You are free to withdraw your consent and stop participation in this research study at any time without penalty or loss of benefits for which you may be entitled.**

In addition, if you have complaints, concerns, or questions about this study, or your rights as a research participant, please contact The Office of Research Support and Compliance at The University of Texas at Austin, or Clarke A. Burnham, Ph.D., Chair of The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (512) 471-8871 / (512) 232-4383 / [orsc@uts.cc.utexas.edu](mailto:orsc@uts.cc.utexas.edu).

**How will your privacy and the confidentiality of your research records be protected?**

As noted above, this study is anonymous. Your actual survey responses are not linked to your name, and will never be associated with you or your personally identifiable information. Your consent or refusal to participate in the study is the only information that can be connected to you. Authorized persons from The University of Texas at Austin, its Institutional Review Board, and [Local Campus Name] have the legal right to review this information and will protect the confidentiality of those records to the extent permitted by law. Otherwise, this consent/refusal information will not be released without your consent unless required by law or a court order.

**Will the researchers benefit from your participation in this study?**

No.

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**Signature of Principal Investigator** *[this will be an image]*

**Date**

You have been informed about this study’s purpose, procedures, possible benefits and risks, and you have received a copy of this Form. You are encouraged to print out a copy of this page for your records. You have been given the opportunity to ask questions before you consent, and you have been told that you can ask other questions at any time. You voluntarily agree to participate in this study. By clicking on the “I Consent to Participate” button below, you are not waiving any of your legal rights.

(I Consent to Participate)

(I Decline to Participate)