

THESIS

COLLEGE STUDENTS COPING WITH LOSS

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John Adams

Department of Psychology

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Master's Committee:

Advisor: Lee A. Rosén

Bryan Dik

Kimberly L. Henry

Zeynep Biringen

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ABSTRACT

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Approximately 22 to 30 percent of all college students have experienced the death of a friend or family member in the last 12 months (Balk 2008, 2010; Hardison, Neimeyer & Lichstein, 2005). Grief caused by a death loss significantly impairs the academic performance, social functioning, and emotional health of college students (Balk & Vesta, 1998; Balk, 2008; Servaty-Seib & Hamilton, 2006). There are many ways to cope with and process grief. Posttraumatic growth can result in feeling a greater appreciation for life, feeling closer to loved ones and overall more self-confident (Davis, 2008). However, research has yielded mixed results regarding the impact of posttraumatic growth on grief symptoms, with some studies finding that posttraumatic growth decreases grief symptoms and others finding that it has no impact on grief symptoms or increases symptoms (Davis, Nolen-Hoeksema, & Larson (1998); Linley, Joseph, & Goodfellow (2008); Calhoun & Tedeschi (2006)). Continuing bonds is an approach to grieving that aims to redefine the relationship with the deceased, maintaining it symbolically, spiritually, and/or in memory (Attig, 1996; Hedtke & Winslade, 2003). Previous studies exploring the impact of continuing bonds on grief symptoms have also had mixed results (Neimeyer, Baldwin & Gillies (2006); Rando (1993)). This study sought to explore how both approaches to grief impact grief symptoms in a college aged population that has experienced a death loss in the past year. Additionally, this study also considered another outcome variable uniquely relevant to college students: college adjustment. This study examined how both of these approaches to grieving impacting college students' social, academic, and emotional adjustment to the college

environment. When the control variables age, gender, and type of loss were considered, the contributions of the linear regression model to adjustment variance was nonsignificant.

Posttraumatic growth had a nonsignificant effect on grief symptoms. Continuing bonds scores were found to have a significant positive relationship with grief symptoms. These findings suggest that continuing bonds contributes to increased grief symptoms for college students, discouraging the use of continuing bonds based interventions for bereaved students in college counseling centers. Future research could examine why continuing bonds has this impact on college students and what approaches to processing grief could help reduce grief symptoms in college students.

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INTRODUCTION

Of the many possible developmental hurdles that young adults experience during college, bereavement can represent one of the most traumatic and life-changing. Over the last few decades, researchers have documented the high frequency of college students experiencing the death of a loved one. Approximately 22 to 30 percent of all college students have experienced the death of a friend or family member in the last 12 months (Balk 2008, 2010; Hardison, Neimeyer & Lichstein, 2005). Most students have never grieved the death of a loved one prior to this point in their lives. University faculty, staff, and counselors are typically ill-equipped to guide students through these traumatic events (Balk, 2001). Bereaved students struggle to find support in their standard social spheres, as many young adults do not know how to discuss death and can feel very uncomfortable when the subject arises (Balk, 2008; Parikh & Servaty-Seib, 2013). Grief significantly impairs the academic performance, social functioning, and emotional health of college students (Balk & Vesta, 1998; Balk, 2008; Servaty-Seib & Hamilton, 2006). While attempting to cope with grief without the same social support they have come to expect when dealing with less serious problems, college students must also contend with the typical developmental tasks that accompany young adulthood. College communities are presented with the challenge of being prepared to support grieving students and providing the resources necessary for them to cope in a healthy manner.

Bereavement

Bereavement is the period of grief and mourning after a death. When one grieves, it is part of the normal process of reacting to a loss. One may experience grief as a mental, physical, social or emotional reaction. Mental reactions can include anger, guilt, anxiety, sadness and

despair. Bereavement grief is a complex reaction to loss (Weiss, 2008). M.S. Stroebe, Hansson, Stroebe and Schut (2001) explain that the grief following death can be “defined as a primarily emotional (affective) reaction out of the loss of a loved one through death. It incorporates diverse psychological...and physiological manifestations.” Some have argued for grief as its own distinct emotional state (Weiss, 2008); Bonanno (2001) describes grief as a complex state of multiple emotions: “(a) Whereas emotions happen quickly and are over quickly, grief can go on for months and years; (b) whereas an emotion tends to be responsive to an immediate situation, grief is expressive of a persisting awareness of a disruption in one’s life; and (c) whereas emotions ordinarily are unconsidered responses to an event, grief typically involves, if anything, hyperawareness.”

A wide array of intense psychological, physiological, and emotional responses is possible when an individual grieves a death. Walsh-Burke (2006) lists sadness, anger, anxiety, loneliness, fatigue, helplessness, numbness, shock and relief all as expectable feelings after a serious loss. (Relief may seem out of place, but it can show up in individuals who had a loved one with a prolonged illness.) Cognitively, the bereaved can experience confusion, difficulty concentrating, and even auditory/visual hallucinations. Grieving individuals may also experience physiological responses such as tightness in the chest or throat, lack of energy, stomach distress, sleep disturbance, loss of appetite, and restlessness (Walsh-Burke, 2006). While clinicians, researchers and theorists contended for decades that loss of a loved one almost universally causes long term intense emotional distress (Osterweis, Solomon & Green, 1984), more recent research from Bonanno et al. (2002) suggests otherwise. Over fifty percent of a sample of individuals who had lost a spouse exhibited low depression symptoms just six months after the loss event. These findings demonstrate the potential resilience of many individuals during bereavement, and they

have been replicated in other studies (Zhang, Mitches, Bambauer, Jones, & Prigerson, 2008; Schulz et al., 2003).

For those who continue to struggle with emotional and/or cognitive processing of the loss for a prolonged period of time, unresolved grief can result in severe consequences. Indicators of unresolved grief – also called complicated grief – include persistent anxiety, desire to die, persistent blame and guilt, compulsive self-reliance, and aggressive outbursts (Dilworth & Hill, 1998). A study of individuals who had a first degree relative die found unresolved grief to be correlated with increased intensity of “affective symptomatology; past history of depression, suicide attempts, and alcohol abuse; and family history of depression” (Zisook & Lyons, 1990). Persistent Complex Bereavement Disorder (PCBD) occurs when a bereaved individual experiences at least one of the following four symptoms more days than not for a year or more: persistent yearning for the deceased, intense sorrow and emotional pain, preoccupation with the deceased, and preoccupation with the circumstances of the death (American Psychiatric Association, 2013). Individuals suffering from PCBD also experience reactive distress to the death and social/identity disruption. Some examples of these symptoms include “maladaptive appraisals about oneself in relation to the death” and “a desire to die in order to be with the deceased” (American Psychiatric Association, 2013). According to the American Psychological Association (2013), 2.4-4.8% of bereaved individuals develop PCBD. Recent studies have found this phenomenon to be more frequent with 10-15% of grieving individuals experiencing complicated grief (Prigerson et al, 2009; Shear 2011). Rings (2009) found that how close the bereaved felt to the deceased “accounts for a significant amount of variance in symptom severity” for those struggling with complicated grief.

Bereavement and the College Experience

Bereavement can significantly affect multiple facets of college students' daily lives, including sleep, academic success, and interpersonal relationships. Issues with sleep deprivation caused by grief related insomnia often can occur for students in early stages of grief (Hardison, Neimeyer, and Lichstein, 2005). Understandably, these students then struggle to muster the energy for typical daily activities like walking to class or climbing stairs. Grief can negatively affect other important behaviors for academic success like staying organized, managing time well, and meeting deadlines (Balk & Vesta, 1998). Interpersonally, students experiencing bereavement have pronounced difficulty finding friends that can and will be with them in their "down" moments; fellow students find the grief tiresome to deal with and have difficulty accepting the intensity of their experience (Balk, 2008). When grieving students do not have other arenas for adequate support, they have no choice but to try to cope alone. Of the cognitive symptoms of bereavement, struggling to concentrate is unsurprisingly the most prevalent (Balk, 2008). Heather Servaty-Seib (2006) notes that grieving students' grades usually drop significantly in their first semester following the event. The bereaved can also experience debilitating emotional outbursts (Balk, 1998) categorized by inability to stop crying, gasping for breath, and personally frightening levels of intensity (Balk, 2008). With bereaved college students often experiencing many to all of these negative effects of grief, the need for aid from the college system cannot be overstated.

Of the students that seek a counselor's help during college, 4.1% have grief as a primary presenting problem (Balk, 2001). The National Survey of College Counseling Centers found that a very small fraction of the college student population seeks mental health services (Gallagher, 2012). Indeed, despite the decrease over time in the stigma surrounding mental health services as

an avenue for support, Balk (2008) observes that for college students, seeking help is the exception, not the rule. Bereaved students seek a number of alternative options for coping. Some pursue religion as both a community for support and a way of finding understanding and meaning around the death. Students often need to reassess very foundational questions for one's view on life, such as the realities of goodness, purpose, and interrelatedness (Attig, 1996). Religions often encourage this type of coping. Oltjenbruns (1999) observes that the funerals of Christian and Jewish practices require the bereaved to face the changes caused by death. Nabe (1997) suggests that religion can promote a view of death as a "release from burden, pain, and...suffering" for the deceased. As discussed earlier, students typically yearn for some kind of social support as a means of coping with bereavement. Villaceros, Serrano, Bermejo, Magana and Carbias (2014) found that satisfaction with available social support directly correlates with psychological well-being. Satisfaction with available social support was also correlated with lower probability of complicated grief, or a long-lasting form of grief that does not improve and continually debilitates normal functioning ("Complicated Grief," 2014). As an example of a new emerging type of social support, social media has emerged as an avenue for social support among bereaved students in the past decade. A study by Pennington (2013) found that most of the participants kept their Facebook friendship with the deceased and found looking at pictures on their profile to be helpful in the grieving process.

In addition, adolescents often end up utilizing denial to cope with their bereavement. Lenhardt and McCourt (2000) hypothesize reasons for this common method of coping. Bereaved youths may use denial to protect themselves from the kind of overwhelming feelings of sadness and anxiety described earlier (Lenhardt & McCourt, 2000). They may also be trying to prevent being estranged from their friends (Harris, 1991). Adolescents who have lost a sibling or a parent

will most likely not have friends that have had a similar experience. The shame of being so drastically different from their social group can provide the impetus for denial. Bereaved young adults may also resist crying and yearning for someone that is gone, behaviors they perceive as childlike and below their current level of maturity (Garber, 1995). Furthermore, the parents of grieving adolescents may encourage their denial. The parent, dealing with the loss of a spouse or child, may lean on their surviving children for support. Out of fear of being overwhelmed by having to assist the child with their grief, the parent can allow them to persist in their denial (Lenhardt & McCourt, 2000).

Healthy Bereavement Responses

Significant debate has surrounded the concept of growth as an outcome of the grieving processes (Davis, 2008). Those who have significantly processed a loss often report feeling a greater appreciation for life, feeling closer to loved ones and overall more self-confident (Davis, 2008). Researchers disagree over the extent to which these reports of growth arise from real adaptation to life changes instead of defense mechanisms or coping. In response, psychologists have created multiple models of posttraumatic growth in attempts to explain the changes of self that occur after a loss. Based on Tedeschi and Calhoun's (2004) model, the bereaved feel deeply motivated to search for meaning, recognizing the destruction of their assumptions and/or implicit beliefs about predictability and other people. As they ponder questions like "Why him?" or "Why so young," they must assimilate and possibly restructure their worldview to fit their new understanding of how the world works (Davis, 2008). Similarly, Joseph and Linley's (2005) model describes traumatized individuals as needing to process all of the information surrounding the event. They either assimilate or accommodate the information based on current knowledge structures (Davis, 2008). Positive accommodations or growth arise from openness to the

existential issues posed by the event. Negative accommodations are characterized by depression and helplessness.

Research regarding posttraumatic growth's impact on grief outcomes has yielded mixed findings. Davis, Nolen-Hoeksema, and Larson (1998) studied a sample of individuals who had lost a family member over four time points across the first 20 months following the loss. Participants who had engaged in finding benefits – another phrase for posttraumatic growth used in the literature – from their loss experienced less anxiety and depression symptoms over time. Participants who either stopped seeking benefits or never engaged in benefit finding experienced increased distress over time. These results indicate a correlation between posttraumatic growth and decreased symptoms of mental distress. Similarly, Linley, Joseph, and Goodfellow (2008) found that six months after a traumatic event, positive psychological changes predicted fewer symptoms of posttraumatic stress, depression and anxiety. However, Calhoun and Tedeschi (2006) noted that posttraumatic growth does not necessarily reduce symptoms related to trauma, and some studies have shown that posttraumatic stress is often positively correlated with reported posttraumatic growth (Linley & Joseph, 2004). It is possible that posttraumatic growth contributes positively to the mental health of college students by other means than reducing grief symptoms. Frazier et al., (2009) found that 25% of a sample of college students were more satisfied with life eight weeks after experiencing a traumatic event, and another 8% found life more meaningful.

Historically, bereavement research has posited “letting go” as the most psychologically healthy approach to processing grief (Freud, 1917). However, in the last twenty years, some researchers have found evidence for continuing connection or “continuing bonds” with the deceased to be beneficial. A continuing bonds outlook for grieving aims to redefine the

relationship with the deceased, maintaining it symbolically, spiritually, and/or in memory (Attig, 1996; Hedtke & Winslade, 2003). Neimeyer, Baldwin and Gillies (2006) explored relationships between perceptions of continuing bonds, closeness to deceased, identity formation, and meaning making. They found that bereaved individuals experiencing continuing bonds could manage that approach to grief much more easily when they understood the death within a broader framework. Those who felt strongly connected without a broader framework to explain the death “experienced their loss as anguishing and intense;” continuing bonds was correlated with greater grief symptoms for these individuals without a broader framework for understanding the death of their loved one. (Neimeyer, Baldwin, & Gillies, 2006). Rando (1993) asserts that two conditions must be satisfied to establish a healthy relationship with the deceased: the bereaved must recognize that the loved one is dead and the reformed relationship must not impede progressing into a new life. If these conditions are met, a healthy continuing bond characterized by identification with the deceased can provide the bereaved an “enrichment of the self” (Field, 2008).

While there have been mixed findings regarding the impact of posttraumatic growth and continuing bonds on grief symptoms, posttraumatic growth has been found to have a positive relationship with adjustment. Adjustment can at times be a nebulous term within the field of psychology, used to refer to a broad array of psychological processes and phenomena. In this context, adjustment refers to the behavioral process humans initiate to meet their needs and find comfort in their surroundings (“Adjustment,” 2017). As previously mentioned, posttraumatic growth has been found to contribute to feeling more satisfied with life, finding life more meaningful, feeling closer to loved ones, and feeling more self-confident (Frazier et al., 2009;

Davis, 2008). These manifestations of growth meet needs for social support, autonomy, and healthy perspective on life.

Few prior studies have explored a potential relationship between continuing bonds and adjustment. Barr (2012) provides both a theoretical and statistical basis to support the concept that continuing bonds would have a positive relationship with adjustment. The most commonly used measure for posttraumatic growth, the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996), has five subscales: Relating to Others, New Possibilities, Personal Strength, Spiritual Change, and Appreciation of Life. Taku et al. (2008) tested multiple models of posttraumatic growth through confirmatory factor to analyze whether these five subscales are in fact separate psychological processes, and they found that an oblique five-factor model was most appropriate. Barr posited that a continuing bonds relationship with the deceased that is characterized by using the bond as an internal “safe haven” would provide the individual with the comfort – and thus ability – to grow in the areas identified in the five-factor model of the PTGI. Barr refers to this bond as internalized continuing bonds. Utilization of this internalized bond could look like using the deceased as a secure attachment and a role model, referring to memories of the deceased for learning valuable lessons (Field et al., 1999; Barr 2012). This safe haven could support the bereaved in relating to others, exploring new possibilities, gaining autonomy and thus personal strength, and appreciating life in new and meaningful ways. Indeed, Barr found that internalized continuing bonds had a small significant effect on posttraumatic growth.

Taking into consideration that Barr found a positive impact of continuing bonds on posttraumatic growth, it can be reasoned that continuing bonds could also have a positive impact on adjustment. Epstein et al. (2006) did explore possible relationships between continuing bonds

and adjustment, asserting from their findings that different manifestations of continuing bonds have either no impact or a negative impact on adjustment. However, Epstein et al. operationalized “adjustment” as reduction in grief symptoms and general psychopathology symptoms, using the Inventory of Traumatic Grief (ITG; Prigerson & Jacobs, 2001) and the General Health Questionnaire-28 (GHQ-28; Goldberg & Williams, 1988) respectively. To isolate adjustment as it has been discussed here and explore a potential relationship with continuing bonds, a study would need to use a measure that approaches adjustment as how individuals are functioning overall in emotionally and socially. Epstein approached adjustment as merely lack or presence of pathology.

The Current Study

Many of the previous studies examining bereavement response in college students have been fairly limited in scope. For example, Balk, Walker and Baker (2010) primarily measured the percentage of college students that had lost a loved one in the last year. Villaceros et al (2014) examined satisfaction with social support among bereaved individuals. Furthermore, few studies examined which approaches to processing and coping with death loss are healthy and effective for bereaved college students. Some of the literature suggests that both posttraumatic growth and continuing bonds have potential to help bereaved individuals reduce their grief symptoms. Other studies have found no significant impact for either approach on grief symptoms, and in the case of continuing bonds, some studies found continuing bonds to be related to a significant *increase* in grief symptoms. There is some support in the literature for the positive impact of posttraumatic growth on adjustment. Furthermore, a theoretical and statistical connection between posttraumatic growth and continuing bonds provides a solid basis for exploring a potential positive impact of continuing bonds on adjustment.

With the present study, I sought to examine how two different but related approaches to processing grief – posttraumatic growth and continuing bonds – impact college student mental health and adjustment to college. Posttraumatic growth and continuing bonds served as independent variables in this study. Gender and type of loss were used as controls. A normal grief symptoms measure, a complicated grief symptoms measure, and a measure of college adjustment were the outcome variables examined. The college adjustment measure, the College Adjustment Questionnaire (CAQ; Shirley & Rosén, 2010), considers adjustment specifically within the college experience, measuring social satisfaction, academic success and emotional adaptation. These subscales align much more closely with the concept of adjustment that has been discussed here. The literature supports hypotheses regarding the impact of posttraumatic growth and continuing bonds on adjustment. Due to mixed findings regarding the impact of posttraumatic growth and continuing bonds on grief symptoms, an open research question is more appropriate. As such, the hypotheses and research question are as follows:

Hypothesis 1: Posttraumatic growth will have a positive relationship with college adjustment. (Frazier et al., 2009; Davis, 2008)

Hypothesis 2: Continuing bonds will have a positive relationship with college adjustment. (Barr, 2012)

Research Question: Do posttraumatic growth and continuing bonds have a relationship with the normal grief symptom and complicated grief symptoms of college students who have experienced a death loss in the last year, and if so, what is the direction and strength of that relationship?

METHODS

Participants

The data collection occurred at a large university in the western United States, and students from Introductory Psychology classes were recruited. In the spring and fall semesters of 2016, 283 and 508 college students respectively participated in the survey for a total of 791 participants. Of the 791 participants, 45 students indicated that they had not experienced a loss in the last 12 months and were removed from the sample. A total of 248 of the remaining 746 reported that they had experienced a human death loss in the last 12 months. Of those 248, 20 either had missing data or indicated they had experienced a death loss but in fact wrote a loss into the “other” category that was not in fact a human death loss, narrowing the sample to 228 ($n=228$). Little’s Missing Completely at Random (MCAR; Little, 1988) test was run to determine if any statistically significant differences exist between the responses that were missing data and those fully completed. Little’s MCAR test examines if there is a pattern in the missing data and if that pattern has a relationship with the data values. The null hypothesis is that data is missing completely at random. Little’s MCAR results were insignificant ($\chi^2=9.148$, $p=.330$), indicating that the data were missing completely at random. In return for participating in this study, participants received credit toward their Introductory Psychology course requirements. The study was reviewed and approved by the Colorado State Institutional Review Board prior to data collection.

Participants identified as 165 females (72.4%), 60 males (26.3%), and 3 other gender identity (1.3%). The average age was 19.1 years ($SD=1.74$). 151 identified as first years in college (66.2%), 48 as sophomores (21.1%), 22 as juniors (9.6%), 5 as seniors (2.2%), and 2 as

fifth year or above (0.9%). Additionally, 9 (3.9%) identified as African American/Black, 1 (0.4%) Alaska Native, 4 (1.8%) as American Indian/Native American, 13 (5.7%) as Asian, 185 (81.1%) as Caucasian/White, 34 (14.9%) as Latino or Hispanic, 4 (1.8%) as Middle Eastern, 2 (0.9%) as Hawaiian/Pacific Islander, and 6 (2.6%) as Other. 211 (92.5%) identified as heterosexual, 2 as gay/lesbian (0.9%), 9 as bisexual (3.9%), and 6 as other sexual orientation (2.6%).

Measures

Demographic Data. Participants were asked to indicate their age, gender, year in school, and race/ethnic identity.

Loss Events Scale. On the Loss Events scale (Cooley, Toray & Roscoe, 2010), respondents selected losses they have experienced in their lifetime from a list of 29 different losses including loss due to death of a loved one. There was also a space labeled “other” for participants to type in losses they have experienced not listed among the 29 items. The scale defines loss broadly, including items like breakup with a romantic partner and failure to achieve a dream/life aspiration. At the end of the scale, participants chose which loss proved most significant for them and responded to following measures based on that loss in particular.

Hogan Grief Reaction Checklist. Six typical aspects of the general bereavement process will be assessed by the Hogan Grief Reaction Checklist (HGRC; Hogan, Greenfield & Schmidt, 2001; see Appendix A): Despair (13 items), Detachment (8 items) Disorganization (8 items), Panic Behavior (14 items), Blame and Anger (7 items), and Personal Growth (11 Items). These subscales combine for a 61-item questionnaire. Participants respond on a Likert-type scale from 1 to 5, ranging from *Does not describe me at all* to *Describes me very well*. Higher scores are

indicative of maladaptive responses in the first five subscales and of potentially adaptive responses in the Personal Growth subscale. The total score of the first five subscales ranges from 50 to 250. The Personal Growth subscale ranges from 11 to 55. Hogan, Greenfield and Schmidt (2001), in a study of 586 adults who had lost an immediate family member, reported a test-retest reliability of 0.77 or higher for all six subscales, with four subscales (Despair, Blame and Anger, Personal Growth, and Disorganization) scoring above 0.8 reliability. They found an internal consistency Cronbach alpha of 0.9 for the total instrument and internal consistency above 0.8 for almost every subscale. Blame and Anger had an internal consistency of 0.79. When testing for convergent and divergent validity, the HGRC subscales scores significantly correlated with corresponding subscale scores in the Texas Revised Inventory of Grief (TRIG; Faschingbauer, 1981), the Impact of Event Scale, (IES ; Horowitz et al., 1979), and the Grief Experience Inventory (Sanders et al., 1985). The HGRC scores had a Cronbach alpha of 0.96 within the context of this sample.

Inventory of Complicated Grief. Pathological grief symptoms (those who exceed a certain severity after an appropriate amount of time and cause an inability to accept a loss and move on) will be examined by the Inventory of Complicated Grief (ICG; Prigerson et al., 1995; see Appendix B). The scale includes 19 items in which the participant responds to descriptions of their grief experience on a Likert-type scale. Scores range from 0 representing *Almost Never* and 4 representing *Always*. The total score ranges from 0 to 76. The ICG scores had an internal consistency Cronbach alpha of 0.94 (Prigerson et al, 1995). Exploratory factor analysis revealed that all items of the ICG load on a single factor intended to measure complicated grief, eigenvalue=10.015, $R^2=0.999$. The ICG scores had fairly high concurrent validity to related scale scores, with correlations of $r=0.67$ to the Beck Depression Inventory, $r=0.81$ to the Texas

Revised Inventory of Grief, and $r=0.70$ to the Grief Measurement Scale; all of these correlations were significant with $p < 0.001$. The ICG scores had a Cronbach alpha of 0.94 within the context of this sample.

College Adjustment Questionnaire. The College Adjustment Questionnaire (CAQ; Shirley & Rosén, 2010; see Appendix C), a 14-item measure that asks undergraduate college students to rate how accurate each item is in its representation of their experience of college at the time of responding. Participants respond on a 1-5 Likert scale, from *Very Inaccurate* to *Very Accurate* respectively. The total score ranges from 14 to 70. The CAQ is made of three separate subscales. The Social subscale (5 items), with scores ranging from 5 to 25, asks questions related to their socialization in college and their satisfaction with their relationships. The Emotional Adjustment subscale (4 items), with scores ranging from 4 to 20, considers the success students have had in coping with and adapting to the stresses of college. The Academic subscale (5 items), with scores ranging from 5 to 25, assesses how well they meet educational demands with items examining their motivation to learn and their scholastic achievement thus far in college. Shirley and Rosén (2010) found strong factor loading for all three subscales, with a Tucker Lewis Index of 0.93 and a Comparative Fit Index of 0.94. CAQ scores had high reliability, with a Cronbach's alpha of 0.83, and the subscale scores each had good reliability with alphas of 0.89 for Academic Adjustment, 0.84 for Social Adjustment, and 0.79 for Emotional adjustment. The scale scores also had high convergent validity with the Student Adaptation to College Questionnaire (SACQ; Baker and Siryk, 1989), with a correlation of $r=0.67$ for the full scales, $r=0.65$ for academic subscale scores, $r=0.67$ for social subscale scores, and $r=0.69$ for emotional subscale scores; all correlations were significant with $p < 0.001$. The CAQ scores had a Cronbach alpha of 0.53 within the context of this sample.

Continuing Bonds Scale. The Continuing Bonds Scale (CBS; Field, Gal-Oz, & Bonanno, 2003; see Appendix D) measures the extent to which an individual feels that they have developed a persisting relationship with their loved one. The 11 items focus on relinquishment and maintenance – two opposing processes within the framework of attachment theory – of the relationship with the loved one. To describe how true each statement is for them, participants respond on a Likert-type scale with scores ranging from 1 to 5 corresponding to *Not true at all* to *Very true*. An example of an item is, “I have inner conversations with ___ where I turn to them for comfort or advice,” representing maintenance of the relationship. The total scores ranges from 11 to 55. This study found good internal consistency for CBS scores with a Cronbach Alpha of 0.87. Neimeyer, Baldwin, and Gillies (2006) found through principal-components analysis that all items load on one factor that assesses strength of the continuing relationship with the loved one, with scores boasting an internal consistency of 0.9. The CBS scores had a Cronbach alpha of 0.94 within the context of this sample.

Post-Traumatic Growth Inventory. Students’ posttraumatic growth will be measured with the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996; see Appendix E). The PTGI is made up 21 total items with five subscales: Relating to Others, New Possibilities, Personal Strength, Spiritual Change and Appreciation of Life. Each item is an example of a change that participants respond to on a six-point Likert-type scale with scores ranging from 1 to 5 corresponding to *I did not experience this change as a result of my crisis* to *I experienced this change to a very great degree as a result of my crisis*. The phrasing of this scale will be adapted to be more accurately applied to this study, changing “my crisis” to something like “losing a loved one.” Higher scores indicate greater growth from their trauma (Tedeschi & Calhoun, 1996). The same study reported an internal consistency Cronbach alpha of 0.9 from the PTGI

scores and a test-retest reliability of 0.71 for PTGI scores. Comparing the PTGI to the NEO Personality Inventory and the Life Orientation Test to assess concurrent and discriminant validity, they found that optimism, religiosity, and the major dimensions of personality excluding neuroticism positively correlated with PTGI scores. The PTGI has been validated on groups with exposure to various types of adversity and extreme stress. These validation studies have been composed of college students (Calhoun, Cann, Tedeschi, & McMillan, 2000), adolescents (Ickovics et al., 2006; Milam, Ritt-Olson, & Unger, 2004), holocaust child survivors (Lev-Wiesel & Amir, 2003), adults with a history of cardiovascular disease (Sheikh & Marotta, 2005), and adults recovering from a diagnosis of cancer (Ho, Chan, & Ho, 2004). The PTGI scores had a Cronbach alpha of 0.96 within the context of this sample.

Procedure

This study was conducted online through Qualtrics® over the course of two college semesters. At the beginning of the survey, participants were informed that that they would be filling out a survey regarding grief and loss. They were told that some questions may trigger some psychological and/or emotional distress, and that they could discontinue participation at any time without consequence. They were provided with contact information for the University Counseling Center and informed that they would still receive credit even if they did not complete the survey. Students were informed that clicking the arrow to proceed to the survey would represent their giving consent to participate in the study. Participants had an hour to complete the survey, composed of Loss Event Descriptor questions, Demographic Data questions, HGRC, ICG, CAQ, PTGI and CBS. Participants that did not indicate a death loss did not respond to the HGRC, the ICG, or the CBS. In order to prevent confusion regarding pet death, it was explicitly stated that “death loss” refers to the death of a human person. At the end of the study,

participants responded to a few qualitative questions about their loss, such as, “How has your loss affected you in college?” The average participant was not expected to take longer than forty minutes.

Data Analysis

The five grief subscale scores of the HGRC, that is, all of the subscales of the HGRC except Personal Growth, were totaled for one score to represent grief symptoms(HGRC-GS).. Grief symptoms, complicated grief symptoms, and college adjustment were each regressed on posttraumatic growth and continuing bonds to explore the relationship between these approaches to grief (PTGI and CBS) and outcomes (HGRC-GS, ICG, CAQ) for college students. The three outcome measures were also regressed on age, gender, and type of loss to control for these variables. Type of loss was separated into dummy variables, and two types of loss, death loss of aunt and other death loss, were excluded from analysis because they did not have enough power. They each accounted for 5% or less of the overall sample. Multiple linear regression was used for college adjustment, which adequately met normality assumptions. SPSS 24 was used to run the regression for college adjustment. The scores of grief symptoms and complicated grief symptoms were transformed to have a minimum score of zero, as the lowest score for both of the scales used for those constructs indicated zero symptoms. Because both grief symptoms and complicated grief symptoms had non-normal, positively skewed data, the data for these two measures was natural log transformed (see Appendix F). A constant of 1 was added to the data values for complicated grief symptoms prior to log transformation. Censored regression was then used to explore their relationships with posttraumatic growth, continuing bonds, and the control variables. Censored regressions were run in Mplus 7.0 (Muthén & Muthén, 1998-2012).

Reported effect sizes are based on Cohen's (1968) recommendations, with .10 indicating a small effect, .30 indicating a medium effect, and .50 indicating a large effect.

RESULTS

Multiple-Linear Regression

Multiple-linear regression was used to test college adjustment's relationship with continuing bonds and posttraumatic growth. All three of these variables were normally distributed. Pearson correlations between college adjustment, continuing bonds and posttraumatic growth were not collinear, indicating that linear regression was appropriate. To check for violations of homoscedasticity, scatterplots were generated using the predicated values of all possible pairs of independent and dependent variables. Visual inspection of the plots verified that homoscedasticity was maintained. Scatterplots also appeared to have suitable homogeneity of variance. Bootstrapping was used to better approximate parameter estimates for the multiple linear regression.

A multiple linear regression analysis conducted to determine the relationship between college adjustment (CAQ) and two independent variables, post-traumatic growth (PTGI) and continuing bonds (CBS) was significant ($F(2, 222) = 5.228, p=.006$), with an $R^2 = 0.045$. However, a multiple linear regression analysis conducted to determine the relationship between college adjustment (CAQ), post-traumatic growth (PTGI) and continuing bonds (CBS), and control variables in age, gender, and type of loss was non-significant ($F(10, 214) = 1.382, p=.19$), with an $R^2 = 0.061$. When control variables were taken into account, continuing bonds and posttraumatic growth did not have a significant impact on college adjustment, contradicting the hypotheses of this study. See table 2 for regression results.

Censored Regressions

The effects of posttraumatic growth and continuing bonds on grief symptoms was tested using censored regression. Grief symptoms was also regressed on age, gender, and type of loss to control for these variables. Type of loss was separated into eight dummy variables for each different type of human death loss, including parent, sibling, friend, aunt, uncle, cousin, grandparent, and other. Model fit is not available for censored regressions using MLR estimation, as MLR relies on raw data instead of means, variances, and covariances, which does not allow for typical model fit estimations (Muthén & Muthén, 1998–2017). There was a large significant direct effect between continuing bonds and grief symptoms. Per these data, college students who took a continuing bonds approach to grief during the first year after a death loss actually saw their grief symptoms increase. There was no significant direct effect between posttraumatic growth and grief symptoms. There was a small significant direct effect between gender and grief symptoms. Men reported significantly fewer grief symptoms than women. See Table 3 for complete censored regression results.

The effects of posttraumatic growth and continuing bonds on complicated grief symptoms was tested using censored regression. Complicated grief symptoms was also regressed on age, gender, and type of loss to control for these variables. Type of loss was separated into eight dummy variables for each different type of human death loss, including parent, sibling, friend, aunt, uncle, cousin, grandparent, and other. Model fit is not available censored regressions using MLR estimation, as MLR relies on raw data instead of means, variances, and covariances, which does not allow for typical model fit estimations (Muthén & Muthén, 1998–2017). There was a large significant direct effect between continuing bonds and complicated grief symptoms. Per these data, college students who took a continuing bonds approach to grief during

the first year after a death loss saw their complicated grief symptoms increase. There was no significant effect between posttraumatic growth and complicated grief symptoms. There was a small significant direct effect between gender and complicated grief symptoms. Men reported significantly fewer complicated grief symptoms than women. See table 4 for complete censored regression results.

DISCUSSION

Anywhere from a quarter to nearly one third of college students have experienced a death loss within the last calendar year (Balk, 2008). While some research has been conducted to explore these frequencies and the extent to which the bereavement process impacts multiple facets of their lives (Hardison, Neimyer, & Lichstein, 2005; Balk & Vesta, 1998; Servaty-Seib, 2006), there has been little exploration into which coping methods are best for college students. The primary purpose of the present study was to compare the impact of posttraumatic growth (a well-documented positive reaction to trauma), and continuing bonds (a reaction to bereavement that has yielded mixed results), on mental health outcomes for college students who had experienced a death loss in the last year. Posttraumatic growth was measured by the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) and continuing bonds was measured by the Continuing Bonds Scale (CBS; Field et al., 2003). The outcomes considered were normal grief symptoms, measured by the Hogan Grief Reaction Checklist (HGRC; Hogan, Greenfield & Schmidt, 2001); complicated grief symptoms, measured by the Inventory of Complicated Grief (ICG; Prigerson et al., 1995); and adjustment to college, measured by the College Adjustment Questionnaire (CAQ; Shirley & Rosén, 2010).

Participants' posttraumatic growth and continuing bonds scores had a significant relationship with college adjustment scores only when college adjustment was regressed on posttraumatic growth and continuing bonds without the presence of control variables. Posttraumatic growth and college adjustment did not have a significant relationship with college adjustment when college adjustment was regressed on control variables age, gender, and type of loss along with posttraumatic growth and continuing bonds. When control variables were taken

into account, the contributions of the model to adjustment variance was nonsignificant.

Continuing bonds scores were found to have a significant positive relationship with both normal grief symptoms and complicated grief symptoms.

The present study is unique in a couple of areas. Very few studies have explored how continuing bonds relates to college student bereavement. Further, little research has considered how different approaches to bereavement like posttraumatic and continuing bonds might relate to adjustment to college.

Our hypotheses that both posttraumatic growth and continuing bonds would have a significant positive relationship with college adjustment were not supported by the results of this study. In contrast to our findings, some previous studies have found posttraumatic growth to be related to improved mental health and well-being for college students (Zoellner & Maercker, 2006). Frazier, Tennen, Gavian, Park, Tomich, and Tashiro (2009) conducted an online survey of 1,500 undergraduate students about their psychological well-being. Eight weeks after the initial survey administration, 10% of the sample reported that they had experienced a traumatic event (e.g., a life-threatening accident, an assault) that they rated as causing intense fear, helplessness, or horror. Findings demonstrated that many students who had experienced a traumatic event scored higher on psychological well-being than before: 5% reported an increase in the strength of their relationships, 12% found life more meaningful, 25% were more satisfied with life, 8% were more grateful, and 7% were more religiously committed than eight weeks prior (Frazier et al., 2009).

Though a small percentage of Frazier et al.'s college student sample experienced growth after a trauma within an eight-week window, it may be the case that enough time had not passed since the loss for posttraumatic growth to impact the adjustment of our students. Our second

hypothesis regarding a positive relationship between continuing bonds and adjustment had limited statistical support, and our theoretical support was largely connected to the assertion that posttraumatic growth would positively influence adjustment. In light of our finding that posttraumatic growth did not have a significant impact on adjustment, it is not surprising that our hypothesis around continuing bonds and adjustment also was not supported. Due to the great amount of transition students experience in college, it is possible that adjustment for college students is impacted by many more variables than adjustment for older individuals living a more stable, consistent life. College students are often settling into a new environment, developing an identity, trying new experiences, and building deeper relationships. Posttraumatic growth and continuing bonds may have less meaningful impacts on adjustment variance as compared to the influence of all of these other potential variables.

It also seems notable that posttraumatic growth had no significant relationship with either normal or complicated grief symptoms. In their handbook summarizing developments on the topic of posttraumatic growth, Calhoun and Tedeschi (2006) indicate that posttraumatic growth does not necessarily reduce negative symptoms and consequences related to trauma. Again, because our sample experienced their death loss within the last year, even if posttraumatic growth can in some cases ameliorate negative trauma consequences, their trauma may have occurred too recently for it to have had that effect.

Continuing bonds had a significant positive relationship with normal grief symptoms in this study. It is challenging to compare this result to a previous finding as almost no studies have analyzed the relationship between continuing bonds and mental health outcomes in bereaved college students. Barr (2012) examined how both externalized continuing bonds, identified by illusions and hallucinations of the deceased, and internalized continuing bonds, identified by

“using the deceased as a lasting legacy or independence-promoting secure base,” related to grief and depressive symptoms. Barr found that both externalized and internalized continuing bonds were predictive of increased grief and depressive symptoms. As the scale used in this study seems to measure a construct closely resembling the concept of “internalized continuing bonds” in Barr’s study, our findings are consistent. While the present study examined a sample that experienced a death loss in the last year, Barr’s sample had experienced a death loss in the last five years. Previous research has indicated that continuing bonds is only a helpful approach to bereavement when the bereaved individual has been able to accept the death (Neimeyer, Baldwin, & Gillies, 2006). While the amount of time that had passed since the participants of this study experienced their loss may not have been long enough for them to accept that their loved one has died, the timeframe of Barr’s study suggests that it is unlikely that time since the loss event has any impact on the efficacy of continuing bonds for college students. In the present study, continuing bonds had a significant negative relationship with complicated grief symptoms as well. Many college students in Western society engage in complex identity development during their educational experience, establishing themselves as independent adults and potentially differentiating themselves from their lives living with their families. Continuing bonds, an approach to bereavement that emphasizes developing a new relationship with a deceased person who likely lived in a student’s previous context, may be too much in conflict with the priorities and needs of a college student.

Limitations and Directions for Future Research

Several study limitations deserve mentioning. We relied exclusively on self-report data, contributing to subjectivity in the data. Participants for the study were self-selected and read the title of the study as “College Students Coping with Loss.” Consequently, the sample may have a

higher percentage of students who have experienced a death loss than the overall population of college students. The study's generalizability is limited due to the disproportionate percentages of White and female participants in the sample. The study's cross-sectional design prevents any kind of conclusions about the long-term impacts of posttraumatic growth and continuing bonds. Our ability to explore long term impacts was also limited by how recently the participants had experienced the loss. While this approach assisted in isolating the effects of one specific death loss – the likelihood of experiencing more than one death loss in one year is lower than in a time frame like five years – future researchers could benefit from looking at a wider time frame since the loss event. Importantly, the cross-sectional design also prevents any inference of causation between posttraumatic growth, continuing bonds, grief symptoms and college adjustment. Future studies that examine multiple time points could test hypotheses regarding how these approaches to bereavement cause change in grief symptoms or college adjustment.

Future researchers could attempt to identify factors that may have led to retention of false null hypotheses in previous studies. For example, posttraumatic growth may contribute to a significant decrease in grief symptoms at later time points than were considered in this study. While some studies have collected data at multiple time points as late as 20 months after a loss (Davis, Nolen-Hoeksema, & Larson, 1998), many are cross-sectional or merely consider two time points within the first year (Villaceros et al., 2014). Also, many studies including the current study have primarily considered reduction in grief symptoms as evidence for mental health improvement following a death loss. Future studies could examine other ways that continuing bonds and posttraumatic growth may improve mental health, like confidence in coping with grief symptoms or level of acceptance of a reality without their loved one. It is also possible that some variables have acted as moderators within the context of nonsignificant

results. Researchers could explore if amount of social support, participation in therapy, or engagement in unhealthy coping strategies like substance use impacts the relationship between mental health outcomes and continuing bonds and posttraumatic growth.

Future researchers could expand on this study by measuring other approaches to the grief process, potentially recruiting participants undergoing individual therapy from a specific therapy framework for treating grief. Longitudinal studies could explore the extent to which participants engaged in a continuing bonds approach to bereavement while they were in college, then measure them again more than 5 years later to explore if continuing bonds ever becomes more relevant or helpful across the lifespan. Also, this study asked participants to respond to survey items based on their grief experience since the most significant loss they experienced in the last year. A more complex study could examine participants who have experienced multiple death losses and explore if multiple death loss traumas has any impact on continuing bonds and posttraumatic growth as healing processes. Finally, future studies could consider what approaches to grieving are most beneficial for individuals who have experienced non-death loss, a much less researched area than bereavement.

Implications

Despite the limitations of the present study, it is one of the first to examine continuing bonds as an approach to bereavement among college students and to consider posttraumatic growth as a part of the bereavement process. I found that across measures of grief symptoms, continuing bonds contributed to worse functioning, and it had no significant impact on college adjustment. Many in the modern grief therapy community validate clients' individual approaches to their bereavement process as long as they do not appear to be causing harm. This study suggests that developing a posthumous, symbolic relationship with the deceased exacerbates

college students distressing grief symptoms and does not help them adjust to college during the year following a loss. While a client's approach to their grief may not seem harmful, these findings indicate that therapists could be better served by being wary of possible negative impacts of continuing bonds approaches during the first year after a student has lost a loved one. Therapists at college counseling centers could begin introducing that wariness with their grieving clients. As college counseling centers continue to see increased attendance every year (Center for Collegiate Mental Health, 2016) and such a high percentage of students have experienced a death loss, it is of utmost importance that therapists avoid harmful treatment.

TABLES

Table 1.

Descriptive Statistics for Predictor and Dependent Variables.

	Mean	Standard Deviation	Range
Posttraumatic Growth	53.15	25.53	0, 105
Continuing Bonds	55	12.06	11, 55
College Adjustment	40.04	14.32	3, 71
Grief Symptoms	31.78	33.01	0, 147
Complicated Grief Symptoms	15.89	13.7	0, 76

Table 2

Summary for multiple regression analysis: Model 1 - college adjustment regressed on posttraumatic growth and continuing bonds; Model 2- college adjustment regressed on posttraumatic growth and continuing bonds age, gender, and type of loss.

	<i>F</i>	<i>R</i> ²	<i>SE</i>	<i>p</i>
Model 1 (without controls)	5.228	.045	14.145	.006
Model 2 (with controls)	1.382	.061	14.288	.190

Note: Results estimated using bootstrapping.

Table 3

Censored regression: Grief symptoms regressed on posttraumatic growth and continuing bonds.

	β	B	SE	p
PTGI	-.004	-.079	.005	.353
CBS	.059	.482	.01	.000
Age	.04	.065	.038	.283
Gender	-.386	-.187	.12	.001
Parent Death	.355	.051	.468	.448
Grandparent Death	-.624	-.207	.399	.118
Sibling Death	-.219	-.034	.540	.685
Uncle Death	.664	.119	.406	.685
Friend Death	.291	.095	.397	.464
Cousin Death	.505	.076	.414	.222

Table 4

Censored regression: Complicated grief symptoms regressed on posttraumatic growth and continuing bonds.

	B	β	SE	IRR	p
PTGI	-.001	-.014	.004	0.999	.857
CBS	.057	.518	.008	1.059	.000
Age	.040	.072	.022	1.04	.069
Gender	-.352	-.171	.127	.703	.005
Parent Death	.325	.052	.299	1.384	.278
Grandparent Death	-.657	-.244	.303	.518	.03
Sibling Death	-.892	-.157	.421	.409	.034
Uncle Death	.152	.031	.347	1.164	.66
Friend Death	.067	-.024	-.214	1.069	.83
Cousin Death	-.021	-.004	.359	.979	.954

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APPENDIX A: HOGAN GRIEF REACTION CHECKLIST

HOGAN GRIEF REACTION CHECKLIST (reproduced by permission of N. Hogan, March 7, 2009)

*This questionnaire consists of a list of thoughts and feelings that you may have had since your loved one died. Please read each statement carefully, and choose the number that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement that best describes you. Please do not skip any items.*

- | | |
|-------------------------------|--------------------------|
| 1 Does not describe me at all | 4 Describes me well |
| 2 Does not quite describe me | 5 Describes me very well |
| 3 Describes me fairly well | |

- | | |
|--|-----------|
| 1. My hopes are shattered..... | 1 2 3 4 5 |
| 2. I have learned to cope better with life..... | 1 2 3 4 5 |
| 3. I have little control over my sadness..... | 1 2 3 4 5 |
| 4. I worry excessively..... | 1 2 3 4 5 |
| 5. I frequently feel bitter..... | 1 2 3 4 5 |
| 6. I feel like I am in shock..... | 1 2 3 4 5 |
| 7. Sometimes my heart beats faster than it normally does for no reason.. | 1 2 3 4 5 |
| 8. I am resentful..... | 1 2 3 4 5 |
| 9. I am preoccupied with feeling worthless..... | 1 2 3 4 5 |
| 10. I feel as though I am a better person..... | 1 2 3 4 5 |
| 11. I believe I should have died and he or she should have lived..... | 1 2 3 4 5 |
| 12. I have a better outlook on life..... | 1 2 3 4 5 |
| 13. I often have headaches..... | 1 2 3 4 5 |
| 14. I feel a heaviness in my heart..... | 1 2 3 4 5 |
| 15. I feel revengeful..... | 1 2 3 4 5 |
| 16. I have burning in my stomach..... | 1 2 3 4 5 |
| 17. I want to die to be with him or her..... | 1 2 3 4 5 |
| 18. I frequently have muscle tension..... | 1 2 3 4 5 |
| 19. I have more compassion for others..... | 1 2 3 4 5 |
| 20. I forget things easily, e.g. names, telephone numbers..... | 1 2 3 4 5 |
| 21. I feel shaky..... | 1 2 3 4 5 |
| 22. I am confused about who I am..... | 1 2 3 4 5 |
| 23. I have lost my confidence..... | 1 2 3 4 5 |
| 24. I am stronger because of the grief I have experienced..... | 1 2 3 4 5 |
| 25. I don't believe I will ever be happy again..... | 1 2 3 4 5 |
| 26. I have difficulty remembering things from the past..... | 1 2 3 4 5 |
| 27. I frequently feel frightened..... | 1 2 3 4 5 |
| 28. I feel unable to cope..... | 1 2 3 4 5 |
| 29. I agonize over his or her death..... | 1 2 3 4 5 |
| 30. I am a more forgiving person | 1 2 3 4 5 |

- | | | | |
|---|-----------------------------|---|------------------------|
| 1 | Does not describe me at all | 4 | Describes me well |
| 2 | Does not quite describe me | 5 | Describes me very well |
| 3 | Describes me fairly well | | |

- | | | | | | | |
|-----|---|---|---|---|---|---|
| 31. | I have panic attacks over nothing..... | 1 | 2 | 3 | 4 | 5 |
| 32. | I have difficulty concentrating..... | 1 | 2 | 3 | 4 | 5 |
| 33. | I feel like I am walking in my sleep..... | 1 | 2 | 3 | 4 | 5 |
| 34. | I have shortness of breath..... | 1 | 2 | 3 | 4 | 5 |
| 35. | I avoid tenderness..... | 1 | 2 | 3 | 4 | 5 |
| 36. | I am more tolerant of myself..... | 1 | 2 | 3 | 4 | 5 |
| 37. | I have hostile feelings..... | 1 | 2 | 3 | 4 | 5 |
| 38. | I am experiencing periods of dizziness..... | 1 | 2 | 3 | 4 | 5 |
| 39. | I have difficulty learning new things..... | 1 | 2 | 3 | 4 | 5 |
| 40. | I have difficulty accepting the permanence of the death..... | 1 | 2 | 3 | 4 | 5 |
| 41. | I am more tolerant of others..... | 1 | 2 | 3 | 4 | 5 |
| 42. | I blame others | 1 | 2 | 3 | 4 | 5 |
| 43. | I feel like I don't know myself..... | 1 | 2 | 3 | 4 | 5 |
| 44. | I am frequently fatigued..... | 1 | 2 | 3 | 4 | 5 |
| 45. | I have hope for the future..... | 1 | 2 | 3 | 4 | 5 |
| 46. | I have difficulty with abstract thinking..... | 1 | 2 | 3 | 4 | 5 |
| 47. | I feel hopeless..... | 1 | 2 | 3 | 4 | 5 |
| 48. | I want to harm others..... | 1 | 2 | 3 | 4 | 5 |
| 49. | I have difficulty remembering new information..... | 1 | 2 | 3 | 4 | 5 |
| 50. | I feel sick more often..... | 1 | 2 | 3 | 4 | 5 |
| 51. | I reached a turning point where I began to let go of some of my grief.. | 1 | 2 | 3 | 4 | 5 |
| 52. | I often have back pain..... | 1 | 2 | 3 | 4 | 5 |
| 53. | I am afraid that I will lose control..... | 1 | 2 | 3 | 4 | 5 |
| 54. | I feel detached from others..... | 1 | 2 | 3 | 4 | 5 |
| 55. | I frequently cry..... | 1 | 2 | 3 | 4 | 5 |
| 56. | I startle easily..... | 1 | 2 | 3 | 4 | 5 |
| 57. | Tasks seem insurmountable..... | 1 | 2 | 3 | 4 | 5 |
| 58. | I get angry often..... | 1 | 2 | 3 | 4 | 5 |
| 59. | I ache with loneliness..... | 1 | 2 | 3 | 4 | 5 |
| 60. | I am having more good days than bad..... | 1 | 2 | 3 | 4 | 5 |
| 61. | I care more deeply for others..... | 1 | 2 | 3 | 4 | 5 |

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APPENDIX B: INVENTORY OF COMPLICATED GRIEF

traumatic grief inventory

please tick the boxes that best describe how you feel, where **never** is taken to mean less than once monthly, **rarely** means more than once monthly but less than once weekly, **sometimes** more than weekly but less than daily, **often** about daily, & **always** means more than once daily:

		0: never	1: rarely	2: some times	3: often	4: always
1	I think about this person so much that it's hard for me to do the things I normally do					
2	memories of the person who died upset me					
3	I cannot accept the death of the person who died					
4	I feel myself longing for the person who died					
5	I feel drawn to places and things associated with the person who died					
6	I can't help feeling angry about his/her death					
7	I feel disbelief over what happened					
8	I feel stunned or dazed over what happened					
9	ever since s/he died it is hard for me to trust people					
10	ever since s/he died I feel like I have lost the ability to care about other people or I feel distant from people I care about					
11	I have pain in the same area of my body or I have some of the same symptoms as the person who died					
12	I go out of my way to avoid reminders of the person who died					
13	I feel that life is empty without the person who died					
14	I hear the voice of the person who died speak to me					
15	I see the person who died stand before me					
16	I feel that it is unfair that I should live when this person died					
17	I feel bitter over this person's death					
18	I feel envious of others who have not lost someone close					
19	I feel lonely a great deal of the time ever since s/he died					
	scoring:					

total score =

APPENDIX C: COLLEGE ADJUSTMENT QUESTIONNAIRE

The College Adjustment Questionnaire (CAQ)

Listed below are some statements that describe how college students might be feeling about their experience with college. **Please use the rating scale below to indicate how accurately each statement describes you at this point in time.** Please read each statement carefully, and then circle the number that corresponds to how accurately the statement describes you.

Response Options

- 1: Very Inaccurate
- 2: Moderately Inaccurate
- 3: Neither Inaccurate nor Accurate
- 4: Moderately Accurate
- 5: Very Accurate

	Very Inaccurate			Very Accurate	
1. I am succeeding academically.	1	2	3	4	5
2. I don't have as much of a social life as I would like.*	1	2	3	4	5
3. I feel that I am doing well emotionally since coming to college.	1	2	3	4	5
4. I am happy with my social life at college.	1	2	3	4	5
5. I am doing well in my classes.	1	2	3	4	5
6. I am happy with how things have been going in college.	1	2	3	4	5
7. I am happy with the grades I am earning in my classes.	1	2	3	4	5
8. I feel that I am emotionally falling apart in college.*	1	2	3	4	5
9. I have had a hard time making friends since coming to college. *	1	2	3	4	5
10. I am as socially engaged as I would like to be.	1	2	3	4	5
11. I have felt the need to seek emotional counseling since coming to college.*	1	2	3	4	5
12. I am meeting my academic goals.	1	2	3	4	5
13. I have performed poorly in my classes since starting college.*	1	2	3	4	5
14. I am satisfied with my social relationships.	1	2	3	4	5

For researchers, factors and items are listed below:

Academic Adjustment: 1, 5, 7, 12, 13

Social Adjustment: 2, 4, 9, 10, 14

Emotional Adjustment: 3, 6, 8, 11

* indicates the item is reverse-scored.

APPENDIX D: CONTINUING BONDS SCALE

CONTINUING BONDS SCALE For each item below, please rate the extent to which each of the items is true with respect to your deceased loved one.

1 – Not true at all

2

3

4

5 – Very true

1. I seek out things to remind me of my loved one. 1 2 3 4 5

2. I keep items that belonged to or were closely associated with my loved one as a reminder of him or her. 1 2 3 4 5

3. I like to reminisce with others about my loved one. 1 2 3 4 5

4. I have inner conversations with my loved one where I turn to him or her for comfort or advice. 1 2 3 4 5

5. Even though no longer physically present, my loved one continues to be a loving presence in my life. 1 2 3 4 5

6. I am aware of having taken on many of my loved one's habits, values, or interests. 1 2 3 4 5

7. I am aware of the positive influence of my loved one on who I am today. 1 2 3 4 5

8. I attempt to carry out my loved one's wishes. 1 2 3 4 5

9. I have many fond memories that bring joy to me. 1 2 3 4 5

10. When making decisions, I imagine my loved one's viewpoint and use this as a guide in deciding what to do 1 2 3 4 5

11. I experience my loved one as continuing to live on through me. 1 2 3 4 5

APPENDIX E: POST-TRAUMATIC GROWTH INVENTORY

Posttraumatic Growth Inventory

Before answering the following questions, focus on one traumatic or life altering event that has occurred in your life.

Please indicate the general experience you are thinking of:

- Loss of a loved one
- Chronic or acute illness
- Violent or abusive crime
- Accident or injury
- Disaster
- Job loss
- Financial hardship
- Career or location change/move
- Change in family responsibility
- Divorce
- Retirement
- Combat
- Other

Time lapsed since event occurred:

- 6 months - 1 year
- 1 - 2 years
- 2 - 5 years
- More than 5 years

Indicate for the statement below the degree to which the change reflected in the question is true in your life as a result of your crisis, using the following scale.

0 = I did not experience this change as a result of my crisis.

1 = I experienced this change to a very small degree as a result of my crisis.

2 = I experienced this change to a small degree as a result of my crisis.

3 = I experienced this change to a moderate degree as a result of my crisis.

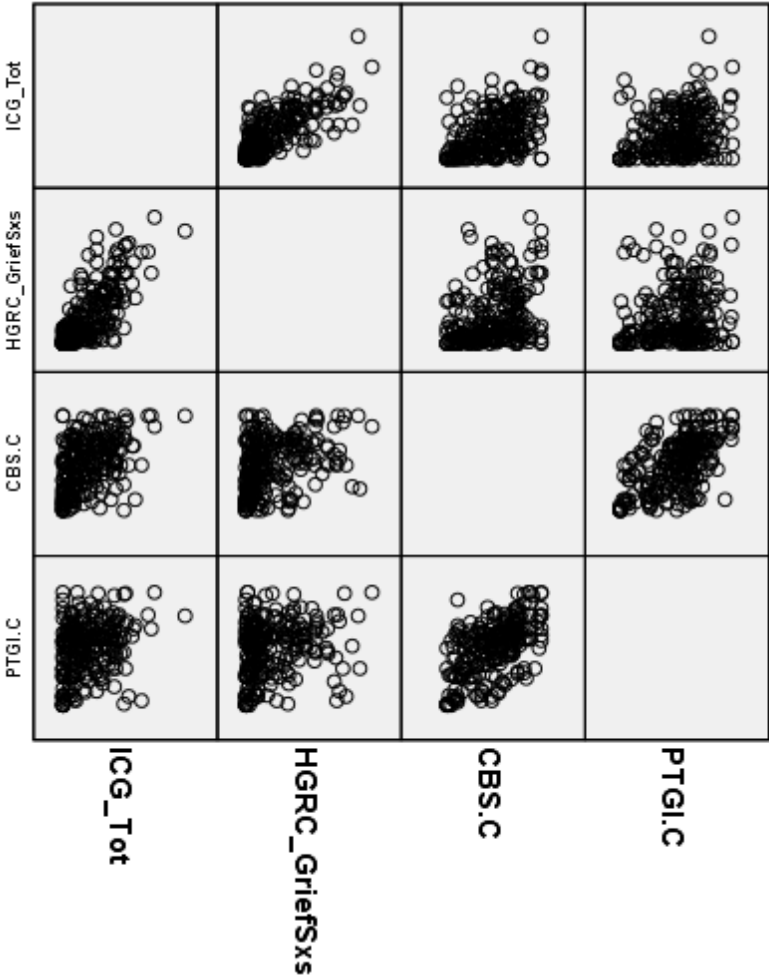
4 = I experienced this change to a great degree as a result of my crisis.

5 = I experienced this change to a very great degree as a result of my crisis.

1. I changed my priorities about what is important in life.
2. I have a greater appreciation for the value of my own life.
3. I developed new interests.
4. I have a greater feeling of self-reliance.
5. I have a better understanding of spiritual matters.
6. I more clearly see that I can count on people in times of trouble.
7. I established a new path for my life.
8. I have a greater sense of closeness with others.
9. I am more willing to express my emotions.
10. I know better that I can handle difficulties.
11. I am able to do better things with my life.
12. I am better able to accept the way things work out.
13. I can better appreciate each day.
14. New opportunities are available which wouldn't have been otherwise.
15. I have more compassion for others.
16. I put more effort into my relationships.
17. I am more likely to try to change things which need changing.
18. I have a stronger religious faith.
19. I discovered that I'm stronger than I thought I was.
20. I learned a great deal about how wonderful people are.
21. I better accept needing others.

APPENDIX F: SCATTERPLOT MATRICES FOR GRIEF SYMPTOMS AND
COMPLICATED GRIEF SYMPTOMS BEFORE AND AFTER NATURAL LOG
TRANSFORMATION

Raw Data Scatterplot



Natural Log Transformation Scatterplot

