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**In What Ways Do Students Grow after Trauma? Students' Self-Reported Domains
of Growth and the Relationship between Suicidality and Growth**

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**In What Ways Do Students Grow after Trauma? Students' Self-Reported Domains
of Growth and the Relationship between Suicidality and Growth**

by

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Stakeholders in college student mental health have called for a shift in focus from disease to wellness. In response, researchers have increasingly explored factors that foster and maintain mental health among this population (National Research Council and Institute of Medicine, 2009). One such germane factor is posttraumatic growth (PTG). Researchers in this domain posit that individuals can endure a subjectively traumatic experience, cope successfully with the effects of that trauma, and thereby function better than before the trauma. Researchers have acknowledged the sociocultural relativism of existing measures of PTG, suggesting differential growth potential among diverse populations and unidentified domains may exist. While a burgeoning area of research, existing knowledge of PTG indicates that college life may be characterized by optimized potential for growth (Meyerson, Grant, Carter, & Kilmer, 2011). Moreover, researchers have suggested PTG may relate positively to outcomes including perceived comprehensibility, manageability, and meaningfulness of life; accessing social support and helpers; and appreciation for life (Tedeschi & Calhoun, 1995).

Suicidality (i.e., morbid rumination, active suicidal thoughts, suicidal plans, and behaviors) at varying levels of severity may impact growth potential among the college student population. Suicide is considered the third leading cause of death among individuals 24 years and younger, and it is the second leading cause of death among college students (Center for Disease Control and Prevention, 2009; Suicide Prevention Resource Center, 2004). Further, Drum, Brownson, Burton Denmark, and Smith (2009) asserted a greater prevalence of suicidal ideation among college students than once believed. Data suggest that over half of students experience some level of suicidal ideation in their lifetime.

The proposed study aims to address persistent gaps in the literature through qualitative and quantitative analysis of cross-sectional data collected in 2011 by the National Research Consortium of Counseling Centers in Higher Education. Data were collected from college students across 74 national institutions. The prevalence of perceived PTG will be determined, and domains of PTG will be identified. The relationship among demographic variables, suicidality, and PTG will be tested to ascertain each independent variable's effect on the likelihood of endorsing overall PTG as well as PTG in each domain.

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Chapter 1: Introduction

Stakeholders in college student mental healthcare have called for a shift in focus from disease to wellness; therefore, researchers have increasingly exerted effort considering factors that maintain and foster well-being among this population (National Research Council and Institute of Medicine [NAS-IOM], 2009). One such germane factor is posttraumatic growth (PTG). While a burgeoning area of research, existing knowledge of PTG indicates that growth potential may be optimized during college years (Meyerson, Grant, Carter, & Kilmer, 2011); however, high risk of suicidal ideation and behaviors also marks this period of development. The effect of suicidality on growth among this population warrants consideration.

The deleterious effects of trauma have been demonstrated time and again, yet researchers have demonstrated recently that individuals can endure a subjectively traumatic experience, cope successfully with the effects of that trauma, and thereby function better than before the trauma. This increased level of functioning defines PTG. Tedeschi and Calhoun (1996) have explicated facets of the PTG development process, and they, as well as others, have created instruments to measure the construct; however, because this is an emergent area of research, many questions remain unanswered. PTG researchers have identified various dimensions of growth, but they have also acknowledged the sociocultural relativism of existing measures, conjecturing that undiscovered domains may exist. To fully understand PTG and expand upon current

literature, researchers must initially identify potential ways in which differing and diverse populations grow following trauma. Given college students' propensity for growth, understanding better the nature of PTG among this population is of paramount importance, particularly to stakeholders in college student mental health. Researchers have suggested PTG relates positively to outcomes that foster well-being (Tedeschi & Calhoun, 1995). However, the relationship between suicidality and growth remains unexamined. The prevalence of suicidality among college students dictates its consideration in relation to the development of PTG.

Suicide and suicidality remain problems on college campuses that receive national attention. Suicide is the third leading cause of death among individuals 24 years and younger, and it accounts for the second leading cause of death among college students (Center for Disease Control and Prevention [CDC], 2009; Suicide Prevention Resource Center [SPRC], 2004). Further, Drum, Brownson, Burton Denmark, and Smith (2009) asserted that suicidal ideation among college students is more common than once believed. Data suggest that over half of students have experienced some level of suicidal ideation in their lifetime, while 18% of undergraduate students and 15% of graduate students have seriously considered suicide at some point. This suicidality phenomenon may negatively impact growth potential among this population, and this relationship may, in turn, stimulate new population-based and individual-focused initiatives promoting well-being on campus.

Many researchers have posited the value of approaching college student mental health from a population health perspective (Drum et al., 2009; Knox, Conwell, & Caine, 2004). Rose (1985) theorized that targeting prevention strategies to reduce the population distribution of risk would yield greater benefit than focusing efforts solely to prevent disease among high risk individuals. Population-focused prevention strategies seek to reduce the incidence and prevalence of an outcome, like suicide, within a specified population. College counseling centers have traditionally served a role as provider of clinical care, particularly in times of crisis. More recently, counseling centers have begun to adopt a population-focused approach in addition to clinical services offered. Efforts to consider mental illness among an entire population have led researchers to consider the full spectrum of intervention points, including mental illness and health; therefore, investigators have initiated the identification of factors that protect individuals from developing mental illness and, further, those factors that may bolster mental health and well-being.

The proposed study uses data gathered from a national, multisite sample of diverse, higher education students. Overall, the proposed study will illuminate the incidence and nature of PTG among college students. The study employs qualitative methods to identify specific domains of growth endorsed by students following trauma, expanding upon the current conceptualization of PTG among college students. This knowledge could inform future measurement of the construct within the national college student population. The current study will also use quantitative analyses to explore the

impact of suicidality on the likelihood of experiencing PTG, a relationship yet to be considered in the literature. The determined effect will inform problem-focused, mental health promotion efforts on campuses.

Chapter 2: Integrative Analysis

Posttraumatic Growth

Recent empirical investigations suggest that many individuals perceive benefits of struggling through challenging circumstances, regardless of the type of preceding trauma (Tedeschi & Calhoun, 1996). Certainly, traumatic circumstances yield constellations of negative consequences affecting thoughts, emotions, behavior, and physicality (Tedeschi & Calhoun, 1995). An individual who has experienced a traumatic event may exhibit emotional and psychological symptoms like anger, guilt, anxiety, and depression; behavioral changes like withdrawal, sexual difficulties, aggression, and drug abuse; and physical symptoms like hyperarousal, gastrointestinal difficulties, fatigue, and muscle tension (Tedeschi & Calhoun, 1995; Shakespeare-Finch & Copping, 2006). Research on trauma and, most recently, Posttraumatic Stress Disorder (PTSD) provides evidence of the negative outcomes enumerated above, but relatively less attention has been given to the potentially positive outcomes of trauma.

Philosophical, religious and psychological accounts posit that undergoing trying circumstances engenders growth (Tedeschi & Calhoun, 1995). Ancient Greek tragedies depict heroes who are, as Sophocles described, “deinos.” This ambiguous word means simultaneously “wondrous” and “frightening” (Staley, 1985). Goheen (Staley, 1985) argues that Sophocles intended to describe man as “frightening” when one causes one’s downfall and “wondrous” when one engages in self-discovery; therefore, man can be

both good and flawed. Tragedies present to audiences this paradoxical notion that human flaws such as hubris cause suffering, yet only by confronting the crisis in which one finds oneself can one realize one's humanity and then seek redemption. Little (1989) refers to teachings of Christianity and Buddhism that address the universality of suffering. These and other religious teachings assert that only by approaching suffering can an individual move past it, and understanding suffering yields wisdom. Finally, psychologists and others in related fields – most notably existential psychologist Victor Frankl and sociologist Aaron Antonovsky – have considered ways in which individuals find meaning by choosing their responses to life's insurmountable conditions (e.g., suffering and mortality). Frankl asserted that the search for meaning is a defining characteristic of human nature, one that is necessary for development (Nelson, 2011). Regarding the experiences of those struggling subsequent to trauma, Frankl (as cited in, Tedeschi, Calhoun, & Cann, 2007) stated,

What was really needed was a fundamental change in our [concentration camp prisoner's] *attitude* [italics added] toward life... tasks, and therefore the meaning of life, differ from man to man, and from moment to moment... Sometimes the situation... may require him to shape his own fate by action. At other times it is more advantageous for him to make use of an opportunity for contemplation... Sometimes man may be required simply to accept his fate, and bear his cross.

Antonovsky (1979) called for a focus on survival, asking why some people remain healthy despite the prevalence of overwhelming challenge. Understanding this concept of salutogenesis, he asserted, could serve to reduce suffering and pain.

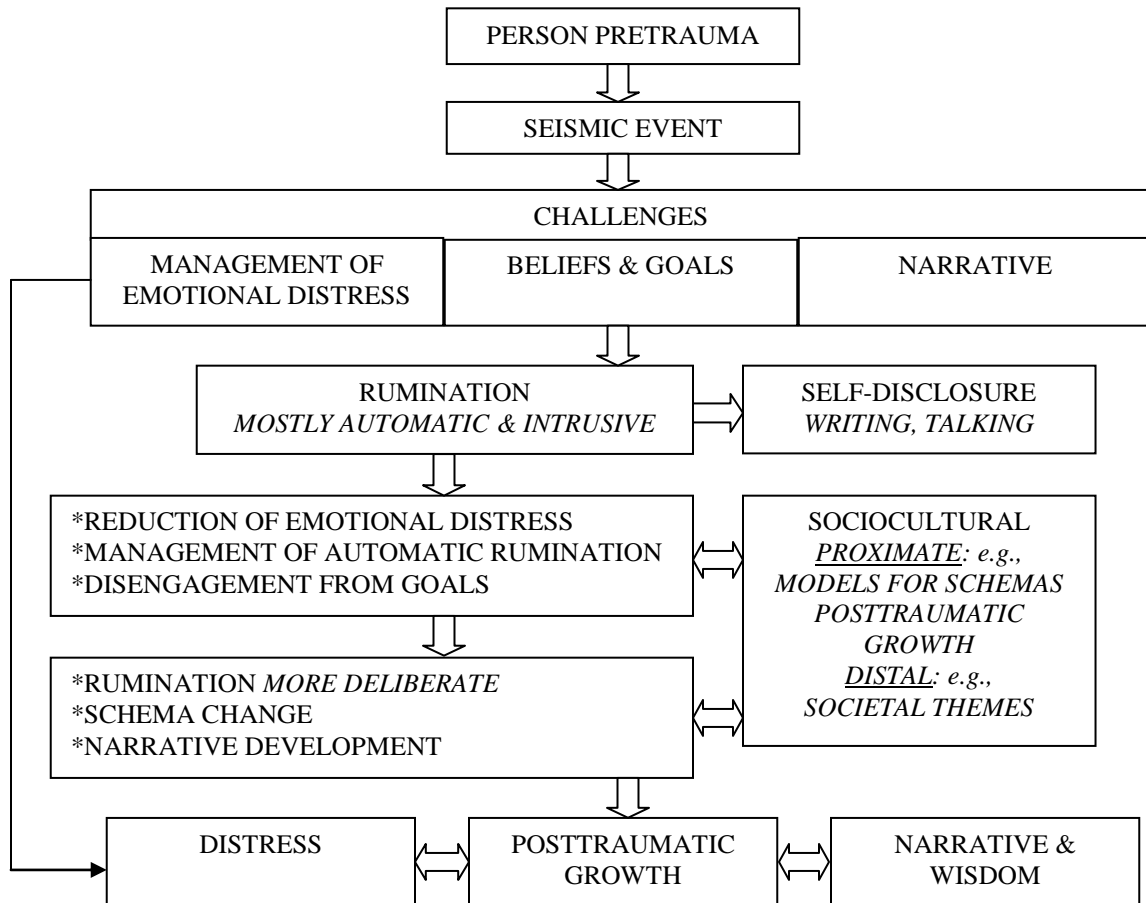
While historical texts address the concept of growth, only recently have researchers in the field of psychology begun to consider systematically the construct. Tedeschi and Calhoun (1995) defined posttraumatic growth (PTG) as “positive change experienced as a result of the struggle with trauma.” The *Diagnostic and Statistical Manual of Mental Disorders* (4th edition; *DSM-IV-TR*; American Psychiatric Association [APA], 2000) provides two criteria within the diagnosis of PTSD that constitute a traumatic event. First, an individual must encounter an event that threatens the life or physical safety of self or other, and second, the individual must respond with “intense fear, helplessness, or horror” (APA, 2000). Trauma in the context of PTG, however, is defined more inclusively as “sets of circumstances that seriously challenge or overwhelm an individual’s capacity to cope” (Tedeschi & Calhoun, 1995). Qualities of traumatic events include: sudden occurrence, extraordinary nature, persisting challenges, perception of uncontrollability, self-blame, and developmental impact (Tedeschi & Calhoun, 1995). Traumatic events themselves do not lead to PTG; rather, struggling to respond to the traumatic events creates opportunities for transformation, which leads to PTG (Tedeschi & Calhoun, 1995; Meyerson et al., 2011). An individual’s higher order schemas regarding the self and external world must be challenged by the event in such a way that pre-trauma assumptions shatter, inducing a psychological crisis in which the world no

longer seems manageable, comprehensible, or meaningful (Janoff-Bulman, 1992; Tedeschi & Calhoun, 1995; Calhoun & Tedeschi, 1998; Tedeschi & Calhoun, 2004). Subsequently, an individual reformulates beliefs and experiences perceived positive change, or PTG (Tedeschi et al., 2007).

Posttraumatic Growth Model

Tedeschi and Calhoun (1996) proposed a model explicating one possible PTG pathway and demonstrating how struggling with highly challenging life events yields growth potential (see Figure 1). Researchers in this area have considered their model to be paramount, so research conducted to date has centered on the authors' depiction of the growth process. In this model cognitive processing, emotional coping, self-disclosing, and seeking support from a supportive social network relate positively to PTG. The path suggests that engaging in a cognitive processing cycle while simultaneously managing rumination and emotional responses facilitates PTG (Sheikh, 2008; Calhoun & Tedeschi, 2004). Calhoun and Tedeschi (2004) suggest that while growth is not merely a measure of coping, successful coping may be necessary to achieve growth. Finally, the internal changes that occur encourage changed behavior, which serves to maintain the perceived positive changes (Tedeschi et al., 2007). The variables included in this model of PTG may function differently depending on the specific type of growth endorsed by an individual (Calhoun & Tedeschi, 2004).

Figure 1. A comprehensive model of posttraumatic growth



Note. Adapted from Calhoun, L.G. & Tedeschi, R.G. (2006). The Foundations of posttraumatic growth: An expanded framework. In *Handbook of Posttraumatic Growth* (pp. 3-23) Manwah, NH US: Lawrence Erlbaum Associates, Inc. Copyright 2006 by Lawrence Erlbaum Associates, Inc.

Generally, PTG marks “significant beneficial change,” as evidenced by multiple outcomes (Tedeschi, Park, & Calhoun, 1998; Dekel, Ein-Dor, & Solomon, 2011). First order growth results in perceived personal strength, recognition of others as helpful, and understanding the paradox of life, in which through bad comes good (Tedeschi & Calhoun, 1995). Secondly, growth may facilitate wisdom as evidenced by knowledge of how to succeed in fundamental tasks, such as planning, reviewing, and managing life. In addition, second order growth leads to a sense of serenity, appreciation of life, recognition of coexisting vulnerability and strength, and a changed life narrative. Regarding interpersonal relationships, second order growth yields empathy and deepened experiences of support.

To illustrate Tedeschi and Calhoun’s (1996) model of PTG with an example, consider an individual who has been physically assaulted. Prior to the event, this individual held assumptions that the world was safe and secure. These assumptions had been reinforced over time, resulting in simple, generalized, deeply rooted beliefs that the world was comprehensible, manageable, and meaningful. Immediately following the traumatic event, however, the survivor began to question the adequacy of his schemas as well as the safety and security of his world. Negative assumptions replaced positive ones, and he noticed thinking recurrently, seemingly involuntarily, about the attack. He first felt anxious, and then he felt nothing at all. Eventually, he began talking about his experiences with others. Time passed, and the survivor neither recovered his pre-existing assumptions nor accepted his newly formed negative assumptions. Instead, he learned to

approach his emotions and engage thoughts of the attack at appropriate times, thus confronting the trauma. This coping process persisted over time with undulating success, and with reinforcement through daily events and from supportive people in his life, he ultimately incorporated the trauma into new schemas. The survivor's reconstructed assumptions were more complex than the originals, but they were once again comfortable. He realized that he had defied an attack, and he was stronger for having struggled subsequently. He recognized that loved ones had reassured him of the world's benevolence as they helped him manage the negative consequences of the event. Once he had grappled with the meaning *of* his own life, he committed to searching for meaning *in* his life; therefore, he began speaking to groups of survivors of assaultive attacks, encouraging them to seek help managing the aftermath of their respective traumas.

Empirical Support for Posttraumatic Growth

Tedeschi and Calhoun (1995) initiated empirical research on the construct PTG and, consequently, provided the standard definition and model in this literature domain. Specificity in exploration remains important as the level of understanding of PTG broadens and deepens over time. Many researchers use synonymously the terms benefit-finding, stress-related growth, adversarial growth, and PTG, thus conflating the distinctions between constructs to reference positive change. The heterogeneity across empirical studies completed to date has introduced methodological challenges in this area of research and difficulty comparing results across studies. While measured similarly to PTG, benefit finding broadly measures growth. However, unlike PTG, benefit finding

does not require the process to include sense-making, perceived stress, or change as an outcome (Meyerson et al., 2011). Resiliency relates to PTG as well, and quite often the constructs are used indistinguishably; however, whereas resilience indicates an individual's ability to cope successfully with a traumatic experience and return to status quo level of functioning, PTG requires an individual's exceeding that initial level of functioning having gone through the traumatic experience (Nelson, 2011). A resilient individual likely experiences less relative distress and, therefore, does not need to make meaning of the trauma to cope successfully (Lechner, Antoni, & Carver, 2006). Resiliency and PTG relate inversely (Leven, Laufer, Stein, Hamana-Raz, & Solomon, 2009).

Evidence of PTG has been gathered in populations around the world: Chinese (Ho, Chan, & Ho, 2004), Japanese (Taku et al., 2007), Israeli (Laufer & Solomon, 2006; Lev-Wiesel & Amir, 2003), Bosnian (Powell, Rosner, Butollo, Tedeschi, & Calhoun, 2003), Palestinian (Salo, Qouta, & Punamaki, 2005), Turkish (Dirik & Karanci, 2008), South African (Peltzer, 2000), and Australian (Shakespeare-Finch & Copping, 2006). While this multicultural evidence suggests PTG is a universal phenomenon, global research has employed a nomothetic, primarily quantitative approach to data collection, using almost exclusively the Posttraumatic Growth Inventory (PTGI) (Splevins, Cohen, Bowley, & Joseph, 2010). Tedeschi and Calhoun (1996) developed the PTGI after reviewing existing studies reporting positive changes following trauma. The number of non-Western samples included in this exploratory analysis has not been reported. The

scale, capturing various domains of PTG, was then validated on a relatively small American population of higher education students. Therefore, the cross-cultural validity of the PTGI factor structure and the reliability of the PTGI have been questioned (Splevins et al., 2010). In fact, only one study using the PTGI to measure PTG among non-American populations has replicated the original factor structure (Ho, Chan, & Ho, 2004; Taku et al., 2007; Weiss & Berger, 2006; Splevins et al., 2010). Leading researchers in the field have widely acknowledged the limitation that studies to date have not investigated PTG among large or diverse samples (Cann et al., 2010). Specifically, no study to date has investigated PTG among a racially and ethnically diverse population of American college students. One confirmatory factor analysis of the PTGI, measuring PTG among a racially diverse sample of college students, found the construct of PTG to be multidimensional as would have been expected; however, the original factor structure only moderately fit the data (Hooper, Marotta, & Depuy, 2009). Certain manifestations of PTG may be unique to unique social and cultural populations (Calhoun & Tedeschi, 2006; Meyerson et al, 2011). Researchers have called for qualitative analyses to expand the current level of understanding of PTG in differing populations, taking a bottom-up approach to determine appropriate content and structure of measurement as well as potential response biases related to the measurement of PTG (Meyerson et al., 2011; Splevins et al., 2010).

To illuminate Calhoun and Tedeschi's (2006) predominant model of PTG development, studies have explored relationships between PTG, environmental, social,

demographic, physical health, and psychological variables. The amount of time that has passed since the traumatic event does not appear to be related to subsequent growth, so growth potential may persist over time (Helgeson, Reynolds, & Tomich, 2006).

Disruption of core assumptions correlates positively with PTG and has been found to reliably predict PTG in a regression analysis (Cann, Calhoun, Tedeschi, & Solomon, 2010). Prati and Pietrantonio (2009) conducted a meta-analysis and found that PTG correlates moderately positively with seeking social support coping, which in turn enhances quality and quantity of social support, fostering positive appraisal and effective coping related to an event (Schaefer and Moos, 1998). Additionally, in a longitudinal study emotional expression was highly predictive of PTG (Manne et al., 2004). PTG has been related positively to self-reported quality and perceived meaning of life (Cann et al., 2010). Studies have shown that females endorse growth at higher rates than males (Linley & Joseph, 2004; Helgeson et al., 2006). Students of color have been found to endorse PTG at higher rates than their European-American counterparts. Further, PTG may, in fact, be more adaptive to minority populations, such that PTG relates to lower levels of mental illness (Linley & Joseph, 2004; Helgeson et al., 2006; Meyerson, et al., 2011). A meta-analysis (Meyerson et al., 2011) found evidence that the relationship between PTG and age may be curvilinear, and growth is most likely to develop during late adolescence (Nelson, 2011). Existing data remain primarily descriptive. Continued quantitative and qualitative research is needed to focus on associations between PTG and specific

variables of interest within various populations (Calhoun & Tedeschi, 2006; Meyerson et al., 2011).

Posttraumatic Growth: Process or Outcome, Perceived or Actual

Individuals are capable of simultaneously reporting negative and positive consequences of trauma, yet they find positive consequences to be more relatively significant (Powell et al., 2003). Understanding that these consequences can coexist led researchers to query whether PTG constitutes a coping process or a coping outcome and whether PTG represents illusory or actual change. Studies have presented conflicting results regarding the nature of relationships between pathogenic effects of trauma and PTG. Baker, Kelly, Calhoun, Cann, and Tedeschi (2008) found that when students were given the opportunity to endorse both depreciation and growth on the same dimension, the two changes were uncorrelated, with students reporting greater growth than depreciation (Cann et al., 2010). Some empirical studies have demonstrated that growth and distress are negatively related, portraying the two constructs as opposite ends of the same spectrum of posttraumatic experience (Frazier, Conlon, & Glaser, 2001). Other studies have suggested that growth and distress are not mutually exclusive, and a positive relationship exists between the two (Tedeschi et al., 2007; Solomon & Dekel, 2007; Helgeson et al., 2006). Others still have found that growth and distress are unrelated constructs (Joseph, Williams, & Yule, 1993; Cann et al., 2010).

Researchers have sought greater clarity regarding the bidirectional relationships between various markers of depreciation, including distress, and PTG following trauma

(Dekel, Ein-Dor, & Solomon, 2011). Dekel and colleagues (2011) conducted a longitudinal study to determine the temporal relationship between PTSD and PTG, providing evidence that growth is a response to distress, not vice versa, and that the two constructs are positively related. This finding corroborates Tedeschi and Calhoun's (2004) theoretical explication that struggle, as indicated in this case by distress, above and beyond exposure to traumatic events, yields PTG. Dekel et al.'s (2011) finding that growth is a response to distress suggests that perceiving growth could constitute a coping process, negating the pathogenic effects of trauma.

Some researchers have suggested that the perception of PTG is illusory or merely a self-enhancing bias that serves to reduce distress and facilitate successful coping. In an effort to determine whether self-reported growth can mark genuine change, researchers have considered potential sources of bias that may impact endorsement of PTG (e.g., social desirability, downward comparison) (Calhoun & Tedeschi, 2004). Individuals' reports of growth are often corroborated by reports of others who are close in relation, illustrating convergent validity of self-reported PTG (Park, Cohen, & Murch, 1996; Shakespeare-Finch & Enders, 2008). Researchers have found PTG to be uncorrelated with measures of social desirability (Wild & Paivio, 2004) and negatively correlated with measures of denial (Dohrenwend et al., 2004). Individuals may actually underreport PTG, particularly when asked to consider PTG in relation to a specific event, since cognitive dissonance challenges an individual to consider the positive resulting from a trauma (Smith & Cook, 2004)

In attempt to further distinguish between perceived and actual growth, prospective longitudinal assessments have measured perceived change in growth over time versus actual change in self-reported growth. One study conducted by Gunty et al. (2011) found that perceived and actual PTG were highly related among those who endorsed less distress and higher life satisfaction. Both perceived and actual PTG have been illustrated in the literature, and they have been found to coexist (Zoellner & Maerker, 2006). In addition, the function of PTG, perceived or actual, has been explored. While growth may serve as a coping mechanism, such that PTG engenders successful coping with trauma, PTG can also be considered an outcome of struggling through the aftermath of trauma. PTG as an outcome has not been readily studied in the literature (Dekel et al., 2011).

To establish construct validity when measuring PTG, it is necessary to acknowledge growth as an outcome of coping or a coping process, perceived or actual (Tedeschi & Calhoun, 1996). Often these distinctions have been neglected in empirical studies. To expand upon the current understanding of actual PTG, Calhoun and Tedeschi (2004) argue that the empirical investigation of PTG correlates, typically inclusive of constructs such as well-being and distress, should broaden to determine what may further constitute actualized or optimal existence. Regardless of the nature of PTG (e.g., genuine or illusory), the question of primary importance to stakeholders on national college campuses may be whether perceived positive change resulting from a resolved traumatic event has actual beneficial consequences related to increased psychological functioning of individuals on campus (Calhoun & Tedeschi, 2004).

Domains of Posttraumatic Growth

After reviewing the existing body of literature on perception of benefits related to traumatic events, Tedeschi and Calhoun (1996) identified that perceived positive change occurs in three domains: perception of self, relationships with others, and life philosophy (Tedeschi & Calhoun, 1995). Specifically, these three domains of PTG, as measured by the 21-item PTGI, consist of five distinct factors: relating to others (e.g., “A sense of closeness with others;” “Having compassion for others”), new possibilities (e.g., “I established a new path for my life;” “I’m able to do better things with my life.”), personal strength (e.g., “Knowing I can handle difficulties;” “I discovered that I’m stronger than I thought I was”), spiritual change (e.g., “A better understanding of spiritual matters;” “I have a stronger religious faith”), and appreciation of life (e.g., “An appreciation for the value of my own life;” “Appreciating each day”) (Tedeschi & Calhoun, 1996; Taku et al., 2008).

Both quantitative and qualitative studies, including confirmatory factor analyses, have corroborated the identification of these five factors and the multidimensionality of the PTGI (Sheikh, 2008; Taku, Cann, Calhoun, & Tedeschi, 2008). Researchers have found these factors to be intercorrelated consistently, indicating that PTG, as measured by the PTGI, can be calculated as a total score and considered a general factor (Taku et al., 2008; Cobb, Tedeschi, Calhoun, & Cann, 2006; Tedeschi & Calhoun, 1996). Others have also suggested that these five factors reflect distinct psychological processes (Taku et al., 2008; McMillen, 2004) and may relate differently to outcome variables (Taku et al.,

2008). Further, Calhoun and Tedeschi (2004) acknowledge the possibility that some experiences may not fit into these otherwise established categories of growth.

Researchers, therefore, have suggested considering each domain of growth separately in analyses (Calhoun & Tedeschi, 2004). Identifying domains of growth endorsed by a population or those domains most related to a specific variable of interest could illuminate areas of growth most amenable to intervention (Taku et al., 2008).

Posttraumatic Growth, College Student Suicidality, and Health Promotion

Currently, no literature exists relating PTG to suicidal thoughts and behaviors. Research suggests traditional college students belong to the age group having an optimized level of growth potential among all age groups (Meyerson et al., 2011). Emerging adults are more likely than older adults to appraise a stressor as threatening and, thereby, grow (Helgeson et al., 2006). Further, young adults' increasingly static schemata become more vulnerable than those of younger children to disruption adequate for yielding PTG (Janoff-Bulman, 1992). However, many from this age group also endorse experiencing suicidal thoughts and behavior (Drum et al., 2009). Given the positive outcomes related to PTG noted in the literature, the effect of suicidal ideation and behaviors among college students on the likelihood of endorsing PTG following a traumatic event warrants exploration. Wren-Lewis (2004) posited that those life difficulties involving reminders of mortality may lead to consideration of existential issues (e.g., life purpose and meaning) and a reassessment of priorities (Calhoun & Tedeschi, 2004). Much of the confirmatory research on PTG as a construct has involved

stressful events that threaten one's or another's life, like terminal illness or combat; however, researchers have not considered how one's consideration of mortality, specifically varying levels of suicidality, relates to the likelihood of endorsing overall growth or growth in specific domains (Calhoun & Tedeschi, 2006).

Future consideration of beneficial outcomes of students' experiencing PTG following trauma may strengthen existing efforts to promote well-being on college campuses. Understanding better the patterns of PTG among students, campus communities may facilitate growth and, in turn, maximize the effects of resulting positive outcomes. Helgeson et al. (2006) conducted a meta-analysis suggesting that perceived benefit encourages positive change, and perceived benefit is more highly associated with positive outcomes as time passes after the trauma. However, a longitudinal study of individuals with *Human Immunodeficiency Virus* found that experiences of PTG depend on others' noticing and responding to behaviors that have changed due to reconstructed schemas (Milam, 2004; Weiss, 2002; Calhoun & Tedeschi, 2004). Research suggests clearly that PTG potential is contingent upon factors within the broader community, thereby demanding the inclusion of PTG research in the context of college campus health initiatives. Further, as suicide and suicidality are nationally recognized problems on college campuses, understanding the effects of suicidality on PTG potential could illuminate more completely the full spectrum of mental health among this population, serving to improve population-focused health promotion efforts and the overall well-being of the community.

Assessment of Suicide and Suicidality among College Students

Suicide and suicidality among college students have received national attention in recent years, so while challenges abound, researchers continually strive to garner accurate data. Assessment of suicide rates has been wrought with validity and reliability threats. For instance, deaths have been inconsistently certified as suicide (O'Carroll, 1989); therefore, deaths by suicide and suicide attempts alike have been underreported unintentionally, and, as some evidence suggests, intentionally (Rudd, 1989). The nomenclature of suicide literature has also been widely inconsistent across studies (Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007a). Further, death by suicide remains a low base rate phenomenon (Silverman et al., 2007a; Rudd, 1989). To address these challenges, researchers have sought to standardize methods of data collection and related lexicon. Additionally, researchers have called for collaboration across multiple institutions as well as increased use of self-report to determine the prevalence of suicidal thoughts and behavior. These efforts serve to elucidate the national problem of college student suicide and improve the effectiveness of existing prevention strategies (Rudd, 1989; Silverman et al., 2007a).

Suicide-Related Terminology

To improve the generalizability of research on suicide, O'Carroll, Berman, Maris, and Moscicki (1996) proposed nomenclature that Silverman and colleagues (2007a, 2007b) later revised. The standardized lexicon includes terminology and definitions that inform researchers, clinicians, and policy-makers.

The term *suicidality* encompasses the full range of suicidal thoughts and behaviors, excluding completed suicides. For the purposes of this study, the term includes ideations, threats, plans, self-harm, and attempts (Freedenthal, 2006; L. O'Donnell, C. O'Donnell, Wardlaw, & Stueve, 2004). *Suicidal ideation* refers to self-reported thoughts of suicide. *Suicide threat*, with or without suicidal intent, constitutes *suicide-related communications*, and the term refers to a verbal or nonverbal action suggestive of, but not including, suicide-related behavior. *Suicide plan*, with or without suicidal intent, also constitutes *suicide-related communications*, and the term refers to a proposed plan for suicide-related behavior that potentially will result in self-injury. *Suicide-related communications* implies an interpersonal component, and the term serves to bridge the gap between cognitions (i.e., ideation) and behaviors (i.e., self-injury). *Self-harm* refers to self-inflicted, injurious behavior without intent to die, and self-harm can result in no injury, injury, or death. *Suicide attempt* refers to self-inflicted, injurious behavior with intent to die, and it, too, can result in no injury, injury, or death. Death following a suicide attempt defines *suicide*.

Suicide Rates among College Students

Prior to 1965, only six investigations of suicide on college campuses existed (Schwartz & Whitaker, 1990). Early researchers in this area had conjectured widely ranging rates of suicide among college students. Lipschitz (1990) reviewed existing literature and noted reports of college student suicide rates ranging from 5 to 50 per 100,000. Some have suggested that methodologically unsound investigations – those that

did not account for representativeness of the sample or variability related to demographic variables, such as age, ethnicity, and socioeconomic status – yielded disparate estimates (Lipschitz, 1990; Schwartz & Friedman, 2009). Researchers in recent years have thus reviewed and tested hypotheses from this earlier era using multicampus data, at times disputing landmark findings. For instance, based on existing, affirmative data, Schwartz and Whitaker (1990) tested the following hypothesis: rates of suicide among college students are higher than those of nonstudents. They found in their epidemiological investigation, however, that suicide rates among college students were, in fact, lower than those of their nonstudent counterparts.

Most recently, Schwartz (2011) has posited that the annual suicide rate for college students is 7 per 100,000. For the last four decades, the annual suicide rate for students, when matched by age, gender, and race, has been approximately 50% lower than that of their non-student peers (Silverman, Meyer, Sloane, Raffel, & Pratt, 1997; Schwartz, 2006; Schwartz, 2011). Restricted access to firearms and lethal means likely best explains the lower rate among college students (Schwartz & Whitaker, 1990; Schwartz & Friedman, 2009). Due to the limited access to firearms, college campuses seem to confer greater protection for male students (Schwartz & Whitaker, 1990; Schwartz, 2011). In addition, Silverman and colleagues (1997) suggest that access to physical and mental health services, proximity to supportive peers and mentors, communication of the value of higher education, and protection from “daily hassles” related to young adulthood of

non-students may also contribute to lower suicide rates among the student population (Lazarus & Folkman, 1984).

The suicide rate of college students has gained attention from media outlets, federal and state governments, local communities, education institutions, researchers, and individuals. Recent attention paid to college student suicide has often yielded inaccurate and sensationalized portrayals of the nature of problem, sustaining myths, most specifically about the prevalence of suicide (Schwartz, 2006); however, key stakeholders concur that suicide among college students remains a national problem, so they exert effort to understand precisely the etiology of suicide among this age group as well as the efficacy of mental health services and prevention programming on national campuses (Silverman et al., 1997).

Prevalence of College Student Suicidality

While suicide is not prevalent on college campuses, research suggests that suicidality, particularly suicidal ideation, is relatively common among students (Drum et al., 2009; Rudd, 1989). Researchers found that over half of students endorse having experienced suicidal ideation at some point in their lives (Drum et al., 2009). The American College Health Association National College Health Assessment II (ACHA-NCHA II) found that 7.1% of students endorsed having seriously considered attempting suicide in the past 12 months (ACHA-NCHA II, 2012). In addition, approximately 1.2% of students surveyed indicated they had attempted suicide within the past year. Other studies have found over 40% of students endorsing suicidal ideation, 15% of those

students endorsing suicidal behaviors, and over 5% endorsing at least one suicide attempt in the past year (Rudd, 1989).

Suicidality may be considered a continuum of experience, such that passive morbid thoughts precede active suicidal thoughts, and these suicidal thoughts precede suicide plans and attempts. A national, multisite survey asked students about their experiences of suicidality within the 12 months prior and found that approximately 6% of students had seriously considered attempting suicide, and approximately 1% had attempted suicide (Drum, et al., 2009). These percentages indicating rates of suicidality appear to be lower than those found in previous studies, but this survey asked questions allowing students to report more precisely the relative severity of their suicidal ideation. Prior to asking about seriously considering attempting suicide, the survey conducted by the National Research Consortium of Counseling Centers in Higher Education asked students whether in the past twelve months they had ever thought “I wish this all would just end” and “I wish I was dead” (Drum et al., 2009). Frequencies resulting from allowing students to report a gradation of suicidality suggest that a continuum of suicidality exists.

Risk Factors of Suicide

Historically and in line with the pathogenic approach, suicide literature has given precedence to those factors that indicate an enduring vulnerability to suicide. It is worth noting that risk factors differ from warning signs, which are behaviors indicative of increased suicide risk (Rudd, 2003; Rudd, Berman, Joiner, Nock, Silverman, Mandrusiak

et al., 2006; Rudd, Mandrusiak et al., 2006). A risk factor essentially divides a population into two, one group having a significantly higher likelihood of the outcome of interest than the other group (Kraemer, Kazdin, Offord, & Kessler, 1997). Empirical research has identified four classifications of risk factors: fixed, variable, proximal, and distal (Berman, Jobes, and Silverman, 2006).

Fixed risk factors are largely immutable, and as indicated in existing empirical studies, gender serves as an example (Kraemer et al., 1997). Researchers have presented conflicting reports of gender differences related to college student suicide and suicidality. Some researchers have suggested that males and females experience suicidal ideation at similar rates, yet Stephenson, Pena-Shaff, & Quirk (2006) found that female students experience suicidal thoughts at rates greater than those of male students (Brenner, Hassan, & Barrios, 1999; Langhinrichsen-Rohling, Arata, Bowers, O'Brien, & Morgan, 2004; Westefeld, Homaifar, Spotts, Furr, Range, & Wurth, 2005). Neither females nor males appear to attempt suicide at significantly different rates; however, males die by suicide more often as a result of utilizing more lethal means (Gispert, Wheeler, Marsh, & Davis, 1985; Maris, 1985; Rudd, 1989). Among undergraduate students, suicide rates of females are half those of males, but among graduate students, there is no significant difference between rates of females and males (Silverman et al., 1997).

Variable risk factors change either spontaneously or by way of intervention, and examples include age and hopelessness. (Kraemer et al., 1997). Students ages 25 and older are at significantly greater risk of suicide than younger students (Silverman et al.,

1997). Correlational studies have illustrated that depression, hopelessness, and loneliness are positively associated with suicidality (Weber, Metha, & Nelson, 1997).

Distal risk factors endure across time and situations. Examples include emotional vulnerabilities and history of suicidality (Moscicki, 1995; Berman et al., 2006; Rudd, 2004). In a study including nonclinical students, a positive relationship was demonstrated between life stress, specifically number of events and perceived negative impact, and suicidal behavior (Rudd, 1990). The number and intensity of life events were also found to be associated with psychological distress, including depression and hopelessness (Rudd, 1990; Konick & Gutierrez, 2005; Kisch, Leino, & Silverman, 2005; Stephenson et al., 2006). Among students, prior history of treatment for mental health concerns is positively associated with reported numbers of suicide attempts (Rudd, 1989). Students who enter college with a preexisting mental illness or who experience mental illness while attending college have been found to be most at risk of suicidality and suicide (Schwartz & Whitaker, 1990; Haas, Hendin, & Mann, 2003; Schwartz & Friedman, 2009). Finally, entering the continuum of suicidality predicts progression toward severe ideation and behaviors, and a prior history of suicide attempts predicts an increased likelihood of future attempts (Joiner, Conwell, Fitzpatrick, Witte, Schmidt, Berlim, Fleck, & Rudd, 2005; Schwartz, 2006; Silverman, 2005; Westefeld et al., 2005).

While distal risk factors indicate a vulnerability to suicidal behavior, proximal risk factors relate directly to such behavior (Moscicki, 1995). Proximal risk factors are situational in nature. Moscicki (1995) suggests a distal factor must be present for a

proximal risk factor to result in suicidal action. Westefeld and colleagues (2005) found that school stress and relationship issues contributed to suicidal behavior. Access to lethal means serves as an additional example of factors related to increased risk of suicide.

Joiner's Interpersonal-Psychological Theory of Suicide

Joiner (2005) proposed the interpersonal-psychological theory of suicide, illustrating a model in congruence with the epidemiology of suicide, to explain suicidal behavior. He conjectured that it was a rare intersection of uncommon factors that yielded increased risk of suicidal behaviors. To die by suicide, Joiner ascertained, individuals must acquire an ability to do so. Repeated exposure to pain or fear gained through prior suicide attempts, for example, serves to habituate individuals and reduce fear of pain associated with self-injury. Individuals must also desire self-enacted death. Those who want to die by suicide necessarily perceive burdensomeness and failed belongingness relative to valued relationships or social networks. A sense of burdensomeness is characterized by feelings of unremitting ineptitude that is believed to affect not only the self, but others as well. A feeling of isolation and disconnection mark a sense of thwarted belongingness. According to Joiner's theory, the presence of the above interpersonal constructs, along with decreased fear of pain, yield increased risk of serious suicidal behavior, specifically death by suicide. Empirical studies have confirmed this assertion, demonstrating that the interaction of these three factors (i.e., low sense of belonging, perceived burdensomeness, and level of acquired capability) is predictive of attempting suicide, beyond commonly noted covariates (e.g., age, gender, family history of suicide,

depression) (Joiner, Van Orden, Witte, Selby, Ribeiro, Lewis, & Rudd, 2009; Van Orden, Witte, Cukrowicz, Braithwaite, Selby, & Joiner, 2010). In relation to PTG, Meyerson and colleagues (2011) suggest that while social connection does not appear to be a necessary condition for growth, social connection enhances PTG potential. Thus, Joiner's theory of suicide may explain in part the relationship between suicidality and PTG.

Rudd's Cognitive Behavioral Theory of Suicide

Another conceptualization of the suicide phenomenon is Rudd's (2000) theory of the suicidal mode. Beck (1996) defined 'mode' as the organizational unit of schemas. The cognitive triad is the organizational unit within the cognitive system that holds beliefs about self, other, and the future. The suicidal belief system is referred to as the suicidal mode and encompasses core beliefs reflecting helplessness, unlovability, and the notion that increased distress would overwhelm an individual's ability to manage. Hopelessness, as it relates to the future orientation, conveys intent to die and indicates an active suicidal mode. Activation of the suicidal mode is typically brief, acute, and often recurrent. Further, the activation threshold of the suicidal mode is lowered as suicidality becomes chronic and the number of internal and external triggers, or orienting schema, increases. An active suicidal mode is characterized by behaviors reflective of motivation to die; therefore, activation of the suicidal mode corresponds to risk of suicide. As behavior (i.e., suicidal attempts) increases over time, the duration of the suicidal mode similarly increases, such that an individual who has attempted multiple times will experience longer suicidal crises at any given time. How Rudd's concept of the suicidal

schema relates to Calhoun's and Tedeschi's (2006) model of PTG, in which pre-trauma schemata must be disrupted to elicit growth, remains unexamined.

Protective Factors of Suicide

Suicide literature has focused primarily on those factors that yield greater risk of suicide; however, the occurrence of death by suicide is rare. Interestingly, the vast majority of those who possess factors conferring risk will not eventually attempt suicide (Cha & Nock, 2009; Gould, Greenberg, Velting, & Shaffer, 2003; Rutter, Freedenthal, & Osman, 2008; Joiner, 2005). In line with Antonovsky's salutogenic approach, researchers have recently shifted their focus toward identifying factors that serve to protect individuals from suicide, arguing that risk factors alone do not convey overall risk of suicide (Rutter et al., 2008). Protective factors have most recently been defined as "characteristics...that are associated with a lower likelihood of problem outcomes" (NAS-IOM, 2009, p.82). Further, understanding suicidality as a continuum increases the importance of identifying protective factors that inhibit an individual's entrance onto and progression along that range of increasingly severe suicidal thoughts and behaviors.

Only a limited number of instruments measuring protective factors exist to date (Rutter et al., 2008). Protective factors are classified as external (e.g., social support) or internal (e.g., resiliency and positive self concept), and factors differ across racial and ethnic groups (Rutter et al., 2008). Researchers have found connectedness, problem-solving ability, and spiritual faith to protect against suicidal ideation and behaviors (Beautrais, Collings, Ehrhardt, & Henare, 2005; Cha & Nock, 2009). Specifically among

a college student population, existential well-being serves as protection from suicidal ideation (Taliaferro, Rienzo, Pigg, Miller, & Dodd, 2009). Overall, knowledge of protective factors will complement existing knowledge of risk factors, clarifying the nature of suicidality and mental health on college campuses.

Campus Suicide Prevention

Colleges and universities across the nation have invested increasingly in suicide prevention on their campuses. High-profile events occurring on campuses as well as legal cases related to college student suicide resulted in an onslaught of media attention (Schwartz, 2006). Colleges have responded accordingly by striving to decrease risk of suicide among students, maintain campus safety, and protect themselves from liability. Given the infrequent nature of suicide on campuses and expanding knowledge of suicidality, institutions have focused consequently on suicidal thoughts and behaviors (Schwartz, 2006).

Although laws vary by state, three landmark cases have sought to define a university's responsibility related to student suicidality and suicide as well as the nature of the relationship between institution and student (Westfield et al., 2006). In *Jain v. State of Iowa* the court found that a special relationship does not exist between university and student on the basis of a housing contract, such that the responsibility to prevent suicide does not lie within the realm of administrators' duties; however, the ruling from a similar case of *Schieszler v. Ferrum College* indicated that a special relationship exists, and the college maintains a duty to protect students from suicide. *Shin v. Massachusetts*

Institute of Technology (MIT) involved MIT and the family of Elizabeth Shin who died after lighting herself on fire. Ms. Shin was under the care of campus mental health professionals, so her parents argued that her death was preventable. The courts cleared MIT of responsibility, and after lawsuits were brought against individual administrators, the settlement was not made public.

The above cases regarding university liability have spurred development and adoption of forced leave policies within some institutions, by which an individual who endorses suicidal ideation or behavior must withdraw from the university. In *Nott v. George Washington University* (GWU) Robert Nott, a sophomore who admitted himself into a hospital after experiencing depressive symptoms and thoughts of suicide, sued GWU for threatening to expel him if he did not withdraw from the university. Forced leave policies do not prevent litigation, and they may violate rights of students mandated by the Americans with Disabilities Act. Such policies may also dissuade individuals from seeking help for suicidality (Rawe & Kingsbury, 2006; Kinzie, 2006).

Psychotherapy or a combination of therapy and psychotropic medication has been shown to reduce suicidality among ideators and attempters in the general population (Cosgrave, Robinson, Godfrey, Yuen, Killackey, & Baker, 2007; Guthrie, Kapur, Mackway-Jones, Chew-Graham, Moorey, & Mendel, 2001; Linehan, Heard, & Armstrong, 1993; March, 2004; Olfson, Shaffer, Marcus, & Greenberg, 2003). Similarly, mental health resources on campus effectively reduce risk of suicide among those who enter counseling. Schwartz (2006) compared the level of risk and suicidal outcome of

counseling center clients, the general student population, and the general nonstudent population based on four commonly regarded risk variables: prior suicide attempt, history or presence of mental illness, access to a firearm, gender. Students who are clients of college or university counseling centers should have a rate of suicide that is eighteen times greater than that of their non-client student counterparts, yet their rate was found to be only three times greater than that of non-client students; therefore, services at college counseling centers appear to offer protection by decreasing risk of suicide.

Furr, Westefeld, McConnell, and Jenkins (2001) reported that 68% of students who seek counseling services find them helpful; however, barriers to help-seeking may exist on campuses, as indicated by the small proportion of students accessing services (Schwartz & Whitaker, 1990). Students themselves acknowledge the value of mental health, but only half indicate they would seek help to resolve a problem (Turner & Quinn, 1999). Additionally, the majority of students remain unaware of counseling services available on campus (Westefeld et al., 2005). One study found that fewer than 20% of students who experienced suicidal ideation or attempted suicide received treatment (Kisch et al., 2005). Schwartz (2006) found the usage rate of college counseling services correlated nearly perfectly with the availability of mental health professionals on campus, and on many campuses the ratio of professionals to students remains lower than the International Association of Counseling Services recommends (Goldston et al., 2010; Gallagher, 2004).

Historically, the paradigm for suicide intervention and prevention efforts has concentrated attention on the individual in suicidal crisis. Drum and colleagues (2009) suggest expanding the breadth of prevention efforts by adopting a problem-focused paradigm, thus adopting a primary prevention approach aimed at reducing the prevalence of suicidality on campus and bolstering mental health and well-being on campus. The spectrum of response to suicide includes prevention, intervention, and postvention, and multiple stakeholders on campus (e.g., mental health professionals, administrators, faculty and staff, students) hold roles in ultimately fostering health in their community (Westfield et al., 2006). A college campus community holds a unique set of challenges: increased risk of developing a psychological disorder; stressors due to the transient nature of the population and unstable social support networks; and limited health resources (Schwartz & Whitaker, 1990). Given budget constraints and often small numbers of mental health professionals, implementers of prevention strategies on campus must recognize the necessity and benefits of maximizing gain relative to cost (Furr et al., 2001; Schwartz & Friedman, 2009; Goldston et al., 2010). Gutierrez, Osman, Kopper, Barrios, and Bagge (2000) examined risk and protective factors as they related to suicide risk assessment on campus, and they concluded that interventions accounting for risk factors while increasing protective factors could most effectively decrease suicide risk.

In the NAS-IOM report (2009) the Institute of Medicine defined mental health *promotion* intervention as distinct from but closely related to universal *prevention* intervention. Mental health promotion emphasizes fostering well-being rather than

preventing disorder, but evidence suggests prevalence of disease may decrease as a result. Researchers have found evidence for PTG serving as both a treatment and protective factor for negative behavioral health, including depressive symptoms and PTSD (Kleim & Ehler, 2009; Nelson, 2011). Campus mental health promotion interventions that facilitate PTG, and prevention interventions that target suicide may serve to increase well-being among the college student population.

Chapter 3: Proposed Research Study

Purpose of the Proposed Study

Researchers have identified the need to explore Posttraumatic Growth (PTG) because, while literature has focused historically on negative consequences following trauma, an individual may experience both positive and negative consequences; moreover, researchers suggest PTG may relate positively to outcomes including perceived comprehensibility, manageability, and meaningfulness of life; accessing social support and helpers; and appreciation for life (Tedeschi & Calhoun, 1995). Expanding current levels of understanding regarding the nature of PTG on a college campus may ultimately serve to bolster the well-being of students. Higher education stakeholders have focused increasingly on promoting health at the population level, in part to prevent suicide, which is the second leading cause of death among college students. Further, researchers have established a need for greater focus on suicidality (i.e., morbid rumination, active suicidal thoughts, suicidal plans and behaviors) because it has been found that over 50% of college students endorse having experienced suicidal ideation at some point in their lives (Drum et al., 2009). The effects of suicide are devastating, but the effects of suicidality at varying levels of severity remain largely unexplored, particularly as they relate to PTG. Experiencing suicidality during a stressful period may affect the likelihood of endorsing PTG after that period has resolved.

Researchers have called for exploratory analyses of PTG. The proposed study aims to address persistent gaps in the literature through the analysis of data collected from a large-scale, national, multisite sample of diverse college students. The incidence of perceived PTG will be determined, and domains of PTG will be identified. The relationship between demographic variables, suicidality, and PTG will be tested to ascertain each independent variable's effect on the likelihood of endorsing overall PTG as well as PTG in each domain. This information may serve ultimately to help inform mental health promotion strategies on college campuses. The current study will utilize both qualitative and quantitative methodologies to address the four research questions.

The current study is a proposed analysis of cross-sectional survey data collected in 2011 as part of a 79-item web-based survey entitled, Undergraduate and Graduate Student Coping with Stressful Experiences. The survey was sponsored by the National Research Consortium of Counseling Centers in Higher Education. This organization was founded in 1991 and is housed at the University of Texas at Austin Counseling and Mental Health Center. The organization maintains a mission to conduct large scale, national research studies on the mental health issues of college students.

Participants

Full Sample of Survey Participants

A stratified random sample of 101,491 students across 74 participating United States colleges and universities was selected. Undergraduate or graduate student status defined the strata. The sampling strategy allowed each participating campus to yield a

sufficient number of students from its unique population to allow for campus-level analyses. From the institutions with 5,000 or more undergraduate students enrolled, 1,000 students were randomly selected. From the institutions with 500 to 4,999 undergraduate students, 500 students were randomly selected. Finally, from the institutions with fewer than 500 undergraduate students, all were selected. The same guidelines were followed to randomly select graduate students. In total 14,080 undergraduate students and 12,094 graduate students responded, with a response rate of 26.3%. Participating four-year colleges and universities were representative of national higher education institutions relative to enrollment size, private or public qualification, and geographic location.

Respondents self-identified gender as follows: 62.7% female, 37.1% male, 0.2% transgender. The sample self-identified as the following racial and ethnic categories: 4.3% “African American, of African descent, African, of Caribbean descent, or Black,” 10.2% “Asian or Asian American,” 69.8% “Caucasian, White, of European descent, or European,” 5.7% “Hispanic, Latino or Latina,” 2.2% “Middle Eastern or East Indian,” 0.3% “Native American or Alaska Native,” 0.2% “Native Hawaiian or other Pacific Islander,” 1.7% other race/ethnicity, 5.4% multiracial. For the purposes of this study, “Middle Eastern or East Indian,” “Native American or Alaska Native,” other race/ethnicity, and multiracial were collapsed to form an “Other” category, totaling 9.8% of the total sample. The average age of the sample was 25 years old.

The sample size of the present study will include those individuals whose stressful period has resolved ($N = 15,276$), as indicated by their response to a forced choice item.

The analysis related to Research Question One will utilize this full sample. For analyses related to Research Questions Two, Three, and Four, the sample will consist of those individuals not currently in the stressful period who also endorse posttraumatic growth (PTG) on an open response item ($N = 10,251$). To answer Research Questions Two, Three, and Four, a simple random sample will be taken. A power analysis will be conducted to calculate the effect size of each independent variable included in the model and determine the appropriate size of this sample. The sample sizes for all analyses will exceed Tabachnick and Fidell's (2001) recommendation that the number of cases equals at least 20 times the number of independent variables or that the sample size exceed $104 + m$, where m = number of independent variables. Based on Tabachnick and Fidell's (2001) recommendation, for Research Questions Two, Three, and Four, the minimum number included in the sample will be 140.

Procedures

Initially, a research proposal and survey draft, including informed consent and treatment referral procedures, were submitted to and approved by the Institutional Review Board of the University of Texas at Austin. An invitation was emailed to randomly selected students from their respective campus counseling centers explaining the purpose of the study. Recipients were informed that participation in the study would make them eligible to win one of 100 Amazon.com gift cards worth \$50 each. Participants could choose to decline entry in the drawing. The invitation explained that the University of Texas at Austin was sponsoring the study and that the recipients'

respective college sponsored and supported the endeavor. The email invitation included a link to the web-based survey and utilized the logo and colors unique to the recipients' local campus.

After reviewing the purpose of the study and consent form, students agreed or declined to participate. Completion of the survey took approximately 20 minutes. Participants could withdraw at any point and skip any question. Upon declining to participate, withdrawing from, or completing the survey, all participants received contact information for mental health and emergency services on their campus or in their local community. Randomly generated identification numbers were used, so participants' responses were not connected to identifying information.

Measures

Undergraduate and Graduate Student Coping with Stressful Experiences is a 79-item survey containing 30 forced-choice items/sub-items, 25 Likert-type scale items/sub-items, 18 items for which multiple response options can be selected, and 6 open text response items/sub-items. The survey includes questions regarding demographics, presence of pre-existing vulnerabilities and assets, general approach to management of life stressors, and experiences related to a recent stressful period. The length of the survey and sequence of sections were intended to elicit thorough contemplation by the participants of their experiences related to their worst point within the most stressful period in the prior 12 months, thus increasing the accuracy of their self-report. The directors and research associates of The National Research Consortium identified areas of

empirical interest, generated survey items per theories in the literature, and then elicited feedback from directors of participating counseling centers. Counseling center directors' feedback was integrated into the development of the final survey. The survey is available in Appendix A, and items utilized for the present study are highlighted.

Participants had the opportunity to respond to questions aimed at gathering demographic information, including age, gender, and race/ethnicity. Age was determined by a forced choice response with two digit integer options ranging from 18 to 95. Gender was determined by a forced choice item with three response options: female, male, transgender. Race/ethnicity was evaluated by a question asking participants to choose all applicable categories from the following list: African American, of African descent, African, of Caribbean descent, or Black; Asian or Asian American (e.g., Chinese, Japanese, Korean); Caucasian, White, of European descent, or European (including Spanish); Hispanic, Latino or Latina (e.g., Cuban American, Mexican American, Puerto Rican); Middle Eastern or East Indian (e.g., Pakistani, Iranian, or Egyptian); Native American (e.g., Dakota, Cherokee) or Alaska Native; Native Hawaiian or other Pacific Islander (Samoan, Papuan, Tahitian); Other (please specify). Participants who selected more than one category were classified subsequently as Multiracial.

Resolution of the self-reported most stressful period was determined by item 45: "*Are you currently in the stressful period?*" Participants were forced to choose between dichotomous response options: "*Yes*" or "*No*."

Suicidality has been found to be a continuum of experience, such that lower levels precede more severe levels of ideation and behavior (Drum et al., 2009). Further, entering the continuum has clinical significance because doing so predicts progression along the continuum (Joiner et al., 2005; Drum et al., 2009). Suicidality status will be determined by the following three items. Item 63 asked participants: “*During the stressful period, did you have any thoughts similar to the following? (Select all that apply).*” Response options to this item included the following, in the provided order: “63_1 *This is all just too much,*” “63_2 *I wish this would all end,*” “63_3 *I have to escape,*” “63_4 *I wish I was dead,*” “63_5 *I want to kill myself,*” “63_6 *I might kill myself,*” “63_7 *I will kill myself,*” “63_8 *I did not have any thoughts like these.*” Participants responded “*True*” or “*False*” to each sub-item. Item 64 asked students: “*During this stressful period, did you seriously consider attempting suicide?*” The forced choice response option was “*Yes*” or “*No.*” Finally, item 67 asked the following question: “*During this stressful period, did you attempt suicide?*” Participants responded to the forced choice option of “*Yes*” and “*No.*” The response frequencies of items 63, 64, and 67 are presented in Tables 1 and 2. A confirmatory factor analysis led to the discovery that this set of items (all capturing varying levels of severity of suicidality), excluding “63_8 *I did not have any thoughts like these,*” was a single factor. The fit index of these nine items (CFI = 0.97) indicates that the items are highly correlated.

Table 1

Suicidality Continuum

During the stressful period, did you have			
any thoughts similar to the following? (Select all that apply)	Undergraduate (%)	Graduate (%)	Total (%)
(1) This is all just too much	51	45	48
(2) I wish this would all end	33	28	31
(3) I have to escape	20	17	19
(4) I wish I was dead	9	7	8
(5) I want to kill myself	6	4	5
(6) I might kill myself	3	2	3
(7) I will kill myself	1	1	1
(8) I did not have thoughts like these	38	43	40

Note. For undergraduates, n = 14,067; for graduate students, n = 12,071

Table 2

Suicidal Ideation and Behavior

	Undergraduate (%)	Graduate (%)	Total (%)
During the stressful period...			
Did you seriously consider attempting suicide?	6	3	5
Did you attempt suicide?	1	0	1

Note. For undergraduates, n = 14,067; for graduate students, n = 12,071

Suicidality status will be determined, such that endorsing one or more of the nine items listed above will indicate increasing levels of suicidality, and endorsing item 63_8 will indicate no suicidality. The frequencies of each item reported in Table 1 suggest item 63 sub-items form a continuum, such that thoughts increase in severity from “*This is all just too much*” to “*I will kill myself.*” To demonstrate and provide evidence for this continuum, summative and maximal value approaches were referenced. First, the number of items a student endorsed was calculated and assigned to that individual. For example, an individual received a summative value of 5 if a total of five items were selected, regardless of the order (e.g., 1, 2, 3, 4, 6). Frequencies of these summative scores across the sample are reported in Table 3. Second, a score was calculated and assigned according to the highest number endorsed by a student, regardless of the total number selected. For example, if a student selected the combination above (i.e., 1, 2, 3, 4, 6), that student received a maximal score of 6. The Pearson correlation value indicates the summative and maximal value scores are significantly related ($r = 0.93$, $n = 25,955$, $p < 0.01$, two-tailed). Therefore, data suggest that the thoughts presented in Table 1, intended to capture a student’s experience of distress and suicidal ideation, form a continuum of severity. Arguably the greatest clinical value lies in the maximal thought endorsed by a student since students likely experience the less severe thoughts preceding their most severe thought.

Because the suicidality continuum is a frequency concept, the frequency of those who responded “Yes” to “*During the stressful period, did you seriously consider attempting suicide*” was placed on the continuum using maximal values after “*I wish I was dead*” and before “*I want to kill myself.*” This effort sought to contextualize the severity of this item in relation to other pre-morbid and suicidal thoughts, as “seriously consider attempting suicide” remains one of the most commonly used markers of suicidal ideation.

Table 3

Distress Continuum Summarized by Summation versus Maximal Values

During the stressful period, did you have any thoughts similar to the following? (Select all that apply)	Summation Value (%)	Maximal Value (%)
(1) This is all just too much	28	21
(2) I wish this would all end	16	15
(3) I have to escape	9	13
(4) I wish I was dead	3	5
(5) I want to kill myself	2	3
(6) I might kill myself	1	2
(7) I will kill myself	0	1
I did not have thoughts like these	42	41

Note. For undergraduates, n = 14,067; for graduate students, n = 12,071

Researchers have called for the exploration of variations that may exist in the general model of PTG, impacting differential endorsements of PTG (Calhoun & Tedeschi, 2004). Baker and colleagues (2008) illustrated that growth assessments measure a unique dimension of experience following a highly stressful event; therefore, researchers can inquire specifically about self-reported growth. Calhoun and Tedeschi (2006) posited that because affected individuals can likely best determine whether change warrants the label growth, perception of growth is amenable to self-report. Further, individuals' experiences may be private, such that external sources alone would not accurately portray an individual's growth (Calhoun & Tedeschi, 2006). Instructions of the Posttraumatic Growth Inventory (PTGI) ask participants to "*Indicate for each of the statements below the degree to which this change occurred in your life as a result of your crisis, using the following scale.*" Similarly, participants in the current study were asked to reflect on the most stressful period experienced in the past 12 months at the time of survey completion. Following in-depth questions regarding that period of time, participants were asked to identify the worst point of that stressful period and write a text response in response to the following prompt: "*Please briefly describe this worst point.*" Participants then answered additional questions related to the subjectively worst point during their most stressful period. Finally, participants were asked item 79: "*In what ways do you feel like you have grown from going through this stressful experience and / or what personal strengths have you become more aware of?*" Participants were asked to provide a text response. There was a 250 character limit for this open response question.

Chapter 4: Data Analysis and Expected Results

Research Questions

Research Question 1: What percentage of students endorses Posttraumatic Growth (PTG)?

Expectation: No specific predictions are made. Based on existing literature, it is expected that between 30% and 80% of students will endorse PTG. Percentages ranging from 30% to 40% are considered a sizeable minority, and percentages ranging from 60% to 80% are considered a sizeable majority.

Rationale: Researchers employing quantitative and qualitative analyses to determine the prevalence of growth have found a range of 3% to 98% of the population endorsing PTG (Linley & Joseph, 2004; Calhoun & Tedeschi, 2006). Most commonly, reported prevalence rates lie between 30% and 40% or 60% to 80% (Linley & Joseph, 2004; Calhoun & Tedeschi, 2006).

Research Question 2: Does the likelihood of endorsing PTG vary according to age, gender, race/ethnicity, or level of suicidality?

Expectation: Self-identifying as a young adult (i.e., ages 18-24), non-European American, or female will be associated with greater likelihood of endorsing PTG. The relationship between level of suicidality and the likelihood of endorsing growth has not been addressed in the literature, so no specific hypotheses are made.

Rationale: Researchers have proposed that PTG potential is highest during late adolescence and young adulthood, such that individuals who qualify as adults (i.e., older

than 24 years of age) should be less likely to endorse PTG; (Meyerson et al., 2011; Nelson, 2011). Helgeson and colleagues (2006) conducted a meta-analysis, finding that young adults, ethnic minorities, and females received higher benefit finding scores across 87 studies. Vishnevsky, Cann, Calhoun, Tedeschi, and Demakis (2010) conducted a meta-analysis of 70 studies and found that females endorsed more growth than males. Some research suggests that gender differences related to likelihood of endorsing growth may not appear until late adolescence or early adulthood, so findings of the current study would likely capture such gender differences if they exist (Meyerson et al., 2011). If suicidality serves to remind students of their mortality, thereby resulting in a consideration of existential matters and life priorities, as posed by Wren-Lewis (2004), PTG potential may increase as a result. Other research suggests that PTG potential is optimized among late adolescence and early adulthood when the trauma endured is rated moderately severe, so if suicidality indicates a disruption in higher order schema, such that successful coping is inhibited, the likelihood of endorsing PTG may decrease as suicidality increases (Meyerson et al., 2011).

Research Question 3: What domains of PTG do students self-report, and which domains are most common?

Expectation: Self-reported domains of PTG will reflect perceived changes in personal strength, new possibilities, relating to others, appreciation of life, and spiritual change. Unanticipated domain categories are expected to emerge from the data. No predictions are made regarding the relative frequency of categories.

Rationale: Tedeschi and Calhoun (1995) discerned three broad domains of PTG (i.e., changes in perception of self, changes in relationships with others, changes in philosophy of life) upon analyzing qualitative and quantitative data reflecting positive change. Factor analysis employed to create the Posttraumatic Growth Inventory (PTGI) determined five factors of PTG, accounting for 62% of the total variance: personal strength, new possibilities, relating to others, appreciation of life, and spiritual change (Tedeschi & Calhoun, 1996). While confirmatory factor analyses have confirmed Tedeschi and Calhoun's (1996) findings, the original factor structure has been recreated only once among culturally diverse populations (Ho, Chan, & Ho, 2004; Taku et al., 2008; Weiss & Berger, 2006; Splevins et al., 2010; Hooper et al., 2009). In addition, researchers have acknowledged that studies to date have been conducted using relatively homogenous samples, such that the factors originally enumerated may not comprehensively capture the experience of growth among more diverse populations (Cann et al., 2010). Calhoun and Tedeschi (2006) contended that individuals can be considered experts, so given the opportunity, each can proficiently determine what constitutes growth and report unique experiences accordingly.

When PTG among specific cultural populations has been measured using the PTGI, items and subscales have been added or omitted according to qualitative investigations and respective factor loadings or correlations (Splevins et al., 2010). For instance, two items reflecting 'patience' as a growth domain were added to the instrument when assessing PTG among Latinas living in the United States (Abraido-Lanza, Guier, &

Colon, 1998). Similarly, interviews with young Israelis illuminated two additional domains of PTG – “feelings of responsibility” and “connection to community and land” (Laufer & Solomon, 2006). Each study has modified the PTGI in unique ways, resulting in an indeterminate pattern. Splevins and colleagues (2010) posited that distinctions exist among cultures (e.g., collectivistic versus individualistic) that may inform interpretations and reports of growth (Takano & Osaka, 1999).

Because of the qualitative nature of this study, specific predictions regarding domains and relative frequencies are withheld intentionally. Themes reflecting domains of PTG will be established by the data as opposed to by preexisting theory, per recommendations related to exploratory data analysis (Hsieh & Shannon, 2005; Kondracki, Wellman, & Amundson, 2002; Roberts, 2001). The researcher will reference existing models as they apply to the current data analysis in order to increase the transparency of the analysis.

Research Question 4: Does the likelihood of self-reported PTG in each domain vary according to age, gender, race/ethnicity, or level of suicidality?

Expectation: Female students will be more likely to endorse growth reflective of spiritual and relationship changes. No predictions are made relative to race/ethnicity or level of suicidality given lack of existing, comprehensive data. Because unanticipated themes are expected to emerge from the data, unanticipated relationships between demographic variables and these themes are also expected.

Rationale: Studies have demonstrated that the greatest difference in endorsement of PTG between females and males lies in spiritual and relationship domains (Tedeschi & Calhoun, 1996). Researchers have suggested that ethnically diverse groups may differentially endorse domains of PTG due to cultural factors (e.g., levels of social support and religiosity, and varied interpretations of positive change experiences), but no specific relationships have been demonstrated among a population as racially and ethnically diverse as the American college student population (Meyerson et al., 2011). Periods of disruption subsequent to trauma that include consideration of mortality have been suggestive of growth related to life purpose and life meaning, so level of suicidality may relate to domains reflective of new possibilities and appreciation of life (Wren-Lewis, 2004).

Planned Analyses

Protocol for Categorizing Students' Perceived Posttraumatic Growth

To gain understanding about students' subjective experience of PTG (Research Question 3), participants were asked to respond to the following question (item 73): "*In what ways do you feel like you have grown from going through this stressful experience and / or what personal strengths have you become more aware of?*" These responses will be categorized using the current coding protocol, developed according to representational thematic text analysis, which is a subtype of qualitative content analysis (Roberts, 2001). The purpose of qualitative content analysis is to subjectively identify themes within text data through systematic classification of coding, and doing so allows qualitative data to

be quantitatively analyzed (Hsieh & Shannon, 2005; Kondracki et al., 2002). Open-ended questions are amenable to this method of analysis, particularly when existing information in the literature is limited (Hsieh & Shannon, 2005). Representational thematic text analysis allows categories to emerge from the data, so the researchers' preconceptions do not overshadow the respondents' intended meaning.

The validity and reliability of the coding determines the success of qualitative content analysis, so a description of the proposed process is detailed (Hsieh & Shannon, 2005). The coding protocol will be implemented in total by the primary investigator and three graduate student research assistants. First, the primary researcher and one research assistant will develop preliminary codes, capturing latent content in categories of and manifest content in sub-categories (Rew, Rochlen & Murphy, 2008). Then, as Creswell (1994) suggested, the two researchers will revise these categories according to patterns that arise in the data. These themes will inform initial coding of categories, but both investigators will continually revise codes as they identify clear patterns (Conger, 1998; Creswell, 1994; Miles & Huberman, 1994). Categories should correspond to the research questions, be exhaustive, and remain mutually exclusive, if quantitative analyses will be conducted subsequently (Krippendorff, 2004). The number of categories should range from ten to fifteen, and categories can be organized into subcategories (Conger, 1998; Hsieh & Shannon, 2005). Should multiple categories be noted in a unique response, each will be coded. Those responses that cannot be grouped with at least one other response will be marked "other."

After coding 30% of the data, the two investigators will conduct a reliability check to resolve questions related to specific cases or overlapping categories (Schilling, 2006). A coding schema will be designed to reflect the data analysis process and provide categorical examples. This schema will serve to increase reliability by guiding coders with rules related to text analysis (Krippendorf, 2004). The team will conduct a second reliability check once 60% of the responses have been independently coded, ensuring continued inter-rater reliability within the coding process (Miles & Huberman, 1994; Schilling, 2006). A final code will be established, and the remaining responses will be categorized accordingly. Finally, the two coders will discuss any cases that remain ambiguous and determine the names of each category and sub-category. The coding schema will include these names, coding instructions, and an example for each category and sub-category.

Assessing Reliability

Once coding of all responses by the two investigators is complete, a third, summative check of inter-rater reliability will be conducted. The coding schema will then be given to a third coder who will code 100% of the data set. Consensus codes of the primary and second raters along with the independent codes of the third rater will determine reliability of the content analysis. A Krippendorf's alpha coefficient of .80 or greater will constitute acceptable reliability (Krippendorf, 2004). Finally, the primary investigator will recode the entire data set using the coding schema to determine intra-

rater reliability. This process will generate a list of coding categories and subcategories, which will then be interpreted and used in future analyses.

Quantitative Analyses

Data will be prepared for binary logistic regression analyses by creating a dichotomous dependent variable named “growth.” Responses to the item measuring PTG will be dummy coded to reflect overall growth (i.e., 0 = absence of overall growth, 1 = presence of overall growth). Subsequently, these responses will be dummy coded to reflect each of the categories derived through content analysis (i.e., 0 = absence of growth domain, 1 = presence of growth domain). In addition, categorical independent variables will be dummy coded.

Data will be examined to ensure that the assumptions of logistic regression are met (e.g., absence of multicollinearity, absence of outliers, and adequacy of expected frequencies). Potential problems of multicollinearity among independent variables will be assessed by examining the correlation matrix, tolerance statistic, and variance inflation factor (VIF) for each variable. Per Menard’s (2002) recommendations, low levels of multicollinearity will not cause concern, but high levels ($R^2=0.80$ or greater for at least one of the independent variables) will be acknowledged as inflating Type II error, thus potentially obscuring the presence of significant effects. In addition, corresponding to Menard’s (2002) cutoff values, variables that have a tolerance value less than 0.20 will be examined for possible multicollinearity. The presence of outliers will be assessed by examining the dbeta, leverage, and Pearson residual statistics (Menard, 2002).

Frequencies will be checked using crosstabs to ensure that for cells exhibiting categorical independent variables, all frequencies equal at least one, and no more than 20% of cells have fewer than five cases. Because students were randomly sampled within schools, a potential clustering effect exists, and the study methodology violates the assumption of independent error terms. To ensure that this clustering within institutions does not have any significant effects on the outcomes of interest, intraclass correlation coefficients (ICCs) will be computed. Barring significant ICCs and given the lack of theory suggesting PTG potential differs by institutional factors, quantitative analyses will be accomplished using binary logistic regression.

To answer Research Question One, responses to item 79: *“In what ways do you feel like you have grown from going through this stressful experience...”* will be tallied and presented as frequencies and percentages, thus indicating the proportion of students that endorses PTG.

In order to answer Research Question Two, a binary logistic regression, computed by SPSS LOGISTIC REGRESSION, will be used to explore the likelihood of endorsing PTG as related to age, gender, race/ethnicity, and level of suicidality. The continuous variables (i.e., age and level of suicidality) and categorical variables (i.e., gender and race/ethnicity) will be entered as independent variables into the regression model, with growth as the dichotomous dependent variable. The Hosmer and Lemeshow chi-square test will be used to test the overall significance of this model, with $p < .05$ used as the criterion for significance (Garson, 2011). Likelihood Ratio Tests will examine the overall

effect of race/ethnicity, testing for the significance of the reduction in -2 Log Likelihood caused by successively dropping this variable from the model. If the full model or any of the unique effects are significant, odds ratios will be examined as a measure of effect size for each independent variable. Odds ratios will be interpreted as increased likelihood of PTG associated with each independent variable.

The qualitative data will be coded using coding procedures described above, and frequencies of each category and subcategory will be provided in a table to answer Research Question Three.

Research Question Four will be answered with a binary logistic regression, exploring the relationship between, age, gender, race/ethnicity, level of suicidality, and whether or not an individual endorses each self-reported domain of growth. The regression model will include age, gender, race/ethnicity, and level of suicidality as independent variables. The self-reported domain of growth will be entered as the dependent variable, and separate analyses will be conducted for each category. The model will be tested for significance and practical importance using the procedures outlined above. If the model or any of the unique effects are significant, odds ratios will be examined as a measure of effect size for each independent variable and interpreted as the increased chance of endorsing a particular domain of growth associated with the specific independent variable.

Chapter 5: Discussion, Limitations, and Directions for Future Research

One important aim of the current study is to explore students' self-reported experiences of growth following a recent stressful period. A second goal is to explore the effects of suicidality on the likelihood of experiencing Posttraumatic Growth (PTG). This information will expand current levels of understanding related to the nature of PTG among college students, and it could serve to inform population-focused intervention strategies aimed at decreasing risk of suicide and promoting well-being on campuses.

Knowledge of the prevalence of growth among students may support consideration of growth as a resource in prevention efforts. Further, knowledge of the ways in which students are growing or not growing may support development of programming aimed at facilitating growth among this population. If differences are found in the prevalence or domains of growth endorsed by various age, gender, or racial and ethnic subgroups, programming could be tailored to incorporate specific strengths and needs of each. It would then be important to consider potential proximal and distal cultural elements of PTG to model more precisely PTG among these subgroups.

Understanding how suicidality impacts growth potential may provide yet another impetus to adopt a problem-focused paradigm of prevention, inclusive of suicide and suicidality. Because PTG has been associated with increased utilization of social support and willingness to accept help, which have been shown to decrease the risk of suicide, finding that increased levels of suicidality decrease the likelihood of PTG would suggest

the importance of targeting suicidality, in addition to suicide, as part of the problem. If suicidality during the stressful period is found to be positively related to resulting PTG, those individuals who experience suicidality may prove to be some of the most effective champions of prevention efforts since PTG has been shown to be associated with increased empathy, efforts to improve relationships, and likelihood of offering support to those experiencing similar circumstances. Additionally, research indicates that those thinking about suicide are most likely to disclose their ideation to friends, so encouraging growth among those on the front lines of prevention would likely increase the efficacy of the efforts.

This study addresses many limitations of previous research by using self-report data from a large, national, multisite, demographically diverse sample. This sample provides better representation of the college student population and answers the call of researchers for use of qualitative methods to explore differential endorsement of PTG related to demographic variables. The current study explores individuals' subjective experiences of growth and suicidality. The employment of both qualitative and quantitative methods allows the strengths of one to compensate for the weaknesses of the other. Qualitative research can comprehensively capture all domains of growth by eliciting responses that are meaningful to the respondent (Park & Lechner, 2006). In addition, qualitative methods are especially useful when research in a particular area is burgeoning, particularly given the stated constraints of the most commonly used

quantitative measurement tool – Posttraumatic Growth Inventory (PTGI). Quantitative methods allow for a large-scale study to be conducted and results generalized.

Potential limitations of this study should be noted. It is possible that the regression model omitted important variables as this limitation is common among regression modeling. A wealth of variables has been associated with the complex phenomenon of posttraumatic growth. Factors known to relate to PTG, such as distress, core belief challenge, cognitive processing and rumination, personality characteristics, self-disclosure, social support, and social context were not included and may affect students' self-reported experience of PTG. It is important to consider the results of the regression analyses exploratory in nature. Furthermore, one should not attempt to draw individual-level conclusions from aggregate data such as this. The data should be considered collectively to enhance knowledge regarding PTG among college students and inform population-focused health initiatives on college campuses.

Another limitation of the current study is that the data are retrospective. The validity of individuals' reports of growth depends on the absence of self-enhancing or positive biases (Park & Lechner, 2006). For example, McFarland and Alvaro (2000) found that when individuals were asked to report on perceived change by recalling their pre-trauma selves, they tended to minimize their initial level of functioning in relation to their current level of functioning. In addition, the validity of current findings necessitates individuals' accurate recollection of level of suicidality experienced during the stressful period. Future studies should incorporate prospective designs and gather longitudinal data

among a cohort of individuals in order to measure change among individuals while accounting for suicidality as a factor.

The final limitation to consider is the exploratory nature of this study. The identified domains of PTG are not considered comprehensive, and prior research has not demonstrated consistently differences among diverse populations relative to PTG and its respective domains. Further, established theory relating suicidality and PTG does not exist. Emerging theories explicating the PTG model should continue to be refined and empirically tested.

Appendix: Survey Codebook

Undergraduate and Graduate Student Coping with Stressful Experiences – Spring 2011

Final Revision – May 2011

Conventions	
Question Numbering Q2, Q3_1, Q3_2...	Each distinct question is numbered sequentially in presentation order. Some questions invite responses on several points; these various points share the same question number, but have a sequential letter appended to differentiate them.
Open Text Numbering	Items with free text will follow a numbering convention in which the letter 'u' follows each open text item (e.g., Q03_8u)
Survey Content “Please provide your age in years:”	The text of each question as well as all potential responses are included in this codebook. Anything marked with quotes is taken verbatim from the survey.
Response Options 1 = “Yes”	The response options for each question are indicated on the right side of each row. In the case of questions with multiple data points, the response options presented apply to each point. When there are response options nested within categories within an item (e.g., Q41), the numbering convention will reflect this nesting characteristic (e.g., Q41_1_1 indicates that participant endorsed turning to an adviser about academic problems).
Missing Values	For the majority of questions, a missing value is indicated by a blank; this may be due to either the respondent skipping the question or a skip pattern. The one exception is multiple choice questions, in which a '0' indicates a particular option has not been selected.
Skip Patterns [Q04 = 1]	Simple skip patterns, in which the availability of one or two questions is dependent on another close question, are indicated by an expression in brackets. Larger skip

	patterns, in which entire sections of questions are skipped, are indicated by separate rows labeled “Skip:” with explanations of the pattern.
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Case ID (‘cid’)	A fully anonymous number that uniquely identifies the response.	(string; always present)
School	A unique number which identifies the school of the respondent.	(integer number; always present)

Q01	“Please provide your age in years:”	(dropdown menu [18 to 95]; blank = no response)
Q02	“How do you identify?”	blank = no response or skipped 1 = “Female” 2 = “Male” 3 = “Transgender”
Q03	<p>“With the understanding that these categories might be limiting, how do you typically describe yourself? (Select all that apply)”</p> <p>Q03_1= “African American, of African descent, African, of Caribbean descent, or Black” Q03_2 = “Asian or Asian American (e.g., Chinese, Japanese, Korean)” Q03_3 = “Caucasian, White, of European descent, or European (including Spanish)” Q03_4 = “Hispanic, Latino or Latina (e.g., Cuban American, Mexican American, Puerto Rican)” Q03_5 = “Middle Eastern or East Indian (e.g., Pakistani, Iranian, Egyptian)” Q03_6 = “Native American (e.g., Dakota,</p>	blank = no response or skipped 1 = TRUE; 2 = FALSE

	Cherokee) or Alaskan Native” Q03_7 = “Native Hawaiian or other Pacific Islander (e.g., Samoan, Papuan, Tahitian)” Q03_8 = Other, please specify:”	
Q03_8u	(no prompt; provided for “Other, please specify:” response to Q03_8) [Q03_8 = 1]	(text; blank = no response or skipped)
Q04	“Are you an international student?”	blank = no response or skipped 1 = “Yes” 2 = “No”
Q05	“What is your country of origin?” [Q04 = 1]	(text; blank = no response or skipped)
Q06	“What is your grade classification?”	blank = no response or skipped 1 = “Freshman” 2 = “Sophomore” 3 = “Junior” 4 = “Senior” 5 = “Medical Student” 6 = “Law Student” 7 = “Graduate Student or Other Professional Student” 8 = “Non-degree-seeking Student”
Q07	“How would you describe your sexual orientation?”	blank = no response or skipped 1 = “Bisexual” 2 = “Gay or Lesbian” 3 = “Heterosexual” 4 = “Questioning” 5 = “Other, please specify:”

Q07_5u	(no prompt; provided for “Other, please specify:” response to Q07_5) [Q07_5 = 1]	(text; blank = no response or skipped)
Q08	“What is your current relationship status? (Select all that apply)”	blank = no response or skipped Q08_1 = “I am single and not currently dating” Q08_2 = “I am casually dating” Q08_3 = “I am in a steady dating relationship” Q08_4 = “I am partnered or married” Q08_5 = “I am separated or divorced” Q08_6 = “I am widowed”
Q09	“What is your living situation? (Select all that apply)”	blank = no response or skipped Q09_1 = “By myself” Q09_2 = “With parent(s) and / or family of origin” Q09_3 = “With roommate(s)” Q09_4 = “With romantic partner or spouse” Q09_5 = “With children or dependents” Q09_6 = “With pet(s)” Q09_7 = “Sorority or fraternity house” Q09_8 = “College or University Housing”
Q10	“What is your religious or spiritual preference? (Select all that apply)” Q10_1 = “None”	blank = no response or skipped 1 = TRUE; 2 = FALSE

	<p>Q10_2 = "Agnostic" Q10_3 = "Atheist" Q10_4 = "Buddhist" Q10_5 = "Christian" Q10_6 = "Catholic" [Q10_5 = 1] Q10_7 = "LDS" [Q10_5 = 1] Q10_8 = "Protestant" [Q10_5 = 1] Q10_9 = "Hindu" Q10_10 = "Jewish" Q10_11 = "Muslim" Q10_12 = "Native American Religion" Q10_13 = "Unitarian or Universalist" Q10_14 = "Other, please specify:"</p>	
Q10_14u	(no prompt; provided for "Other, please specify:" response to Q10_14) [Q10_14 = 1]	(text; blank = no response or skipped)
Q11	"How important are your religious or spiritual beliefs to your personal identity?"	<p>NOTE: for all 5-point Likert scales, anchors will be found on the ends and mid-points:</p> <p>blank = no response or skipped 1 = "Not at all important" 2 3 = "Moderately important" 4 5 = "Very important"</p>
Q12	"To what degree have you questioned or changed your religious or spiritual beliefs over the past year?"	<p>blank = no response or skipped 1 = "Significantly less sure of my beliefs"</p>

		<p>2</p> <p>3 = “No change in my beliefs”</p> <p>4</p> <p>5 = “Significantly more sure of my beliefs”</p>
Q13	<p>“What is the highest level of education completed by your parent(s) or significant caregiver(s)?”</p>	<p>blank = no response or skipped</p> <p>1 = “Did not complete high school”</p> <p>2 = “Finished high school or high school equivalent”</p> <p>3 = “Some college”</p> <p>4 = “Associate’s degree or technical training certificate”</p> <p>5 = “Finished college”</p> <p>6 = “Some graduate or professional school after college”</p> <p>7 = “Finished graduate or professional school (e.g., masters or doctoral degree)”</p> <p>8 = “Not sure”</p>
Q14	<p>“From which of the following have you ever received counseling or mental health services? (Select all that apply)”</p> <p>Q14_1 = “Counselor, therapist, psychologist, and / or social worker”</p> <p>Q14_2 = “Psychiatrist”</p> <p>Q14_3 = “Clergy”</p> <p>Q14_4 = “Other medical provider (e.g., physician, nurse practitioner)”</p> <p>Q14_5 = “Alternative medical provider (e.g.,</p>	<p>blank = no response or skipped</p> <p>1 = TRUE; 2 = FALSE</p>

	<p>acupuncturist, naturopathic doctor, massage therapist)”</p> <p>Q14_6 = “Other, please specify:”</p> <p>Q14_7 = “I have never received counseling or mental health services</p>	
Q14_6u	<p>(no prompt; provided for “Other, please specify:” response to Q14_6)</p> <p>[Q14_6 = 1]</p>	(text; blank = no response or skipped)
Q15	<p>“Have you ever received counseling or psychiatric services from your college or university counseling center?”</p>	<p>blank = no response or skipped</p> <p>1 = “Yes”</p> <p>2 = “No”</p>
Q16	<p>“Have you ever taken medication for mental health concerns?”</p>	<p>blank = no response or skipped</p> <p>1 = “Yes”</p> <p>2 = “No”</p>
Q17	<p>“Have you ever been hospitalized for mental health concerns?”</p>	<p>blank = no response or skipped</p> <p>1 = “Yes”</p> <p>2 = “No”</p>
Q18	<p>“Have you served in the military?”</p>	<p>blank = no response or skipped</p> <p>1 = “Yes”</p> <p>2 = “No”</p>
	<p>Skip: respondents who answered “No” to Q18 skip Q23 – Q26.</p>	
Section Intro	<p>“In this next section of the survey, we are interested in learning about challenging or upsetting experiences you may have had during your lifetime.”</p>	

Q19	“Overall, how stable was your family environment while growing up? (e.g., frequent moves, financial stresses, excessive fighting)?”	blank = no response or skipped 1 = “Not stable at all” 2 3 = “Moderately stable” 4 5 = “Very stable”
Q20	“Please characterize your lifetime medical history (e.g., serious illnesses, hospitalizations, chronic medical conditions).”	blank = no response or skipped 1 = “No medical problems” 2 3 = “Moderate medical problems” 4 5 = “Substantial medical problems”
Q21	“Please characterize your lifetime history of mental health concerns (e.g., depression, anxiety).”	blank = no response or skipped 1 = “No mental health concerns” 2 3 = “Moderate mental health concerns” 4 5 = “Substantial mental health concerns”
Q22	“In your lifetime, have you been a victim of abuse or violence (e.g., sexual abuse, physical abuse, emotional abuse, assault)?”	blank = no response or skipped 1 = “Yes” 2 = “No”
Q23	“Did you ever serve in a war zone?” [Q18 = 1]	blank = no response or skipped 1 = “Yes” 2 = “No”
Q24	“Have you been deployed more than once?”	blank = no response or

	[Q23 = 1]	skipped 1 = "Yes" 2 = "No"
Q25	"Where were you deployed? (Select all that apply) [Q23 = 1] Q25_1 = "Afghanistan" Q25_2 = "Iraq" Q25_3 = "Other, please specify:"	blank = no response or skipped 1 = TRUE; 2 = FALSE
Q25_3u	(no prompt; provided for "Other, please specify:" response to Q25_3) [Q25_3 = 1]	(text; blank = no response or skipped)
Q26	"To what extent were you exposed to traumatic events while in military service?" [Q18 = 1]	blank = no response or skipped 1 = "No trauma" 2 3 = "Moderate trauma" 4 5 = "Substantial trauma"
Q27	"Have you ever seriously considered attempting suicide at some point in your life?" [Q26 = 1]	blank = no response or skipped 1 = "Yes" 2 = "No"
Q28	"When did you first seriously consider attempting suicide?" [Q27 = 1]	blank = no response or skipped 1 = "Before or while in middle school" 2 = "While in high school" 3 = "After high school but

		<p>before college” 4 = “While in college” 5 = “After college and before graduate school” 6 = “While in graduate school” 7 = “Other, please specify:”</p>
Q28_7u	<p>(no prompt; provided for “Other, please specify:” response to Q28_7) [Q28_7 = 1]</p>	<p>(text; blank = no response or skipped)</p>
Q29	<p>“During the past 12 months, have you seriously <i>considered</i> attempting suicide?”</p>	<p>blank = no response of skipped 1 = “Yes” 2 = “No”</p>
Q30 Q30a	<p>“How many times in your life have you attempted suicide?”</p> <p>“For how many of your attempts did you receive emergency medical attention?” [Q30 = 1, 2, 3, 4, or 5 or more]</p>	<p>blank = no response or skipped 0 = “0” 1 = “1” 2 = “2” 3 = “3” 4 = “4” 5 = “5 or more”</p> <p>(pop out for Q30; blank = no response or skipped) 0 = “none” 1 = “1” 2 = “2” 3 = “3” 4 = “4” 5 = “5 or more”</p>
Q31	<p>“How many of those attempts occurred in the past 12 months?”</p>	<p>blank = no response or skipped</p>

Q31a	<p>[Q30 = 1, 2, 3, 4, or 5 or more]</p> <p>“For how many of your attempts did you receive emergency medical attention?” [Q31 = 1, 2, 3, 4, or 5 or more]</p>	<p>0 = “0” 1 = “1” 2 = “2” 3 = “3” 4 = “4” 5 = “5 or more”</p> <p>(pop out for Q31; blank = no response or skipped) 0 = “none” 1 = “1” 2 = “2” 3 = “3” 4 = “4” 5 = “5 or more”</p>
Q32	<p>“During your lifetime, how would you describe the relative severity of your suicide attempts?” [Q30 = 2, 3, 4, or 5 or more]</p>	<p>blank = no response or skipped 1 = “All of the attempts were equally life-threatening” 2 = “The more I attempted the more life-threatening they became” 3 = “The more I attempted the less life-threatening they became” 4 = “Some attempts were more life-threatening than others, but there was no real pattern”</p>
Section Intro	<p>“People generally develop consistent ways of viewing themselves and others throughout their lives. When answering these questions, please consider how you generally think and feel.”</p>	

Q33	“When approaching the challenges of daily life:”	[Item column will be blank]
Q33a	“How critical are you of yourself?”	blank = no response or skipped 1 = “Not at all critical” 2 3 = “Moderately critical” 4 5 = “Very critical”
Q33b	“How capable are you of managing your daily challenges?”	blank = no response or skipped 1 = “Not at all capable” 2 3 = “Moderately capable” 4 5 = “Very capable”
Q33c	“How motivated are you to manage your daily challenges?”	blank = no response or skipped 1 = “Not at all motivated” 2 3 = “Moderately motivated” 4 5 = “Very motivated”
Q33d	“How meaningful do you view your life to be?”	blank = no response or skipped 1 = “Not at all meaningful” 2 3 = “Moderately meaningful” 4 5 = “Very meaningful”
Q33e	“To what extent are you able to understand what must be done to face the challenges of daily life?”	blank = no response or skipped 1 = “Not at all meaningful” 2 3 = “Moderately meaningful” 4 5 = “Very meaningful”

		<p>blank = no response or skipped</p> <p>1 = "Not at all able to understand"</p> <p>2</p> <p>3 = "Moderately able to understand"</p> <p>4</p> <p>5 = "Very able to understand"</p>
Q34	<p>"People have a variety of ways of relating to their thoughts and feelings. Please rate how much each of these ways generally applies to you:"</p> <p>Q34_1 = "It is easy for me to concentrate on what I am doing."</p> <p>Q34_2 = "I can tolerate emotional pain."</p> <p>Q34_3 = "I can accept things I cannot change."</p> <p>Q34_4 = "I can usually describe how I feel at the moment in considerable detail."</p> <p>Q34_5 = "I am easily distracted."</p> <p>Q34_6 = "It's easy for me to keep track of my thoughts and feelings."</p> <p>Q34_7 = "I try to notice my thoughts without judging them."</p> <p>Q34_8 = "I am able to accept the thoughts and feelings I have."</p> <p>Q34_9 = "I am able to focus on the present moment."</p> <p>Q34_10 = "I am able to pay close attention to one thing for a long period of time."</p>	<p>blank = no response or skipped</p> <p>1 = "Rarely or not at all"</p> <p>2 = "Sometimes"</p> <p>3 = "Often"</p> <p>4 = "Almost always"</p>
Q35	"When approaching the challenges of daily life:"	[Item column will be blank]
Q35a	"How much do you feel you are a burden on others?"	blank = no response or skipped

Q35b	“How understood by others do you feel?”	<p>1 = “Not at all a burden” 2 3 = “Moderately a burden” 4 5 = “Very much a burden”</p> <p>blank = no response or skipped</p>
Q35c	“How cared for by others do you feel?”	<p>1 = “Not at all understood” 2 3 = “Moderately understood” 4 5 = “Very much understood”</p> <p>blank = no response or skipped</p>
Q35d	“How much do you feel that you can count on others?”	<p>1 = “Not at all cared for” 2 3 = “Moderately cared for” 4 5 = “Very much cared for”</p> <p>blank = no response or skipped</p>
Q35e	“How comfortable do you feel making new connections with others?”	<p>1 = “Not at all able to count on others” 2 3 = “Moderately able to count on others” 4 5 = “Very much able to count on others”</p> <p>blank = no response or skipped</p>

	<p>[Q36_(1-11)yn = 1 or 2]</p> <p>Q36_1 = “Academic or Professional Organizations”</p> <p>Q36_2 = “Arts organizations (e.g. music, drama, dance, fine arts)”</p> <p>Q36_3 = “Fraternity or sorority”</p> <p>Q36_4 = “Informal group with shared interests (e.g. exercise, entertainment, food, drink)”</p> <p>Q36_5 = “International, ethnic or cultural organizations”</p> <p>Q36_6 = “Intramural or club sports”</p> <p>Q36_7 = “Paid employment”</p> <p>Q36_8 = “Political, social-action or student government organizations”</p> <p>Q36_9 = “Religious organizations”</p> <p>Q36_10 = “Service or social organizations (other than fraternity or sorority)”</p> <p>Q36_11 = “Varsity athletic teams”</p>	5 = “Very important”
Q37	<p>“On average, how much time per week do you spend (collectively) participating in these organization(s)?”</p> <p>[Q36_(1-11)yn = 1 or 2]</p>	<p>blank = no response or skipped</p> <p>1 = “5 or less hrs/week”</p> <p>2 = “6 - 10 hrs/week”</p> <p>3 = “11 - 15 hrs /week”</p> <p>4 = “16 - 20 hrs/week”</p> <p>5 = “21 – 25 hrs/week”</p> <p>6 = “26 – 30 hrs/week”</p> <p>7 = “More than 30 hrs/week”</p>
Q38	<p>“How important is the following in staying connected with others?”</p> <p>1. “Blogging”</p> <p>2. “Email”</p> <p>3. “In person contact”</p>	<p>blank = no response or skipped</p> <p>1 = “Not at all important”</p> <p>2</p> <p>3 = “Moderately important”</p>

	<p>4. “Gaming connections” 5. “Phone” 6. “Social networking (e.g., Facebook, Twitter)” 7. “Text message” 8. “Videochat” 9. “Other, please specify:” (text)</p>	<p>4 5 = “Very important”</p>
Q38_9u	<p>(no prompt; provided for “Other, please specify:” response to Q38_9) [Q38_9 = 1]</p>	<p>(text; blank = no response or skipped)</p>
Q39	<p>“Do you consider your relationship with people you spend most of your time with to be:”</p>	<p>blank = no response or skipped 1 = “Not at all close” 2 3 = “Moderately close” 4 5 = “Very close”</p>
Q40	<p>“On average, how close is your relationship with your family?”</p>	<p>blank = no response or skipped 1 = “Not at all close” 2 3 = “Moderately close” 4 5 = “Very close”</p>
Q41_#_#	<p>“When the following problems arise, who do you turn to? (Select all that apply)”</p> <p>Q41_1 = “Academic problems” Q41_2 = “Emotional problems (e.g. feeling sad, anxious)” Q41_3 = “Financial problems” Q41_4 = “Health problems (e.g. illness, nutrition, fitness)” Q41_5 = “Life issues (e.g. identity struggles, career choices, life purpose)”</p>	<p>blank = no response or skipped 1 = TRUE; 2 = FALSE</p> <p>1 = “Adviser (e.g., academic adviser, resident adviser)” 2 = “Friend or roommate” 3 = “Instructor (e.g., professor, teaching assistant, coach)”</p>

	Q41_6 = “Relationship problems (e.g. romantic, friend, and family)”	4 = “Parent or family member” 5 = “Romantic partner” 6 = “Professional (e.g., physician, counselor, clergy)” 7 = “I would not seek help from these sources for this problem”
Q42	“To what degree do you feel connected to your college or university?”	blank = no response or skipped 1 = “Not at all connected” 2 3 = “Moderately connected” 4 5 = “Very connected”
Q43	“To what degree does the financial support you receive from all sources (including scholarship, employment income, financial aid, parent or family support) meet your needs?”	blank = no response or skipped 1 = “Does not meet my needs at all” 2 3 = “Meets my needs moderately well” 4 5 = “Meets all of my needs”
Section Intro	“Please reflect on <i>the most stressful period</i> of time that you have experienced in the past 12 months, including the present day. While it may be difficult to choose just one time, please think back on your experiences over the past 12 months and identify a single period when you <i>were most upset, distressed or overwhelmed.</i> ”	

Q44	<p>“In which month did this most stressful period begin?”</p> <p>NOTE: this was programmed so that the preceding 12 months was adjusted to end with the month in which student was participating in the survey</p>	<p>blank = no response or skipped</p> <p>“February, 2010”</p> <p>“March, 2010”</p> <p>“April, 2010”</p> <p>“May, 2010”</p> <p>“June, 2010”</p> <p>“July, 2010”</p> <p>“August, 2010”</p> <p>“September, 2010”</p> <p>“October, 2010”</p> <p>“November, 2010”</p> <p>“December, 2010”</p> <p>“January, 2011”</p> <p>“February, 2011”</p> <p>“March, 2011”</p> <p>“April, 2011”</p>
Q45	<p>“Are you currently in the stressful period?”</p>	<p>blank = no response or skipped</p> <p>1 = “Yes”</p> <p>2 = “No”</p>
Q46	<p>“For how long did this most stressful period last or how long has it lasted?”</p>	<p>blank = no response or skipped</p> <p>1 = “A day or less”</p> <p>2 = “More than a day to one week”</p> <p>3 = “More than a week to one month”</p> <p>4 = “More than one month to three months”</p> <p>5 = “More than three months to six months”</p> <p>6 = “More than 6 months”</p>
Q47u	<p>“Please briefly describe this stressful period. Recall the context of the experience (i.e., what</p>	<p>(text; blank = no response or skipped)</p>

	was occurring, where you were, how you were feeling). Provide only as much detail as you feel comfortable sharing.”	
Q48	<p>“Of the following categories, which best describe the contributors to this stressful period? (Select all that apply)”</p> <p>Q48_1 = “Academics” Q48_2 = “Death of a close family member or friend (excluding suicide)” Q48_3 = “Discrimination” Q48_4 = “Drug or alcohol overuse or addiction” Q48_5 = “Family problems” Q48_6 = “Financial problems” Q48_7 = “Friendship problems” Q48_8 = “Gender identity concerns” Q48_9 = “Legal trouble or violation of the law” Q48_10 = “Life transition (e.g. changing jobs, switching schools, new care-taking responsibilities)” Q48_11 = “Emotional health problems” Q48_12 = “Physical health problems” Q48_13 = “Problems at work” Q48_14 = “Problems experienced by close friend or family member” Q48_15 = “Relationship violence” Q48_16 = “Romantic relationship problems”</p> <p>Q48_17 = “Sexual assault” Q48_18 = “Sexual orientation concerns” Q48_19 = “Suicide of a close family member or friend” Q48_20 = “Other traumatic experience (e.g. car accident, natural disaster)” Q48_21 = “Other, please specify:”</p>	<p>blank = no response or skipped 1 = TRUE; 2 = FALSE</p>
Q48_21u	(no prompt; provided for “Other, please	(text; blank = no response

	specify.” response to Q48_21) [Q48_21 = 1]	or skipped)
Q49	<p>“To what extent did this contribute to your level of stress or feelings of distress”? [Q48_(1 – 21)]</p> <p>Q49_1 = “Academics” Q49_2 = “Death of a close family member or friend (excluding suicide)” Q49_3 = “Discrimination” Q49_4 = “Drug or alcohol overuse or addiction” Q49_5 = “Family problems” Q49_6 = “Financial problems” Q49_7 = “Friendship problems” Q49_8 = “Gender identity concerns” Q49_9 = “Legal trouble or violation of the law” Q49_10 = “Life transition (e.g. changing jobs, switching schools, new care-taking responsibilities)” Q49_11 = “Emotional health problems” Q49_12 = “Physical health problems” Q49_13 = “Problems at work” Q49_14 = “Problems experienced by close friend or family member” Q49_15 = “Relationship violence” Q49_16 = “Romantic relationship problems”</p> <p>Q49_17 = “Sexual assault” Q49_18 = “Sexual orientation concerns” Q49_19 = “Suicide of a close family member or friend” Q49_20 = “Other traumatic experience (e.g. car accident, natural disaster)” Q49_21 = “Other, please specify:”</p>	<p>blank = no response or skipped 1 = “Not at all” 2 3 = “Moderately” 4 5 = “Very much”</p>
Q49_21u	(no prompt; provided for “Other, please	(text; blank = no response

	specify.” response to Q49_21) [Q49_21 = 1]	or skipped)
Q50	<p>“Which of the following behaviors or attitudes did you use to try to manage this stressful period? (Select all that apply)”</p> <p>Q50_1 = “Acknowledging and allowing myself to feel my emotions” Q50_2 = “Creating a strategy or plan of action” Q50_3 = “Distracting myself with work, school, or leisure activities” Q50_4 = “Eating healthy” Q50_5 = “Exercising” Q50_6 = “Focusing on a positive aspect of the situation or a lesson learned” Q50_7 = “Prayer, meditation, or spirituality” Q50_8 = “Sleeping” Q50_9 = “Suppressing or avoiding my emotions” Q50_10 = “Other, please specify:”</p>	<p>blank = no response or skipped 1 = TRUE; 2 = FALSE</p>
Q50_10u	(no prompt; provided for “Other, please specify.” response to Q50_10) [Q50_10 = 1]	(text; blank = no response or skipped)
Q51	<p>“How helpful did you perceive this method of managing stress to be for you?” [Q50 = 1 – 10]</p> <p>Q51_1 = “Acknowledging and allowing myself to feel my emotions” Q51_2 = “Creating a strategy or plan of action” Q51_3 = “Distracting myself with work, school, or leisure activities” Q51_4 = “Eating healthy” Q51_5 = “Exercising”</p>	<p>blank = no response or skipped 1 = “Not at all” 2 3 = “Moderately” 4 5 = “Very much”</p>

	<p>Q51_6 = “Focusing on a positive aspect of the situation or a lesson learned”</p> <p>Q51_7 = “Prayer, meditation, or spirituality”</p> <p>Q51_8 = “Sleeping”</p> <p>Q51_9 = “Suppressing or avoiding my emotions”</p> <p>Q51_10 = “Other, please specify:”</p>	
Q52	<p>“From whom did you seek help or support in dealing with this stressful period? (Select all that apply)”</p> <p>Q52_1 = “Academic Adviser”</p> <p>Q52_2 = “Clergy”</p> <p>Q52_3 = “Coach”</p> <p>Q52_4 = “Family member”</p> <p>Q52_5 = “Friend, peer, or roommate”</p> <p>Q52_6 = “Alternative medical provider (e.g., acupuncturist, naturopathic doctor, massage therapist)”</p> <p>Q52_7 = “Instructor (e.g., professor, teaching assistant)”</p> <p>Q52_8 = “Medical provider (e.g., doctor, nurse practitioner)”</p> <p>Q52_9 = “Psychiatrist”</p> <p>Q52_10 = “Psychologist, counselor, or social worker”</p> <p>Q52_11 = “Resident Adviser”</p> <p>Q52_12 = “Romantic partner”</p> <p>Q52_13 = “Other, please specify:”</p> <p>Q52_14 = “I did not seek help from anyone”</p>	<p>blank = no response or skipped</p> <p>1 = TRUE; 2 = FALSE</p>
Q52_13u	<p>(no prompt; provided for “Other, please specify:” response to Q52_13)</p> <p>[Q52_13 = 1]</p>	<p>(text; blank = no response or skipped)</p>

Q53	<p>“Which factors influenced your decision to seek help from this person or these people? (Select all that apply)” [Q52 = 1 -13; skip if Q52 = 14 or blank]</p> <p>Q53_1 = “They had expertise in this area” Q53_2 = “I thought they would empathize or listen to me” Q53_3 = “They had gone through this experience before” Q53_4 = “I was referred to them” Q53_5 = “I didn't know where else to turn” Q53_6 = “They appeared safe to confide in” Q53_7 = “I had received help from them before” Q53_8 = “They were easily accessible” Q53_9 = “Other, please specify:”</p>	<p>blank = no response or skipped 1 = TRUE; 2 = FALSE</p>
Q53_9u	<p>(no prompt; provided for “Other, please specify:” response to Q53_9) [Q53_9 = 1]</p>	<p>(text; blank = no response or skipped)</p>
Q54	<p>“Did you see this person or these people on-campus? (i.e., were they affiliated with your college or university?)” [Q52 = 2, 6, 8, 9, or 10]</p> <p>Q54_2 = “Clergy” Q54_6 = “Alternative medical provider (e.g., acupuncturist, naturopathic doctor, massage therapist)” Q54_8 = “Medical provider (e.g., doctor, nurse practitioner)” Q54_9 = “Psychiatrist” Q54_10 = “Psychologist, counselor, or social worker”</p>	<p>blank = no response or skipped 1 = “Yes” 2 = “No”</p>
Q55	<p>“Why did you choose not to seek help or support</p>	<p>blank = no response or</p>

	<p>from anyone during this stressful period? (Select all that apply)” [Q52 = 14]</p> <p>Q55_1 = “I did not think that it would be helpful to talk to anybody about it” Q55_2 = “I did not think I needed support or help” Q55_3 = “I did not want anyone to interfere or try to help” Q55_4 = “I typically do not share my personal concerns with other people” Q55_5 = “I did not want to burden other people” Q55_6 = “I felt ashamed or embarrassed” Q55_7 = “I was worried that they would judge me or think of me differently” Q55_8 = “I did not feel like there was anyone I could talk to” Q55_9 = “I thought there could be negative consequences for seeking help (e.g., being forced into treatment, losing my job, academic setbacks)” Q55_10 = “I have had a prior negative experience seeking help or support” Q55_11 = “Other, please specify:”</p>	<p>skipped 1 = TRUE; 2 = FALSE</p>
Q55_11u	<p>(no prompt; provided for “Other, please specify:” response to Q55_11) [Q55_11 = 1]</p>	<p>(text; blank = no response or skipped)</p>
Q56	<p>“Why did you choose not to seek professional help during this stressful period? (Select all that apply)” [Q52 = 1, 3 - 5, 7, 11 - 14; skip if Q52 = 2, 6, 8, 9 or 10]</p> <p>Q56_1 = “It did not occur to me to seek professional help” Q56_2 = “I did not feel a need for professional</p>	<p>blank = no response or skipped 1 = TRUE; 2 = FALSE</p>

	<p>help”</p> <p>Q56_3 = “I did not know how to access professional help”</p> <p>Q56_4 = “I did not think that I could afford professional help”</p> <p>Q56_5 = “Seeking professional help is not acceptable in my family or my family’s culture”</p> <p>Q56_6 = “Seeking professional help is not acceptable in my peer culture or friend group”</p> <p>Q56_7 = “I was afraid my culture or background would not be understood”</p> <p>Q56_8 = “I did not think that professional help would be useful”</p> <p>Q56_9 = “I was worried about the potential consequences of seeking professional help on my future academic and career opportunities”</p> <p>Q56_10 = “I did not think professional help was available”</p> <p>Q56_11 = “I thought it would take too long to be seen by a professional”</p> <p>Q56_12 = “I have had a prior negative experience seeking professional help or support”</p> <p>Q56_13 = “Other, please specify:”</p>	
Q56_13u	<p>(no prompt; provided for “Other, please specify:” response to Q56_13)</p> <p>[Q56_13 = 1]</p>	(text; blank = no response or skipped)
Q57	<p>“How important was the following in helping you to reach out for support during this stressful time?”</p> <p>Q57_1 = “Blogging”</p> <p>Q57_2 = “Email”</p> <p>Q57_3 = “In person contact”</p> <p>Q57_4 = “Gaming connections”</p> <p>Q57_5 = “Phone”</p> <p>Q57_6 = “Social networking (e.g., Facebook,</p>	<p>blank = no response or skipped</p> <p>1 = “Not at all important”</p> <p>2</p> <p>3 = “Moderately important”</p> <p>4</p> <p>5 = “Very important”</p>

	Twitter)” Q57_7 = “Text message” Q57_8 = “Videochat” Q57_9 = “Other, please specify:”	
Q57_9u	(no prompt; provided for “Other, please specify:” response to Q57_9) [Q57_9 = 1]	(text; blank = no response or skipped)
Section Intro	“Now please focus on the "worst point" (when you were experiencing the most intense distress) during the stressful period that you’ve been focusing on.”	
Q58u	“Please briefly describe this worst point.”	(text; blank = no response or skipped)
Q59	“At the worst point during this stressful period, how would you rate the following:”	[Item column will be blank]
Q59a	“How emotionally distressed were you?”	blank = no response or skipped 1 = “Not at all distressed” 2 3 = “Moderately distressed”
Q59b	“How disrupted were you in your day-to-day functioning?”	4 5 = “Very distressed” blank = no response or skipped 1 = “Not at all disrupted” 2 3 = “Moderately

		<p>disrupted”</p> <p>4</p> <p>5 = “Very disrupted”</p>
Q60	<p>“At the worst point during this stressful period, how did your social behaviors change?”</p>	<p>blank = no response or skipped</p> <p>1 = “I spent a lot less time socializing”</p> <p>2</p> <p>3 = “No change”</p> <p>4</p> <p>5 = “I spent a lot more time socializing”</p>
Q61	<p>“At the worst point during this stressful time, when approaching the challenges you were facing:”</p>	<p>[Item column will be blank]</p>
Q61a	<p>“How critical were you of yourself?”</p>	<p>blank = no response or skipped</p> <p>1 = “Not at all critical”</p> <p>2</p> <p>3 = “Moderately critical”</p> <p>4</p> <p>5 = “Very critical”</p>
Q61b	<p>“How capable were you of managing these challenges?”</p>	<p>blank = no response or skipped</p> <p>1 = “Not at all capable”</p> <p>2</p> <p>3 = “Moderately capable”</p> <p>4</p> <p>5 = “Very capable”</p>
Q61c	<p>“How motivated were you to manage these challenges?”</p>	<p>blank = no response or skipped</p> <p>1 = “Not at all motivated”</p> <p>2</p> <p>3 = “Moderately</p>
Q61d		

Q61e	<p>“How meaningful did you view your life to be?”</p> <p>“To what extent were you able to understand what needed to be done to face these challenges?”</p>	<p>motivated” 4 5 = “Very motivated”</p> <p>blank = no response or skipped 1 = “Not at all meaningful” 2 3 = “Moderately meaningful” 4 5 = “Very meaningful”</p>
Q61f	<p>“How much did you feel you were a burden on others?”</p>	<p>blank = no response or skipped 1 = “Not at all able to understand” 2 3 = “Moderately able to understand” 4 5 = “Very able to understand”</p>
Q61g	<p>“How understood by others did you feel?”</p>	<p>blank = no response or skipped 1 = “Not at all a burden” 2 3 = “Moderately a burden” 4 5 = “Very much a burden”</p>
Q61h	<p>“How cared for by others did you feel?”</p>	<p>blank = no response or skipped</p>

Q61j	<p>“How much did you feel that you could count on others?”</p> <p>“How comfortable did you feel making new connections with others?”</p>	<p>1 = “Not at all understood” 2 3 = “Moderately understood” 4 5 = “Very understood”</p> <p>blank = no response 1 = “Not at all cared for” 2 3 = “Moderately cared for” 4 5 = “Very cared for”</p> <p>blank = no response or skipped 1 = “Not at all able to count on others” 2 3 = “Moderately able to count on others” 4 5 = “Very much able to count on others”</p> <p>blank = no response or skipped 1 = “Not at all comfortable” 2 3 = “Moderately comfortable” 4 5 = “Very comfortable”</p>
Section Intro	“In this section we hope to learn more about what you may have experienced during the	

	stressful period that you identified.”	
Q62	<p>“During the stressful period, did you engage in any of the following behaviors? (Select all that apply)”</p> <p>Q62_1 = “Getting into fights” Q62_2 = “Increased gambling” Q62_3 = “Increased internet use or gaming” Q62_4 = “Increased use of drugs or alcohol” Q62_5 = “Risk-taking behavior (e.g., drunk driving, speeding)” Q62_6 = “Risky sexual behavior (e.g., unprotected sex with an untested partner, sexual contact with strangers or while intoxicated)” Q62_7 = “Severely restricted or excessive eating” Q62_8 = “Self-injury (e.g., intentional cutting, burning)” Q62_9 = “Significant drop in academic performance” Q62_10 = “Violating the law or violating school policies” Q62_11 = “None of the above”</p>	<p>blank = no response or skipped 1 = TRUE; 2 = FALSE</p>
Q63	<p>“During the stressful period, did you have any thoughts similar to the following? (Select all that apply)”</p> <p>Q63_1 = "This is all just too much" Q63_2 = "I wish this would all end" Q63_3 = "I have to escape" Q63_4 = "I wish I was dead" Q63_5 = "I want to kill myself" Q63_6 = "I might kill myself" Q63_7 = "I will kill myself" Q63_8 = I did not have any thoughts like these</p>	<p>blank = no response or skipped 1 = TRUE; 2 = FALSE</p>

Q64	<p>“During this stressful period, did you seriously consider attempting suicide?”</p>	<p>blank = no response or skipped 1 = “Yes” 2 = “No”</p>
Q65	<p>“When these thoughts were at their most intense, how strong was your intent to kill yourself?” [Q64 = 1]</p>	<p>blank = no response or skipped 1 = “Not at all strong” 2 3 = “Moderately strong” 4 5 = “Very strong”</p>
Q66	<p>“During this stressful period, did you do any of the following? (Select all that apply)” [Q64 = 1]</p> <p>Q66_1 = “Investigated ways to kill myself” Q66_2 = “Formed a specific plan for attempting suicide” Q66_3 = “Gathered the material for a suicide attempt” Q66_4 = “Wrote a suicide note but did not post it or leave it where others might read it” Q66_5 = “Wrote a suicide note and shared it or posted it” Q66_6 = “Wrote a will or otherwise put my affairs in order” Q66_7 = “Formed a suicide pact with others” Q66_8 = “Did a practice run of a suicide attempt” Q66_9 = “Began a suicide attempt, then changed my mind” Q66_10 = “None of the above”</p>	<p>blank = no response or skipped 1 = TRUE; 2 = FALSE</p>
Q67	<p>“During this stressful period, did you attempt suicide?”</p>	<p>blank = no response or skipped</p>

		<p>1 = "Yes" 2 = "No"</p>
Q68	<p>"How many attempts did you make during this time?" [Q67 = 1]</p>	<p>blank = no response or skipped 1 = "1" 2 = "2" 3 = "3" 4 = "4" 5 = "5 or more"</p>
Q68a	<p>"For how many of your attempts did you receive emergency medical attention?" [Q68 = 1, 2, 3, 4, or 5 or more]</p>	<p>(pop out for Q68; blank = no response or skipped) 0 = "none" 1 = "1" 2 = "2" 3 = "3" 4 = "4" 5 = "5 or more"</p>
Q69	<p>"Which of these statements describe your intentions at the time of the attempt(s)?" [Q67 = 1]</p>	<p>blank = no response or skipped 1 = "I made a serious attempt to kill myself and I intended to die" 2 = "I tried to kill myself but knew that I might survive using the method I chose" 3 = "I was ambivalent and partly wanted to die but also partly wanted to live" 4 = "I mostly wanted to live but a small part of me"</p>

		wanted to die” 5 = “I did not intend to die”
Q70u	“How do you feel now about surviving the attempt(s)?” [Q67 = 1]	(text; blank = no response or skipped)
Q71	“Which of the following best describe your reasons for attempting suicide? (Select all that apply)” [Q67 = 1] Q71_1 = “It was impulsive and not really a choice” Q71_2 = “I wanted others to pay attention and take me seriously” Q71_3 = “I wanted to make others feel guilty or sorry” Q71_4 = “I wanted to show others the extent of my pain or unhappiness” Q71_5 = “I wanted to get help” Q71_6 = “My emotional pain became unbearable” Q71_7 = “I did not know what else to do” Q71_8 = “I had nothing else to live for” Q71_9 = “I felt like I was a burden on people around me” Q71_10 = “Other, please specify:”	blank = no response or skipped 1 = TRUE; 2 = FALSE
Q71_10u	(no prompt; provided for “Other, please specify:” response to Q71_10) [Q71_10 = 1]	(text; blank = no response or skipped)
Q72	“How would you describe the role of drugs or alcohol in your most recent suicide attempt? (Select all that apply)”	blank = no response or skipped 1 = TRUE; 2 = FALSE

	<p>[Q67 = 1]</p> <p>Q72_1 = “I was not using alcohol or drugs before or during my attempt”</p> <p>Q72_2 = “I intended to overdose with alcohol or drugs”</p> <p>Q72_3 = “I intended to use alcohol or drugs to reduce my inhibitions or fears about attempting suicide”</p> <p>Q72_4 = “My attempt was not planned in advance and may have happened because I was using alcohol or drugs”</p> <p>Q72_5 = “I was using alcohol or drugs but they were not related to my attempt”</p> <p>Q72_6 = “Addiction to alcohol or drugs was a reason for my attempt”</p>	
Q73	<p>“How would you describe your current thoughts about suicide?”</p> <p>[Q29 = 1]</p>	<p>blank = no response or skipped</p> <p>1 = “I am no longer considering suicide and I doubt that I will ever again”</p> <p>2 = “I am no longer considering suicide but I might in the future”</p> <p>3 = “I am still considering suicide, but not very seriously”</p> <p>4 = “I am currently seriously considering a suicide attempt”</p>
Section Intro	<p>“In this final, very brief section of the survey we hope to learn about what was helpful or could have been helpful in increasing your ability to manage during your <i>most stressful time</i>.”</p>	

Q74	<p>“From the list below, please indicate how the following impacted your ability to cope during the most stressful time?”</p> <p>Q74_1 = “Connection with your friends” Q74_2 = “Connection with your family” Q74_3 = “Connection to religion, spirituality or a higher power” Q74_4 = “Connection with your college or university” Q74_5 = “Connection with a mental health professional” Q74_6 = “Having experienced a similar situation before” Q74_7 = “Involvement in extracurricular groups, activities, or communities” Q74_8 = “Resources available on campus (e.g., student services, health center, counseling center, career center)”</p>	<p>blank = no response or skipped 1 = “Considerably reduced my ability to cope” 2 3 = “Did not impact my ability to cope” 4 5 = “Considerably improved my ability to cope”</p>
Q75	<p>“Do you think you will be less equipped or better equipped to handle future stress as a result of your experiences during the past year?”</p>	<p>blank = no response or skipped 1 = “Considerably less equipped” 2 3 = “No change” 4 5 = “Considerably more equipped”</p>
Q76	<p>“After going through this stressful period, how likely would you be to seek help through your</p>	<p>blank = no response or skipped</p>

	campus counseling center for future stressful experiences?"	1 = "Not at all likely" 2 3 = "Neither more nor less likely" 4 5 = "Very likely"
Q77	"If you had a friend who was going through similarly stressful experiences, how likely would you be to refer her or him to the campus counseling center?"	blank = no response or skipped 1 = "Not at all likely" 2 3 = "Neither more nor less likely" 4 5 = "Very likely"
Q78u	"What could your college or university have provided you or done differently to better help you manage during this stressful time?"	(text; blank = no response or skipped)
Q79u	"In what ways do you feel like you have grown from going through this stressful experience and / or what personal strengths have you become more aware of?"	(text; blank = no response or skipped)

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