



Virginia Commonwealth University
VCU Scholars Compass

Theses and Dissertations

Graduate School

2017

USING RESTORATION-ORIENTED COPING AND THE DUAL PROCESS MODEL WITH BEREAVED UNDERGRADUATES

Farah J. Aslanzadeh
Virginia Commonwealth University

Follow this and additional works at: <https://scholarscompass.vcu.edu/etd>



Part of the [Clinical Psychology Commons](#)

© The Author

Downloaded from

<https://scholarscompass.vcu.edu/etd/5155>

This Thesis is brought to you for free and open access by the Graduate School at VCU Scholars Compass. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of VCU Scholars Compass. For more information, please contact libcompass@vcu.edu.

USING RESTORATION-ORIENTED COPING AND THE DUAL PROCESS MODEL WITH
BEREAVED UNDERGRADUATES

A thesis submitted in partial fulfillment of the requirements for the degree of Master of
Science at Virginia Commonwealth University

By: FARAH J. ASLANZADEH
Bachelor of Science, Northeastern University, 2013

Director: Sandra Gramling, Ph.D.
Professor of Psychology
Department of Psychology

Virginia Commonwealth University
Richmond, Virginia
November, 2017

Acknowledgements

I would like to extend my gratitude to my advisor and committee chair, Dr. Sandra Gramling. Thank you for your guidance, feedback, and support. Your kind words and enthusiasm about this project have been much appreciated.

I would also like to thank my committee members, Dr. Sandra Gramling, Dr. Scott Vrana, and Dr. Sarah Kay Price. Thank you for giving your time, valuable feedback, and guidance during this process. I have very much appreciated integrating your perspectives and feedback into this project and having the opportunity to improve upon my work.

I would also like to thank all my colleagues in the program that provided insight, support, and encouragement throughout this process. Additionally, I would like to acknowledge the many individuals who have provided me with support and guidance outside of the program, especially my father, Jaber Aslanzadeh and sister, Aryana Aslanzadeh.

Spit for Science: The VCU Student Survey has been supported by Virginia Commonwealth University, P20 AA107828, R37AA011408, K02AA018755, and P50 AA022537 from the National Institute on Alcohol Abuse and Alcoholism, and UL1RR031990 from the National Center for Research Resources and National Institutes of Health Roadmap for Medical Research. Thanks to the many students, VCU faculty, and staff who have made this study a success and allowed access to this dataset for a diverse collection of collaborators.

Table of Contents

	Page
Acknowledgements.....	ii
List of Tables.....	iv
List of Figures.....	v
Abstract.....	vi
Bereavement.....	1
Emerging Adulthood.....	3
Bereaved Undergraduates.....	3
Traditional Bereavement Theory.....	4
Psychodynamic.....	4
Stage Models.....	5
Task Models.....	5
Problems with Psychodynamic, Stage, and Task Models.....	6
Stress and Coping.....	6
Trajectory.....	8
The Dual Process Model.....	9
Loss-Oriented Coping.....	10
Restoration-Oriented Coping.....	11
The Dual Process Model with College Students.....	12
Intrapersonal and Interpersonal Characteristics of the Individual.....	13
Aim of the Present Study.....	16
Aim 1.....	19

Aim 2.....	20
Aim 3.....	21
Methods.....	21
Design.....	21
Participants.....	23
Measures.....	24
Results.....	28
Discussion.....	41
References.....	52
Appendix.....	60
Vita.....	66

List of Tables

	Page
Table 1. Demographics By Year of Loss.....	29
Table 2. Descriptive Statistics of Variables in Main Analysis.....	30
Table 3. Predictors of Psychological Well-Being Post-Loss.....	33
Table 4. Predictors of Psychological Well-Being Post-Loss (T2) Zero-Order Correlations	34
Table 5. Descriptive Statistics of Variables in Exploratory Analysis.....	38
Table 6. Personality and Psychological Well-Being Post-Loss (T2).....	39
Table 7. Personality and Psychological Well-Being Post-Loss (T2) Zero-Order Correlations.....	40

List of Figures

	Page
Figure 1.	Spit 4 Science Pattern of Survey Collection.....23
Figure 2.	Survey Timing by Class Rank.24
Figure 3.	Interaction Effect of Restoration-Oriented Coping and Social Support Quality on Psychological Well-Being (T2).....35

Abstract

USING RESTORATION-ORIENTED COPING AND THE DUAL PROCESS MODEL WITH BEREAVED UNDERGRADUATES

By Farah J. Aslanzadeh, B.S.

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science
at Virginia Commonwealth University

Virginia Commonwealth University, 2017

Major Director: Sandra Gramling, Ph.D.
Department of Psychology

Approximately 60% of college seniors lost at least one family member or friend since beginning college (Cox, Dean, & Kowalski, 2015). Research reveals that bereaved students are more likely than their nonbereaved peers to struggle with academic problems and attrition (Cousins, Servaty-Seib & Lockman, 2017), highlighting the importance of identifying protective factors for this group of individuals. Researchers have identified restoration-oriented coping as a helpful coping mechanism in other samples (Caserta & Lund, 2007; Caserta, Lund, Utza, & de Vries, 2009). Despite qualitative evidence suggesting bereaved undergraduates often employ restoration-oriented coping, no research has formally assessed the effects of restoration-oriented coping in a bereaved undergraduate sample.

This study assessed the effects of restoration-oriented coping on students' (N=420; 68.8% female; 46.7% white) psychological well-being in a longitudinal design. Data were part of a larger study ("Spit 4 Science") assessing the development of substance use and emotional

health outcomes in college students. Students were assessed annually; those who reported a loss, had pre-, and post-loss data were included in analysis. Hierarchical multiple linear regressions were conducted and showed restoration-oriented coping was predictive of better psychological well-being and that this relationship was strengthened by social support quality. Extraversion was also predictive of better psychological well-being, while openness and neuroticism were related to poorer psychological well-being. Moreover, neuroticism mediated the relationship between distress at indication of loss and post-loss follow-up.

Further research of restoration-oriented coping efforts among bereaved undergraduates is warranted. Additional resources and support may help to keep students engaged following a loss.

Using Restoration-Oriented Coping And The Dual Process Model With Bereaved Undergraduates

Bereavement

The loss of a loved one is a particularly stressful life event that can cause disruption in multiple areas of an individual's life. Not only must individuals face their feelings of longing and grief, but loss may also cause individuals to reevaluate their worldview, question their own mortality (Christ, Siegel, & Christ, 2002), their spirituality (Wortmann & Park, 2008), and their identity (Johnson, 2014; Schultz, 2007). Losing a loved one can have a significant impact on an individual, with surveys citing it as among the most stressful life events a person can experience (Holmes & Rahe, 1967).

In addition to being a difficult process emotionally and psychologically, causing individuals to reexamine many areas of their life, the distress associated with the post-bereavement process has been linked to other physical and mental health conditions. Individuals who had recently been bereaved were more likely to have higher blood pressure levels (Prigerson, et al., 2001), to develop a new illness or report deteriorating health status within a preexisting condition (Thompson, Breckenridge, Gallagher, & Peterson, 1984), use more medical services (Parkes, 1983) and were more vulnerable to overall poorer physical health outcomes (Murphy et al., 1999) when compared to their nonbereaved peers. Additionally, among the elderly, the loss of a spouse has been linked to an increased risk of mortality (Parkes, Benjamin, & Fitzgerald, 1969; Bowling, 1994). These findings provide a strong link between the distressing nature of bereavement and the onset and intensification of physical ailments.

Coping with the loss of a loved one presents interesting challenges, which span across many domains of the individuals life. Not only are the bereaved tasked with dealing with their feelings of loss and longing, but they may also be forced to confront larger issues within their lives brought to the surface by loss. Loss may introduce new stressors and shift dynamics within existing relationships. These changes may result in secondary losses or have additive effects resulting in “incremental grief” (Cook & Oltjenbrun, 1998). For example, children of bereaved partners may lose one parent to death and also experience a secondary loss if the remaining parent is incapable of providing emotional support because of their own grief.

The link between loss and psychological distress has been well established, with a number of pre-loss factors making the bereaved more vulnerable to mental health issues (for a review see Stroebe, Schut, & Stroebe, 2007). Research has found increased rates of posttraumatic stress disorder diagnoses following violent or sudden losses (for a review see Kristensen, Weisæth, & Heir, 2012). Although, despite the existing links between loss and symptoms of mental illness, experiencing a loss does not typically lead to psychopathology. That being said, a small number of bereaved persons develop symptoms of persistent complicated grief, which is a disorder characterized by maladaptive thoughts, feelings, and behaviors in the response to a loved one’s passing more days than not in excess of a year (American Psychiatric Association, 2013).

Bereavement, grief, and mourning are all important terms for understanding the period following the loss of a loved one. Bereavement refers to the objective experience of losing someone significant, whereas grief is understood to be the often complex emotional experience that occurs in response to bereavement. The term mourning oftentimes is used interchangeably with grief, but is also a distinct concept that refers to the outward expression of grief. Mourning

rituals or practices may vary depending on social and cultural mores (Stroebe, Hansonn, Stroebe, & Schut, 2001).

Emerging Adulthood

Emerging adulthood is a distinct, yet culturally constructed, developmental stage that spans from the ages of 18-25 (Arnett, 2000). This developmental stage is more likely to be observed in industrialized societies and its presence is often attributed to the delay in timing of major life events in industrialized societies. Individuals are now opting to wait until their late twenties for career decisions, marriage, and childrearing, which previously occurred in late teens and early twenties. The result of “twenty-somethings” putting off these milestones, is a period of enhanced exploration and change known as emerging adulthood. Emerging adulthood has become an extended in-between period to bridge the dependency of adolescence and the independence and responsibility of adulthood. This period of uncertainty is associated with a developmental stage rich in personal discovery and enhanced understanding of self. Arnett (2001) proposed five dimensions that characterize the period of emerging adulthood; the age of identity explorations, the age of feeling in-between, the age of possibilities, the self-focused age, and the age of instability.

Bereaved Undergraduates

Research estimates that 22-30% of college students have experienced the loss of a loved one within the last 12 months (Balk, 2008; Balk, Walker & Baker, 2010). Despite the high prevalence of loss, the number of grieving undergraduates has been greatly underestimated by administrators and campus staff (Balk, 2008). This oversight is particularly significant because of the many areas of functioning impacted by bereavement, including the social, academic, physical, spiritual, and emotional well-being of the bereaved student (Balk, 2011).

In addition to the far-reaching impact of loss, for college students the grieving process occurs in tandem with the many demands of adjusting to the college environment. Students must transition into roles of independence and work towards mastery of their social, emotional, and academic lives (Baker & Siryk, 1984). Bereaved students are more likely to endorse poorer levels of college adjustment when compared to their nonbereaved peers and report higher rates of attrition and academic difficulties (Cousins, Servaty-Seib & Lockman, 2017). Bereaved students are particularly vulnerable to poor academic performance immediately following their loss, with bereaved students reporting receiving lower GPA's the semester of their loss when compared to their nonbereaved peers (Servaty-Seib & Hamilton, 2006a). Despite, bereaved students remaining susceptible to poor outcomes, little research exists examining the unique ways in which their grief manifests and remits (Balk, 2011).

Traditional Bereavement Theory

Psychodynamic. Sigmund Freud first brought grief into the discipline of psychology with the publication of his work, "Mourning and Melancholia" in 1917 (Archer, 2008). Freud proposed that the essential task of the bereaved is to sever emotional ties to the deceased through a process called "decathexis." Without undergoing this process, the emotional energy tied up in the individual's relationship with the deceased could not be reinvested in new meaningful relationships. Freud's perception of the grieving process was informed by his own loss experience. He described an internal conflict in which the bereaved must face the finality of their loved one's passing by examining their thoughts, emotions, and memories about the deceased. This concept would later become the foundation for what psychologists would call "grief work." Freud suspected that until the bereaved person resolved their "grief work", he or she could not return to normative functioning. Later, psychoanalytic theorists would expand on this concept

and posit that the absence of an expression of internal conflict was an indication of pathology (Deutsch, 1937).

Stage-models. Among the most often taught and well-known theories of grief and loss are stage model approaches to understanding bereavement. The most recognizable stage model of grief is the work of Dr. Kübler-Ross (1969), which was inspired by her work with terminally ill patients. This model was constructed from those patients' experiences with confronting their own mortality and preparing for their own death. The stages of her model include denial, anger, bargaining, depression, and acceptance, with the assumption that an individual would pass through the stages from start to finish. However, despite its popularity and continued use, little empirical research exists in support of a linear stage model of bereavement, in fact researchers have found evidence to suggest this model is an inappropriate fit for most bereaved persons (Maciejewski, Zhang, Block, & Prigerson, 2007).

Task models. Much later Worden (1982, 1991) would introduce the task model of bereavement, which hypothesized individuals must complete a series of tasks to conclude their grief work. Drawing from anecdotal evidence and his clinical work, he believed that individuals must accept the reality of the loss, experience the pain of grief, adjust to an environment that does not contain the deceased, and to emotionally relocate the deceased and move on with life. Additionally he believed that the grieving process was complete when the bereaved could remember the deceased without experiencing the pain of the loss, while also being able to put that emotional energy into relationships with the living and living their life. Although Worden's (1991) task model allows for more differences in the grieving processes of the bereaved, like Freud, he considers there to be a clearly defined end to the grief journey. Thinking of grief as a life-long or continued process is not part of his model, however conceptualizing bereavement as

a sequence of necessary steps provided framework for clinicians working with bereaved persons. Despite lacking a longitudinal, multidirectional component, the impact of task and stage models of bereavement is undeniable and has provided a helpful general framework for clients to understand their experiences and see their bereavement as a dynamic versus passive process.

Problems with psychodynamic, stage, and task models. Recent longitudinal research has shown that most bereaved persons do not follow a predictable stage trajectory when grieving (Holland, & Neimeyer, 2010). Most researchers by now have acknowledged that attempting to understand the grieving process as an inflexible stepwise process has little utility (Wortman, & Boerner, 2007). In fact, Wortman and Silver (1989) and Wortman and Boerner (2007) have called into question the assumptions that drive psychodynamic and task/stage theories. They have challenged the notion that intense distress exists in all cases of normative grieving, the need to confront the loss with “grief work,” and that grieving resolves within a given amount of time and results in a return to pre-loss functioning. Instead of being characterized by significant distress, research suggests most bereaved individuals are resilient when faced with loss (Bonanno, 2004). Without the previously deterministic characterization of psychodynamic and stage models, researchers must now turn to more complex explanations based in empirically-based study.

Stress and coping. The transactional model of stress and coping was developed by Lazarus and Folkman (1984) and posits that both cognition and behavior can impact how an individual responds to stressful life events. Their model suggests that following a loss the individual goes through a process of appraisal, during which they weigh the significance of the event and their available resources by which to cope. If the individual identifies that needed coping resources are available to them, and they are able to engage in an adaptive coping

strategy, the level of stress associated with the event will be reduced. Different coping strategies have been identified in the literature, with common tactics including approach and avoidance coping, as well as problem-focused and emotion-focused coping. Although in the coping literature, this is regarded as a fairly simplistic representation of the many coping processes (Coyne & Racioppo, 2000).

Despite the obvious applicability of the stress and coping model when discussing loss, few empirical studies have examined the relationship between specific coping strategies or styles and adaptive grief processes (Folkman, 2001). Despite issues with the availability of a valid, reliable measure of the coping efforts of the bereaved, a small number of studies have attempted to better understand the coping efforts around this stressful life event. Studies have used measures such as the Brief COPE, a commonly used coping checklist, which assesses the use of three types of coping strategies: problem focused coping (e.g., planning how to overcome a problem), emotion-focused coping (e.g., reinterpreting the stressor in a positive way), and avoidant coping (e.g., using denial or self-distraction) (Carver, 1997).

In a study conducted by Schnider, Elhai, and Gray (2007), that examined the coping strategies employed by bereaved college students who had experienced a traumatic loss of a immediate family member, romantic partner, or a very close friend, results showed that the development of PTSD symptoms was associated with use of avoidant coping strategies. These findings suggested that, in particular avoidant coping strategies such as denial, were most likely to lead to symptoms of PTSD, as well as symptoms of complicated grief. Conversely, when assessing the effects of active coping strategies, such as taking action to change or reduce the stressors, a study by Rogers, Hansen, Levy, Tate, and Sikkema (2005) found that this approach was positively associated with optimism and negatively associated with hopelessness, in a

sample of individuals with HIV who had recently been bereaved by HIV/AIDS. Like in Schnider, Ellahi, and Gray's (2007) study, avoidant coping strategies in the HIV sample resulted in similar negative outcomes with decreased optimism and increased hopelessness (Rogers et al., 2005). The push and pull between avoidant and active coping methods tends to positively favor active coping methods, while avoidant methods continue to predict poorer psychological adjustment.

Trajectory. Most of the bereavement literature has now reached the consensus that bereavement is not linear or stage like, but instead is a continuous process with a non-linear trajectory (Bonanno, 2002). When modeling grief trajectories, there exists a public assumption that most normative grief experiences include a period of intensity following the loss and a continued decline in severity of symptoms over time (Penman, Breen, Hewitt & Prigerson, 2014). However, longitudinal research has identified that in response to loss the story is much more complicated and that in actuality there are five distinct trajectories: (a) common grief or recovery, (b) stable low distress or resilience, (c) depression followed by improvement, (d) chronic grief, and (e) chronic depression (Bonanno, 2002). This research was conducted with a sample of 205 spousal bereaved individuals with data collected pre-loss, as well as post-loss at 6 and 18 months. Depression scores for each group followed varied linear patterns. Common grief or recovery was characterized by low depression scores pre-loss, a peak in symptoms at 6 months and a decline to pre-loss levels by month 18. Stable low distress or the resilience group followed a linear pattern with steady low depression scores across the pre-loss to 18-month period. The depression followed by improvement group started at high levels of depression pre-loss and dramatically reduced by 6 months post-loss and leveled off to 18 months post-loss. The chronic grief group had low pre-loss rates of depression but had a sharp increase by 6 months, which stayed level through 18 months post-loss. Finally, the chronic depression group had continuously high rates

of depression from pre-loss to 18 months post-loss. Despite the movement of the field towards trajectory research, most available research has ignored the continued grief experience of college students, favoring cross sectional research with limited repeated measurement (Herberman, Mash, Fullerton, Shear & Ursano, 2014). This poverty of longitudinal research has left the continued grieving experience of bereaved undergraduates murky and unclear.

The Dual Process Model

When attempting to conceptualize the bereavement process, researchers have most frequently investigated the grieving patterns of widows and widowers. This group is faced with the challenge of coping with loss while often also being forced to take on new challenges and responsibilities of their previously shared household, including tasks that their partner may have taken care of before passing away (Stroebe, Folkman, Hansson, Schut, 2006). The conflicting demands of a widow/er's environment and their own emotional needs results in a back and forth between multiple coping processes. The internalized and environmental nature of the grieving process and the shifting between the two is best explained in Stroebe and Schut's (1999) Dual Process Model (DPM). The Dual Process Model posits that there are two types of coping following a loss, loss-oriented coping and restoration-oriented coping. The individual is faced with the challenge of oscillating between the two types of stressors following the loss.

Loss-oriented coping is directly related to processing and dealing with the loss itself and can be best understood as attending to the traditional feelings of grief, loss, yearning, and thinking of the loved one. Examples of loss-oriented coping include visiting a loved one's headstone, talking with others about a loved one's passing, as well as returning to memories focused on the lost loved one (Richardson, 2006).

Restoration-oriented coping, however, addresses secondary stressors associated with coping with a loss. Typically these are secondary stressors that occur as a consequence of the bereavement and can vary significantly depending on characteristics of the relationship.

Restoration-oriented coping could include mastering new household tasks or taking on new financial obligations. Additionally, Stoebe and Schut (1999) explain that

“it is important to note that ‘restoration’ does not refer to an outcome variable, but to the secondary sources of, and coping with, stress. In other words this analysis is focusing on what needs to be dealt with (e.g., social loneliness), and how to it is dealt with (e.g., by avoiding solitariness), and not with the results of this process (e.g., restored well-being and social reintegration).” (p. 214)

Restoration-oriented coping is both the behavioral response to secondary stressors of loss, as well as the active process of coping with that stressor. Despite its name, the goal of restoration-oriented coping is not to restore the environment to the reality that preceded the loss, but to respond to the secondary stressors of loss. When operationalizing this construct, researchers have used an index of positive restoration activities to indicate higher levels of this coping strategy. In Richardson’s (2006) study using data from the Changing Lives of Older Couples, researchers asked questions ranging from how often widow/ers participated in social activities such as visiting friends, contacting their children, or confiding their feelings in others. Activities also included more active tasks such as going on walks or drives, participating in volunteer work, hobbies, sports, attending religious services, meetings, as well as dating, changing jobs and moving. Research on the consequences of loss-oriented coping and restoration-oriented coping are explored further below.

Loss Oriented Coping. The Inventory of Daily Widowed Life is an instrument that measures levels of restoration- and loss-oriented coping, as well as the individual's oscillation between the two. Loss oriented coping "consist of elements of grief work, intrusion of grief into the daily life of the bereaved person, the relocation of bonds or ties with the bereaved, and denial or avoidance of those changes" (Caserta & Lund, 2007, p. 508). Examples of these items are "Thinking about how much I miss my spouse," "Being preoccupied with my situation," "Feeling a bond with my spouse," and "Imagining how my spouse would react to my behavior." During the development of this measure, Caserta and Lund (2007) found that an over reliance on loss-oriented coping, and lower levels of restoration-oriented coping, was associated with more grief, depression, and loneliness and lower bereavement coping self-efficacy. In another study with bereaved older adults, researchers found that across three time points (6 months, 18 months, and 48 months) bereaved persons who ruminated more about the events of their spouse's passing showed lower levels of well-being than those who reported rarely thinking about it (Richardson, 2006). Despite research that suggests most bereaved persons participate in loss- and restoration-oriented coping, studies like the two above reveal a negative association between well-being and higher rates of loss-oriented coping.

Restoration Oriented Coping. Restoration-oriented stressors following a loss such as problems at work, financial issues, or interpersonal difficulties have been linked to increased depression and grief intensity scores (Harper, O'Connor & O'Carroll, 2015). Conversely, research has shown that engaging in restoration-oriented coping on a more frequent basis is related to post-traumatic growth, while this same relationship has not been found with individuals' levels of loss-oriented coping (Caserta, Lund, Utza, & de Vries, 2009). Restoration-oriented coping assists the bereaved in efforts to address restoration-stressors, while avoidance of

the continuation and inevitable changes of loss cause significant distress as measured by poor adjustment (Bennett, Gibbons, Mackenzie-Smith, 2010). When examining the consequences of heavy reliance on loss or restoration-oriented coping following the loss of a romantic partner, researchers found that utilizing more restoration-oriented coping methods was associated with lower scores on grief intensity measures (Delespaulx, Ryckebosch-Dayez, Heeren, & Zech, 2013). These findings were in agreement with previous work by Caserta & Lund (2007), which found higher usage of restoration-oriented coping to be related to higher levels of self-care and daily living skills, as well as more reports of personal growth. It was also found that lower restoration-oriented coping was associated with greater levels of grief, depression, and loneliness.

Dual Process Model with college students. The loss experience of college students is influenced by both personal characteristics as well as the college environment. The bereavement literature has addressed how individual and environmental factors play a significant role in the challenges that bereaved individuals face. The Dual Process Model (DPM) incorporates these internal and environmental processes and posits that bereaved individuals must alternate between coping with two types of stressors, loss-oriented stressors and restoration-oriented stressors. These dual stressors have been well identified and explored in the bereaved spousal literature, with bereaved partners often left to take on new financial, social, and domestic roles in addition to coping with the loss of their spouse (Stroebe, Folkman, Hansson, Schut, 2006). However, little research has examined the shifting roles and responsibilities of bereaved college students and how those environmental and individual factors interact and impact the manifestation and remittance of grief. Frameworks such as the DPM emphasizes that grief is both *intrapersonal*, occurring within the individual and also *interpersonal*, occurring within their environment and interactions with other people. This interaction is well established in other theories of

bereavement such as in ego psychology and Lazarus and Folkman's contextual coping processes model (Meuser & Marwit, 2000). Examining the relationship between intrapersonal and interpersonal predictors and the areas that are impacted by grief can give important information for intervention and the mechanisms by which grief can become complicated or ruminative.

Although predominately addressed in the bereaved spousal literature, Servaty-Seib and Taub (2010) suggest that the DPM may be equally appropriate when examining the grieving patterns of bereaved undergraduates. Their literature review indicated that there had not currently been any research using the DPM to better understand bereaved college students, however literature has given strong support for utilization of such a model as conceptual framework in future research. When Balk completed his qualitative research interviewing bereaved students about their experience grieving while at college, he found respondents employed a number of both restoration and loss-oriented coping strategies such as, "remembering good things about the deceased, engaging in religious practices, crying, keeping busy, and talking about the death, and thinking the person is better off because he/she is dead." (Balk, 1997, p. 215) Despite the limited research employing this conceptual framework with college students, Balk's interviewees report using both types of coping strategies solidifying the appropriateness of DPM in this population.

Intrapersonal and Interpersonal Characteristics of the Individual

In addition to the coping processes employed by bereaved persons, intrapersonal and interpersonal characteristics greatly influence the grief process. The interaction between the intrapersonal and interpersonal has been well established in models such as Bronfenbrenner's ecological model of human development (Bronfenbrenner, 1979). The interface between proximal and distal factors has been shown to have unique protective and risk properties. Intrapersonal characteristics act on an individual level and shape the way in which that individual

experiences their environment. Intrapersonal characteristics, such as personality, can influence an individual's cognitive, emotional, and social processes. Limited research exists regarding the influence of personality on the grieving processes or coping efforts of college students, however, when examining the relationship between personality and distress associated with loss in other populations, research has shown these intrapersonal factors carry significant weight. Specifically, the relationship between neuroticism and negative grief symptoms is well established in the literature. Robinson & Marwit (2006) found in a sample of bereaved mothers a strong, direct relationship between neuroticism and grief intensity. In addition to heightened grief intensity, in another study, neuroticism was also found to be significantly related to symptoms of PGD (Boelen & Klugkist, 2011). Additionally, researchers have found a relationship between neuroticism and grief symptomology in a sample of bereaved spouses, adult children, and parents (Middleton, Raphael, Burnett, & Martinek, 1997).

Intrapersonal characteristics, like personality, not only directly relate to grief responses but also may be associated with other factors which further perpetuate maladaptive interpersonal behaviors and negative coping strategies. Researchers have found that traits such as neuroticism may be mediated by rumination in the bereaved, (van der Houwen, Stroebe, Schut, Stroebe & van den Bout, 2010) while more positively viewed personality traits such as extraversion may be related to increased social support seeking (Boyratz, Horn, & Saygert, 2012). The interaction between the intrapersonal and the coping efforts of the bereaved is noteworthy, but unfortunately little research has addressed this issue in a college sample. One study with a sample of 157 bereaved young adults (ages 17-29) attempted to incorporate both intrapersonal and interpersonal factors by examining the relationship between dependency, an intrapersonal characteristic, and interpersonal characteristics, such as depth of relationship with the deceased and conflict

associated with that relationship (Herberman Mash, Fullerton, Shear & Ursano, 2014). Findings suggested that the relationship between these variables did not have strong interaction effects in young adults meeting criteria for complicated grief or for depressive responses to loss.

Interestingly, results showed symptoms of complicated grief in young adults were more likely to be related to characteristics of the relationship (i.e. depths of the relationship, associated conflict), whereas intrapersonal characteristics such as dependency were more likely to be seen in individuals with a depressive response to the loss. This study is one of the few to attempt to address the interplay between intra- and interpersonal characteristics in the coping efforts of a bereaved young adult sample. The authors suggest further research include an increased sample size within a longitudinal design.

Interpersonal characteristics of loss such as social support and additional environmental stressors have been shown to be related to grief symptoms (Stroebe & Schut, 1999; Stroebe, Zech, Stroebe & Abakoumkin, 2005). Stroebe, Zech, Stroebe, & Abakoumkin (2005) investigated this “widely held assumption that social support buffers the bereaved against the impact of the loss experience and/or facilitates recovery (p. 1030).” When assessing the role of social support as a buffering/recovery factor, their research with 1,532 bereaved widows found that although stronger social support at the time of loss was predictive of lower depressive symptoms at time of loss, no enduring buffering or recovery effect of social support was identified over the course of 48 months. Interestingly, social support remains one of the recommendations for bereaved emerging adults, with organizations such as Actively Moving Forward (AMF) espousing the benefits of social support groups on campus to aid students with their loss experience (Fajgenbaum, Chesson & Gaines Lanzi, 2012). This recommendation is perpetuated by the work of other bereavement researchers, with investigators examining the

strengths of, and the best practices for, implementing peer support groups on campus (Balk, Tyson-Rawson, & Colletti-Wetzel, 1993; Battle, Greer, Ortiz-Hernández, & Todd, 2013).

However, limited published research has examined the relationship between social support and grief intensity in bereaved college students. Despite a lack in published studies, an unpublished dissertation by Smith-McNally (2014) indicated that perceived social support was not correlated with grief levels and was not predictive of grief intensity scores in bereaved college students.

This significant discrepancy between literature and practice is a particularly rich area and calls for additional research with a bereaved undergraduate population over time.

Aim of the Present Study

Despite the large number of bereaved college students on campus at any given time, little attention has been paid to how this common experience may impact psychological well-being across the college years. Not only are 22-30% of college students within the first 12 months of loss (Balk, 2008), but one study found that by the end of college approximately 60% of interviewed seniors had lost at least one family member or friend since the beginning of college, with 22.8% reporting multiple losses (Cox, Dean, & Kowalski, 2015). Bereaved college students report experiencing impairment in social, academic, physical, spiritual, and emotional areas of their lives while grieving (Balk, 2011). Additionally, research has shown bereaved students are at risk for poor academic achievement and higher rates of attrition when compared to their nonbereaved peers (Servaty-Seib & Hamilton, 2006a, 2006b). It is clear from the existing literature that although the grief process of bereaved undergraduates shares similarities with the larger grief experience, the unique challenges of grieving while adjusting to the collegiate environment differentially impact bereaved students, especially when compared to their nonbereaved peers (Cousins, Servaty-Seib & Lockman, 2017). The college environment is one

which demands continued, competing efforts. Most students struggle to juggle part-time jobs and face constant pressure to produce and stay on top of their academic work (Arnett, 2000). All this occurs while students are also expected to engage in a culture of fun, self-exploration, and enjoying a lesser degree of adult responsibilities (Balk, 1998). However, research has shown that the effects of bereavement are often exacerbated by students' distance from their established social support networks when grieving, making them a uniquely vulnerable population (Mattanah, 2010). One can understand how integrating loss into the college experience, while isolated from established social support systems, could prove difficult for grieving students.

The ability of college students to cope with their grief and the competing demands of their environment is paramount in the time following a loss. When Balk interviewed bereaved students about their experience grieving while at college, they described negotiating these competing demands by fluctuating between, "remembering good things about the deceased, engaging in religious practices, crying, keeping busy, and talking about the death, and thinking the person is better off because he/she is dead." (Balk, 1997, p. 215) Qualitative evidence from these interviews suggests that students constantly engage in an oscillation between addressing their feelings related to the loss and attending to other important areas of their life (i.e., school, jobs, and social relationships). No research to date has focused on this oscillation, or specifically examined the outcomes of the coping efforts of bereaved students across their college experience. Evidence from studies conducted with older adults would suggest that a person's ability to successfully manage their secondary stressors would predict better psychological well-being, posttraumatic growth, and reduced rates of depression and anxiety (Caserta & Lund, 2007; Delespaulx, Ryckebosch-Dayez, Heeren, & Zech, 2013).

Despite evidence, which suggests the resilient nature of bereaved persons, researchers have found specific grief trajectories in which some bereaved people are unable to resolve feelings of grief and loss (Bonanno, 2002). There is such limited research addressing the long-term impact of loss on college students that not much is known about their continued grief experience. However, research suggests that in addition to the success of employing positive coping strategies there are a number of predictors of poor grief outcomes. Neuroticism, which is commonly linked to poor psychological health, has been linked to greater grief intensity and symptoms of PGD (Robinson & Marwit 2006; Boelen & Klugkist, 2011). It is possible that this relationship is mediated by rumination surrounding the loss, which further exacerbates symptoms of grief (van der Houwen et al., 2010). Conversely, personality traits such as extraversion may be related to increased social support seeking behaviors, which may serve as a buffer (Boyratz, Horn, & Saygert, 2012). No research exists examining the relationship between intrapersonal characteristics, such as personality, and grief intensity in bereaved college students over time. Additionally, little information exists surrounding the influence of social support on grief intensity, despite student organizations that operate under the assumption that social support can be one of the most helpful interventions for bereaved students (Fajgenbaum, Chesson & Gaines Lanzi, 2012).

When conceptualizing the elements that may differentiate the ongoing grief experience of emerging adults, it remains essential to think of that experience within both the intra- and interpersonal domains of ongoing development, as well as the broader college environment. Suggestions by researchers have indicated that approaching this topic from a Dual Process theoretical framework may be an appropriate representation of the ongoing oscillation between tasks of continued academic success and feelings of grief. Keeping in mind the intra- and

interpersonal factors, such as personality and social support, that may influence the trajectory of bereavement, investigating the restoration coping efforts of bereaved students over time emerges as the most useful investigation to guide the present study. By using DPM with this population, researchers can better represent the multidimensional nature of grief, and identify ways in which college students' ongoing intrapersonal and interpersonal development impact their coping over time. The following study proposes a methodological design that looks at the restoration-oriented coping efforts of bereaved college students across college. This goal will be accomplished by examining the effects of restoration-oriented coping strategies on students' psychological well-being, as measured by indicators of mental health and wellness. Researchers will incorporate the environment of ongoing intra- and inter-personal development by assessing the influence of characteristics such as personality and social support on this relationship.

No research to date has examined the effects of the restoration-oriented coping efforts of bereaved undergraduates on their psychological well-being. Although qualitative evidence suggesting students regularly engage in restoration-oriented coping, this feature of the Dual Process Model has not been investigated in this population. The following study hopes to incorporate what is known about the intrapersonal and interpersonal factors which influence the bereavement process and examine how these influence the restoration-oriented coping efforts of undergraduates. In order to appropriately capture this dynamic, multi-dimensional process the following hypothesis will be tested.

Aim 1. The primary aim of this study is to integrate what is known about restoration-oriented stressors and restoration-oriented coping into a bereaved undergraduate sample in a longitudinal design. It has been demonstrated that an increased level of restoration-oriented stressors has been linked to poorer psychological well-being as indicated by higher rates of

anxiety and depression (Harper, O'Connor & O'Carroll, 2015), but that increased restoration-oriented coping is associated with better outcomes (Caserta & Lund, 2007). However, researchers have yet to examine this approach to coping with loss in a bereaved undergraduate sample. Additionally, person level variables, which impact the coping process, have yet to be examined to assess for within group differences. Thus, it was hypothesized that when controlling for pre-loss levels of psychological well-being at T0, as well as restoration stressors at the indication of loss (T1), participation in restoration oriented coping (as measured by participation in social activities) would predict increased psychological well-being at 12 months post indication of loss (T2). We will also test the relationship between restoration-oriented coping and restoration-oriented stressors to assess whether the load of an individual's restoration-oriented stressors weakens their ability to engage in positive effects of restoration-oriented coping, or if restoration-oriented coping can act as a buffer against additional restoration-oriented stressors. We also anticipate those individuals with better ratings of high quality social support will show increased psychological well-being at 12 months post indication of loss (T2). Finally, we hypothesize that an interaction effect will be present, such that individuals who engaged in higher rates of restoration oriented coping, and rated their social support to be of higher quality, would display better psychological well-being when compared to those with lower rates of social support quality and the same level of restoration-oriented coping engagement.

Aim 2. In addition to testing the restoration-oriented coping efforts of bereaved college students, this study hopes to incorporate the impact of factors known to affect the bereavement process. Intrapersonal characteristics, such as personality, have yet to be tested in the bereaved undergraduate sample. The mediating relationship of neuroticism has been well established in the bereavement literature (Robinson & Marwit 2006; Boelen & Klugkist, 2011). To test the

impact of neuroticism on psychological well-being in a bereaved undergraduate sample, a mediation analysis will be conducted. It is hypothesized that the relationship between symptoms of anxiety and depression across the year following bereavement will be at least partially mediated by neurotic personality traits.

Aim 3. Although research with bereaved samples has only indicated relationships between Extraversion and Neuroticism and grief intensity, exploratory testing will be conducted with all personality subscales in order to identify any relationships between personality and psychological well-being following a loss. In order to test the presence of these relationships, scores on personality subscales will be tested with a hierarchical multiple linear regression with depression and anxiety ratings, while controlling for time of loss distress.

Methods

Design

These data were collected at a large mid-Atlantic public university as part of a large-scale longitudinal study called “Spit for Science” (Dick et al., 2014). This data collection effort was conceptualized in order to examine the development of substance use and emotional health outcomes in college students. Incoming freshmen were contacted before the start of their first semester via mail with information and invited to take part in the study. Students who indicated interest were able to access an online survey through a link sent to their email. All students were first brought through a consent process, which fully explained the nature of the study and of their participation. The initial survey was comprised of questions about their personality, behaviors, as well as questions about their life before college, including topics such as their friends and family, and their experience growing up. This time point is referenced as T0 in Figure 1. Initial estimates suggested this first survey would take 15-30 minutes to complete, but was reported to take closer

to an hour. With this feedback, the survey was shortened for the next cohort of participants. Students were paid \$10 for their participation and were also given a free “Spit for Science” t-shirt.

A new cohort was recruited in the following spring semester, and was first contacted via mail with \$2 as an incentive to participate. Similarly to the first cohort, they were then able to access the surveys through a link in their university email. Students who were eligible but for whatever reason did not participate the previous fall were also given the opportunity to become part of the project. They completed an abbreviated version of the fall survey and were asked to report retrospectively on a number of items. Items that students responded to that were trait related or were retrospective reports were allocated to T0 data. During the spring semester, a follow up survey was sent to students who had participated in the fall. Students who were recruited in the spring semester also filled out this follow up survey, which is referred to as T1 in Figure 1. Follow up data continues to be collected annually each spring, with new cohorts signing on each fall and spring. Each follow up year is notated Figure 1 as T2, T3, and T4. Students are given the opportunity to participate each year until they graduate or leave school, with post-graduation surveys continuing to be sent out.

“Study data were collected and managed using REDCap electronic data capture tools hosted at Virginia Commonwealth University (Harris et al., 2009). REDCap (Research Electronic Data Capture) is a secure, web-based application designed to support data capture for research studies, providing: (1) an intuitive interface for validated data entry; (2) audit trails for tracking data manipulation and export procedures; (3) automated export procedures for seamless data downloads to common statistical packages; and (4) procedures for importing data from external sources.” (Dick et al., 2014, p. 2)

Figure 1.
Spit 4 Science Pattern of Survey Collection.

Semester	Groups of Surveys Collected by Semester			
Fall 2011	Cohort 1, T0			
Spring 2012	Cohort 1, T1	Cohort 1, T0 & T1		
Fall 2012		Cohort 2, T0		
Spring 2013	Cohort 1, T2	Cohort 2, T1	Cohort 2, T0 & T1	
Fall 2013			Cohort 3, T0	
Spring 2014	Cohort 1, T3	Cohort 2, T2	Cohort 3, T1	Cohort 3, T0 & T1
Fall 2014				
Spring 2015	Cohort 1, T4	Cohort 2, T3	Cohort 3, T2	
Fall 2015				
Spring 2016		Cohort 2, T4	Cohort 3, T3	

Participants

Participants were undergraduate students at Virginia Commonwealth University, a large mid-Atlantic public university in Richmond, Virginia. The following analysis used respondents who indicated they had experienced a loss since coming to VCU and also had pre- and post- loss data available. Freshman in their spring semester were included if they responded to questionnaires in the fall and indicated for the first time experiencing a loss since coming to VCU. Sophomores or Juniors were included if they had pre-loss data from the previous year, had not experienced a loss since being in the study (or in the 12 months preceding enrollment) year, indicated they had experienced a loss in the last 12 months, and responded to post-loss questionnaires the following year (i.e. spring Junior/Senior year respectively). Figure 2 shows

the sequence of survey responses by class rank. Table 1 in the results section details the demographic distribution and average age of this sample.

Figure 2.
Survey Timing by Class Rank.

	Semester of each time point		
	<u>Pre-loss</u> (T0)	<u>Indication of loss</u> (T1)	<u>Post-loss</u> (T2)
<u>Class Rank</u>			
Freshmen (FR)	FR Year Fall →	FR Year Spring →	SO Year Spring
Sophomores (SO)	FR Year Spring →	SO Year Spring →	JR Year Spring
Juniors (JR)	SO Year Spring →	JR Year Spring →	SR Year Spring

Measures

Mediating and moderating measures.

Demographics. At the first survey students were asked to report on their age, sex (male or female), and racial/ethnic identity (American Indian/Alaska Native, Asian, Black/African American, Hispanic/Latino, More than one race, Native Hawaiian/Other Pacific Islander, Unknown, or White). In order to identify bereaved students, students were included in analysis if they indicated experiencing a loss on an adapted version of the Life Events Checklist (Gray et al., 2004). Students recruited in the fall of their first year were asked if they had or had not experienced a loss in the last 12 months as part of the larger scale, while students recruited in the spring of their first year were asked if they had experienced a loss since starting at VCU. Students who indicated a loss at other time points (i.e., sophomore or junior year in the spring) were asked if they had lost anyone in the last 12 months as well.

Intrapersonal factors. *Personality* was measured using an abbreviated version of the Big Five Inventory (BFI; John & Srivastava, 1999), a self report measure which produces five

subscales with scores ranging from 3-15. The original version produces five subscales each measuring a different dimension of personality, Extraversion ($\alpha = 0.84$), Agreeableness ($\alpha = 0.76$), Conscientiousness ($\alpha = 0.79$), Neuroticism ($\alpha = 0.81$), and Openness ($\alpha = 0.74$), with 3-month test-retest reliabilities ranging from .80 to .90. John & Srivastava also calculated validity coefficients with other widely used personality inventories, the NEO-FFI (Costa & McCrae, 1992) and the TDA (Goldberg, 1992). Coefficients averaged .91 for Extraversion, Agreeableness, and Conscientiousness, .88 for Neuroticism, and .83 for Openness (John & Srivastava, 1999). If individuals did not complete these measures their cases were excluded from analyses requiring these variables ($n = 1$).

Interpersonal factors. *Social Support* was measured with questions adapted from the Social Support Survey of the RAND Medical Outcomes Study (Hays et al., 1995). The score was comprised of three subscales, each assessed with a single item. These areas included Positive Social Interaction (i.e., availability of someone to spend time together and relax), Affectionate Support (i.e., availability of someone that makes the individual feel loved and wanted), and an additional item regarding the presence of someone to trust or talk with about the individual's problems. Participants were asked how often someone in their life was able to serve in these supportive roles in the past 12 months. Participants were able to choose the following options to describe their social support availability "none of the time" (0), "some of the time" (1), "most of the time" (2), "all of the time" (3), or "I don't know" (missing data). A sum score was calculated from complete responses, as decided by the original Spit for Science investigators, with higher scores indicating higher levels of support and with scores ranging from 0-9. Only individuals who answered all three questions were included in final analysis. If individuals did not respond to questions related to social support at the time they indicated a loss of a loved one- but had

social support ratings for pre-loss and post-loss, an average score was calculated and used ($n = 9$). A small number of respondents did not complete any questionnaire at indication of loss and did not have pre- and post- loss support quality ratings and were excluded from analyses ($n = 3$). This rationale was reflective of findings in the literature that perceptions of social support were constant across college and perhaps were more related to trait-like or personality variables (Sarason, Sarason, & Shearin, 1986).

Measures of restoration.

Restoration oriented stressors. As a proxy for restoration oriented stressors, data was collected on students' financial, academic, and housing stability from questions on the adapted version of the Life Events Checklist (Gray et al., 2004). Financial, academic, and housing changes were selected as restoration oriented stressors for college students as suggested by previous literature (Servaty-Seib & Taub, 2010). These other stressors were assessed with the question, "Have you had any of these other events occur in the past 12 months?" and the option to identify "major financial problems," "serious housing problems," and "serious difficulties at school." Participants were able to indicate "yes" (1) or "no" (0), with sum scores ranging from 0-3 and higher scores indicating a higher incidence of restoration-oriented stressors. Individuals who did not respond to all three questions were excluded from final analysis ($n = 8$).

Restoration oriented coping. The Participation in Activities Scale (Dick et al., 2014) was used as a proxy for restoration oriented coping. This scale was used to measure students' interpersonal connectedness on campus as well as in the community. Using interpersonal engagement as a proxy for restoration coping has been suggested for researchers examining the dual process model in college students in previous literature and served as one of the most appropriate forms of measurement within the available dataset (Servaty-Seib & Taub, 2010).

Students' participation in social activities was assessed in their spring semester with a short series of 5-items where respondents could indicate whether they participated in these activities “never” (1), “rarely” (2), “sometimes” (3), or “often” (4), with scores ranging from 4-20. Activities included participating in organized sports, greek life parties/events, student interest organizations, community activities like volunteer or interest groups, and religiously facilitated activities. If individuals responded to 4 out of the 5 items, the missing response was prorated based on the average response. Sum scores were then calculated with the prorated item replacing the missing item ($n = 12$).

Outcome measure.

Psychological well-being. *Anxiety and Depression* ratings were measured using a subset of questions from the SCL-90 (Derogatis et al., 1973), a self-report instrument commonly used in both research and clinical settings to assess psychological symptoms such as anxiety and depression. This questionnaire asks participants to report on their symptoms within the last month and consists of 24 items from the following subscales on the SCL-90: depression (11 items), somatization (1 item), anxiety (7 items), and phobic anxiety (5 items). Individuals rated each question on a 5 point Likert scale with the options “not at all” (1), “a little bit” (2), “moderately” (3), “quite a bit”(4), and “extremely” (5), with answers summed for a continuous score. The anxiety ($\alpha = 0.85$) and depression ($\alpha = 0.89$) subscales used in the following analyses are averages of responses for non-missing answers for more than half of the anxiety and depression questions. Subscales were then summed into a total composite score which represents overall psychological well-being (composite scores ranging from 8-40). Individuals who did not respond to more than half of the questions on each subscale or did not fill out enough items to calculate complete composite scores were excluded from final analysis ($n = 6$).

Results

Descriptive Statistics

Demographic data and outcome variables. Bereaved students were first identified in the larger Spit 4 Science dataset. Of those bereaved students, researchers selected participants who completed measures at each necessary time point (i.e., pre-loss, indication of loss, post-loss) based on cohort membership and year of loss. Of this sample of students who were both bereaved, and had data for each time point of interest, 18 participants were excluded from analysis because of missing cases for main analyses. These 18 cases were excluded for the following reasons: 8 did not complete all items assessing the number of restoration-oriented stressors, 3 did not have information to assess social support quality, 1 did not have ratings for neuroticism, 1 was missing pre-loss psychological well-being, 2 missing time of loss psychological well-being, and 3 missing 12 months post-indication of loss. Table 1 details the demographic distribution and average age of the remaining sample ($N = 420$). Overall 48.6% of this bereaved sample indicated that they had experienced a loss at their freshman spring survey, 32.4% in their sophomore year survey, and 19.0% in their junior year survey. The sample was predominantly White (46.7%), female (68.8%), with an average age of 19.64 ($SD = 0.82$); 23.3% identified as Black/African American, 19.3% identified as Asian, 7% identified as American Indian/Alaska Native, 4.8% identified as Hispanic/Latinx, 3.1% identified as More than one race, 1.0% identified as Native Hawaiian/Other Pacific Islander, and 1.2% Unknown or missing.

Table 1.
Demographics By Year of Loss

	Overall	Year of Loss		
		<u>Freshman</u>	<u>Sophomore</u>	<u>Junior</u>
Female	289 (68.8%)	137 (67.2%)	95 (69.9%)	57 (71.2%)
Male	131 (31.2%)	67 (32.8%)	41 (30.1%)	23 (28.8%)
Average Age	19.64 (SD = 0.82)	18.98 (SD = 0.33)	19.88 (SD = 0.39)	20.90 (SD = 0.43)
<u>Race/Ethnicity</u>				
White	196 (46.7%)	97	60	39
African American/Black	98	44	36	18
Asian	81	35	31	15
Hispanic/Latinx	20	14	2	4
More than one race	13	8	4	1
Native Hawaiian/Pacific Islander	4	2	0	2
American Indian/Alaskan Native	3	2	1	0
Unknown/Missing	5	2	2	1

Frequencies

Descriptive data. Table 2 details the descriptive data of each variable included in the subsequent analyses. The values for asymmetry and kurtosis are included as well, with values between -1 and +1 considered acceptable in order to demonstrate normal univariate distribution. Overall, most variables were normally distributed but pre-loss psychological well-being ($s = 1.11$) was slightly skewed and restoration-oriented stressors ($s = 1.73$, $k = 2.36$) was skewed and kurtotic. These data were checked for univariate outliers and transformed using a square root function, at which point data conformed to a normal distribution.

Table 2.

Descriptive Statistics of Variables in Main Analysis

Variable	Min	Max	Mean	Skewness	Kurtosis
Age	18.37	22.33	19.64 SD=0.82	0.63	-0.33
Restoration Stressors	0	1.73(3)	0.47(0.39) SD = 0.79 (0.57)	0.99 (1.73)	-0.62 (2.36)
Restoration Coping	5	20	10.12 SD=3.34	0.31	-0.48
Social Support	0	9	6.12 SD=2.34	-0.51	-0.44
Psyc Well-Being (T0)	8	40	15.82(3.9) SD = 6.34 (0.76)	0.72 (1.11)	-0.07 (0.87)
Psyc Well-Being (T1)	8	40	16.17 SD = 6.57	0.92	0.52
PsycWell-Being (T2)	8	40	15.70 SD=6.56	0.91	0.35
Neuroticism	3	15	8.19 SD=2.90	0.20	-0.51

*skewness and kurtosis scores in parenthesis are scores before transformation, while means and SD are after transformation. Transformed using square root function because cases exceeded our critical value and excluding 20+ students was determined to be excessive. Only moderately different from normal.

Power Analysis

Investigators used G*Power software (Faul, Erdfelder, Buchner, & Land, 2009) to conduct a post-hoc power analysis to evaluate the sample size needed to detect a small (.02), medium (.15), and large (.35) effect within the population based on Cohen's *d* (Cohen, 1992). The power analysis was performed based on the hierarchical multiple regression analysis assuming a small effect size within the population (.02). Results of the power analysis suggested a sample size of 647 participants, assuming a small effect size, would be sufficient to detect an effect (power = .80, $\alpha < .05$). The current sample of 420 participants, assuming a small

effect within the population, may be insufficient to detect an effect and increases our possibility of making a Type II error (power = .52, $\alpha < .05$). However, researchers also performed post-hoc power analyses to evaluate if the sample was sufficient for detecting medium or large effects in the population. These results indicated the sample was large enough to detect both a medium (power = .99, $\alpha < .05$) and large (power = 1.00, $\alpha < .05$) effect in the population.

Hypothesis Testing

Evaluation of assumptions. Assumptions of univariate and multivariate normality, linearity, and normally distributed errors were checked and met. Univariate normality was assessed by checking skewness and kurtosis of sample variables. Restoration-oriented stressors and Psychological well-being at pre-loss were kurtotic. These data were then checked for univariate outliers by assessing standardized values of each variable and then transformed using square root function as data differed moderately from normal. Data were then checked for linearity and multivariate outliers. With the use of a $p < 0.001$ criterion for Mahalanobis distance, no multivariate outliers were identified. Data were then assessed and met for assumptions of normality of residuals, linearity of residuals, and homoscedasticity.

Statistical model 1: Hierarchical multiple linear regression. A hierarchical multiple linear regression was used in order to test the main effects of 1) social support quality and 2) restoration-oriented coping, as well as the interaction effects of 3) social support and restoration-oriented coping, 4) restoration-oriented stressors and restoration-oriented coping on psychological well-being following a loss, all while controlling for pre-loss psychological well-being and class rank. Tests for multicollinearity (VIF and Tolerance statistics) were computed and indicated a very low likelihood of issues with multicollinearity was present. Thus the steps for hierarchical regression predicting psychological well-being were as follows: Step 1) Pre-loss

psychological well-being and class rank, Step 2) Restoration-oriented stressors and restoration-oriented coping, Step 3) Interaction between restoration-oriented stressors and restoration-oriented coping, Step 4) Social Support, Step 5) Interaction between restoration-oriented coping and social support quality.

When pre-loss psychological well-being and class rank were entered simultaneously they both predicted psychological well-being following loss, $F(2, 417) = 90.62, p < .01, R^2 = .30$. However, when assessing the individual effects of these covariates, pre-loss psychological well-being significantly predicted psychological well-being following loss, $\beta = .053, t(417) = 12.39, p < .01$ and class rank did not, ($\beta = 0.06, t(417) = 1.36, p = 0.17$). In the second step, the mean centered terms of restoration stressors and restoration coping were entered, explaining a significant change in $R^2, F(2, 415) = 47.51, p = .04, R^2 = 0.01$. When assessing the individual effects of these variables, restoration-oriented coping significantly predicted psychological well-being following loss, $\beta = -0.11, t(417) = -2.66, p = .01$ and restoration-oriented stressors did not, ($\beta = 0.05, t(417) = 1.07, p = 0.29$). The negative association between restoration-oriented coping and psychological well-being post loss suggests that higher rates of restoration-oriented coping predicted lower levels of depression and anxiety symptoms a year from reporting a loss. In the third step, the interaction term of restoration stressors and restoration coping was entered and did not explain a significant change in $R^2, F(5, 414) = 38.20, p = 0.33, R^2 = .002$. In fourth step, the mean centered terms of social support quality was entered and did not explain a significant change in $R^2, F(6, 413) = 31.91, p = 0.43, R^2 = 0.001$. However, when the interaction term of social support quality and restoration-oriented coping was entered in the fifth step, the model significantly predicted post-loss psychological well-being over and above all other variables, $F(7, 412) = 28.30, p = .03, R^2 = 0.01$. This suggests an interaction effect between social support

quality and restoration-oriented coping, such that good social support quality strengthens the relationship between restoration-oriented coping and psychological well-being post loss (see Figure 3).

Table 3.
Predictors of Psychological Well-Being Post-Loss (T2)

Variable	<i>b</i>	β	<i>t</i>	<i>p</i>	<i>R</i>	<i>R</i> ²	ΔR^2	<i>p</i>
Step 1:					.550	.303	.303**	<.001
Psyc well-being (T0)	4.59	0.53**	12.39	<.001				
Class rank	0.48	0.06	1.36	0.17				
Step 2:					.560	.314	.011**	0.035
Restoration stressors	0.52	0.05	1.07	0.29				
Restoration coping	-0.22	-0.11**	-2.66	0.01				
Step 3:					.562	.316	.002	0.325
Stressors X Coping	0.25	-0.08	-1.76	0.08				
Step 4					.563	.317	.001	0.425
Social support quality	0.10	0.04	0.85	0.40				
Step 5					.570	.325	.008**	0.029
Coping X Support quality	-0.08	-0.10**	-2.20	0.03				

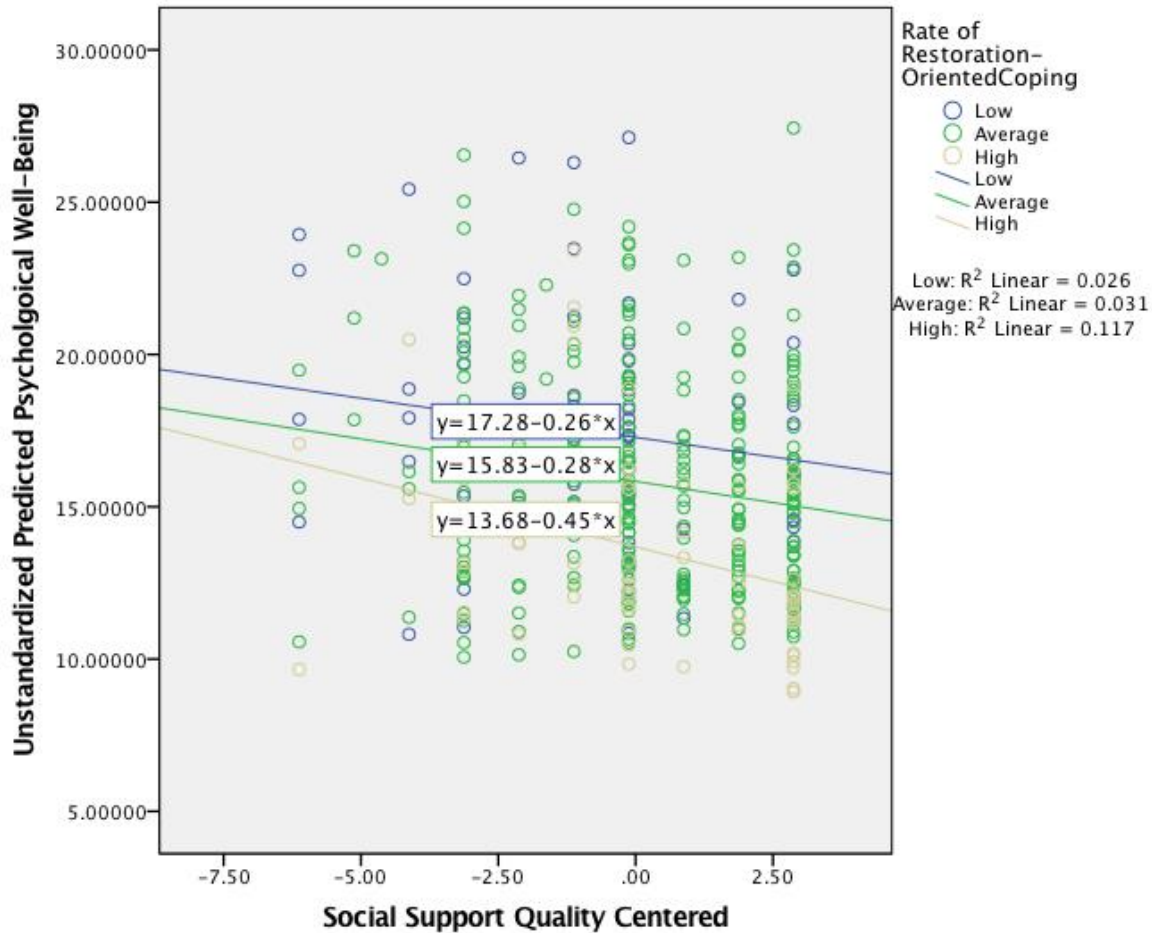
Table 4.

Predictors of Psychological Well-Being Post-Loss (T2) Zero-Order Correlations

		Class Rank	T0 PWB	R-O Stressors	R-O Coping	Stress X Coping	Social Support	Social X Coping	T2 PWB
Pearson Correlation	Class Rank	1.000	-.019	-.065	.123	-.031	.021	-.045	.037
	T0 PWB	-.019	1.000	.170	-.183	-.128	-.251	.132	.548
	R-O Stressors	-.065	.170	1.000	-.028	.016	-.294	.039	.120
	R-O Coping	.123	-.183	-.028	1.000	.039	.115	-.090	-.193
	Stress X Coping	-.031	-.128	.016	.039	1.000	.040	-.388	-.112
	Social Support	.021	-.251	-.294	.115	.040	1.000	-.029	-.122
	Social X Coping	-.045	.132	.039	-.090	-.388	-.029	1.000	.011
	T2 PWB	.037	.548	.120	-.193	-.112	-.122	.011	1.000
Sig. (1-tailed)	Class Rank	.	.000	.227	.007	.000	.011	.006	.408
	T0 PWB	.350	.	.000	.000	.004	.000	.003	.000
	R-O Stressors	.093	.000	.	.284	.370	.000	.210	.007
	R-O Coping	.006	.000	.284	.	.212	.009	.033	.000
	Stress X Coping	.263	.004	.370	.212	.	.209	.000	.011
	Social Support	.332	.000	.000	.009	.209	.	.277	.006
	Social X Coping	.179	.003	.210	.033	.000	.277	.	.408
	T2 PWB	.227	.000	.007	.000	.011	.006	.408	.
N	Class Rank	420	420	420	420	420	420	420	420
	T0 PWB	420	420	420	420	420	420	420	420
	R-O Stressors	420	420	420	420	420	420	420	420
	R-O Coping	420	420	420	420	420	420	420	420
	Stress X Coping	420	420	420	420	420	420	420	420
	Social Support	420	420	420	420	420	420	420	420
	Social X Coping	420	420	420	420	420	420	420	420
	T2 PWB	420	420	420	420	420	420	420	420

Figure 3.

Interaction Effect of Restoration-Oriented Coping and Social Support Quality on Psychological Well-Being (T2)



Statistical model 1a: PROCESS analysis. Researchers also analyzed these moderators (i.e., social support and restoration oriented stressors) with Andrew Hayes (2017) PROCESS macro. This approach allowed us to model both moderators, use bootstrapping, and assess the conditional effects of restoration-oriented coping on psychological well-being at different levels of our moderators. This approach confirmed that the overall model was significant, $F(7,412) = 19.24, p < .001, R^2 = 0.32$ and accounted for 32% of the variance. Social support was not a significant predictor, $b = 0.10, t(412) = 0.77, p = 0.44$, nor was restoration-oriented stressors, b

= 0.52, $t(412) = 0.99$, $p = 0.32$. However, as reported above, the interaction between social support and restoration-oriented coping was significant, $F(1,412) = 4.83$, $p = 0.03$, $R^2 = 0.008$, while that between restoration-oriented coping and restoration-oriented stressors was not, $F(1,412) = 3.11$, $p = 0.08$, $\Delta R^2 = 0.005$. When assessing the conditional effect of X on Y at different values of the moderators, we have some interesting findings. When looking across values of social support quality and restoration-oriented stressors, there are significant effects of restoration-oriented coping on psychological well-being at different levels. It should be noted that levels are determined based on the mean, ± 1 SD within the sample, not based on a normal distribution or any measure specific score thresholds. Depending on the level of social support and restoration-oriented stressors, the effect of restoration-oriented coping changed. At low levels of social support and average social support, with low restoration stressors a significant effect of restoration-oriented coping on psychological well-being was not present. The effect of restoration-oriented coping on psychological well being was significant at average levels of support, and average levels of stressors, $b = -0.22$, $t(412) = -2.71$, $p = 0.01$ and high levels of stressors, $b = -0.36$, $t(412) = -3.10$, $p < 0.01$. The effect of restoration-oriented coping on psychological well-being did not vary across high levels of social support showing consistent negative significant effects across low, $b = 0.29$, $t(412) = -2.73$, $p = 0.01$, average, $b = -0.40$, $t(412) = -3.49$, $p < .001$, and high levels of stressors, $b = -0.54$, $t(412) = -3.27$, $p = 0.001$.

These results imply that the effect of restoration-oriented coping on psychological well-being varies as a functioning of the tested moderators. Results suggest those individuals that had average to high levels of social support in general (e.g., excluding those with low restoration-oriented stressors in the case of average social support) got significant benefits from engaging in

restoration-oriented coping. On the other hand, those with low to average stressors and low social support in general did not get the same benefits.

Statistical model 2: Mediation model. Based on recommendations made by the committee, using the guidelines for mediation analyses proposed by Shrout and Bolder (2002), the following mediation analysis was conducted using bootstrapping. The PROCESS macro addition was used in order to complete bootstrapping and mediation analyses as recommended in Hayes (2017). We conducted bootstrapping analysis to examine the indirect effect of psychological well-being at indication of loss on post-loss psychological well-being through traits of neuroticism, while controlling for baseline symptoms of depression and anxiety. This model, completed with 10,000 bootstraps, yielded a mean bootstrap estimate of the indirect effect of .05. Because the 95% confidence interval did not include 0 (0.02 – 0.08), we concluded that neuroticism mediated the effect of psychological well-being at indication of loss on psychological well-being post-loss. That is, poor psychological well-being at indication of loss, predicted neuroticism, which in turn, led to poorer psychological well-being at follow-up.

Exploratory Analyses

Psychological well-being and personality. In order to evaluate the relationship between an individual's identification with behaviors related to certain personality traits and their psychological well-being following the loss of a loved one, a hierarchical multiple linear regression was conducted. To control for distress reported at indication of loss, ratings of anxiety and depression were included as a covariate in the following analysis, while the predictive value of personality subscales on psychological well-being post-loss was evaluated in the next step. These data were then checked for assumptions of univariate and multivariate normality, linearity, and normally distributed errors. Univariate normality was assessed by checking skewness and

kurtosis of sample variables. Of note, ratings of conscientiousness and openness were moderately skewed and kurtotic. These data were then checked for univariate outliers by assessing standardized values of each variable. There were four values identified in the openness variable that were replaced with the score conversion from $z = 3.29$ (or 5.4). After making this replacement, data then conformed to normal distribution. When this approach was used for conscientiousness data still did not conform to regular levels of skewness and kurtosis. Data were then reflected to address the negative skew, and then transformed using the square root function at which point the data conformed to appropriate levels of skewness and kurtosis. Data were then checked for linearity and multivariate outliers. With the use of a $p < 0.001$ criterion for Mahalanobis distance, 3 multivariate outliers were identified. Data were then checked for assumptions of normality of residuals, linearity of residuals, and homoscedasticity.

Table 5.
Descriptive Statistics of Variables in Exploratory Analysis

Variable	Min	Max	Mean	Skewness	Kurtosis
Openness	3	15	12.44 SD = 2.13	-0.91 (-1.11)	0.68 (1.77)
Conscientiousness	3	15	13.44 SD = 1.79	0.84 (-1.64)	0.30 (3.82)
Extraversion	3	15	10.49 SD = 2.90	-0.32	-0.58
Agreeableness	3	15	12.21 SD = 2.13	-0.64	0.02
Neuroticism	3	15	8.19 SD = 2.90	0.20	-0.51
Psyc Well-Being (T1)	8	40	16.17 SD = 6.57	0.92	0.52
Psyc Well-Being (T2)	8	40	15.70 SD = 6.56	0.91	0.35

*scores in parenthesis are scores before transformation or score replacement. Transformed using square root function because cases exceeded our critical value and did not respond to replacement. Only moderately different from normal.

To assess how well personality factors predict psychological well-being post loss, a hierarchical linear regression was computed. [Assumptions of univariate and multivariate normality, linearity, and normally distributed errors were checked and met.] When psychological well-being at time of loss was entered, it significantly predicted psychological well-being post loss, $F(1, 417) = 258.46, p < 0.001, R^2 = 0.38$. When personality subscales were entered, it significantly improved the predictive value of the model, $\Delta R^2 = 0.07, \Delta F(5, 412) = 10.56, p < 0.001$. Results indicated that when controlling for distress at time of loss, the following personality scales were predictive of post-loss psychological well-being: neuroticism ($\beta = 0.25, t(412) = 6.04, p < 0.001$), openness ($\beta = 0.12, t(412) = 3.04, p < 0.01$), and extraversion ($\beta = -0.09, t(412) = 2.41, p = 0.02$).

Table 6.
Personality and Psychological Well-Being Post-Loss (T2)

Variable	<i>b</i>	β	<i>t</i>	<i>p</i>	<i>R</i>	R^2	ΔR^2	<i>p</i>
Step 1:					.619	.383	.383**	<.001
Psyc well-being (T1)	0.62	0.62**	16.01	<.001				
Step 2:					.673	.453	.070**	<.001
Openness	0.36	0.12**	3.04	<.01				
Conscientiousness	0.28	0.02	0.55	0.58				
Extraversion	-0.21	-0.09**	-2.41	0.02				
Agreeableness	0.10	0.12	0.84	0.40				
Neuroticism	0.57	0.25**	6.04	<.001				

Table 7.

Personality and Psychological Well-Being Post-Loss (T2) Zero-Order Correlations

		T1 PWB	T2 PWB	Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
Pearson Correlation	T1 PWB	1.000	.619	.091	.155	-.155	-.130	.433
	T2 PWB	.619	1.000	.138	.115	-.198	-.079	.472
	Openness	.091	.138	1.000	-.127	.165	.134	-.029
	Conscientiousness	.155	.155	-.127	1.000	-.133	-.317	.125
	Extraversion	-.155	-.198	.165	-.133	1.000	.090	-.201
	Agreeableness	-.130	-.079	.134	-.317	.090	1.000	-.193
	Neuroticism	.433	.472	-.029	.125	-.201	-.193	1.000
Sig. (1-tailed)	T1 PWB	.	.000	.031	.001	.001	.004	.000
	T2 PWB	.000	.	.000	.000	.004	.000	.003
	Openness	.031	.002	.	.005	.000	.003	.275
	Conscientiousness	.001	.009	.005	.	.003	.000	.005
	Extraversion	.001	.000	.000	.212	.	.032	.000
	Agreeableness	.004	.054	.003	.000	.032	.	.277
	Neuroticism	.000	.000	.275	.005	.000	.000	.
N	T1 PWB	419	419	419	419	419	419	419
	T2 PWB	419	419	419	419	419	419	419
	Openness	419	419	419	419	419	419	419
	Conscientiousness	419	419	419	419	419	419	419
	Extraversion	419	419	419	419	419	419	419
	Agreeableness	419	419	419	419	419	419	419
	Neuroticism	419	419	419	419	419	419	419

Discussion

The present study examined variables that may impact the effects of restoration-oriented coping efforts on psychological well-being following a loss. The overall results are summarized here with extended discussion of each aim following the summary. It was predicted that there would be a main effect of restoration-oriented coping and social support on psychological well-being following a loss, such that higher rates of coping and better social support quality would predict better psychological well-being. Further it was predicted that there would be an interaction between social support quality and restoration-oriented coping efforts, with better quality social support strengthening the effects of restoration-oriented coping on psychological well-being post-loss. It was also predicted that those with additional restoration-oriented stressors would not glean the same beneficial effects from engaging in restoration-oriented coping in regards to psychological well-being post-loss. These hypotheses were tested with a hierarchical multiple regression. Results indicated a significant negative effect of restoration-oriented coping on psychological well-being post-loss and a very small, significant negative, interaction effect of restoration-oriented coping and social support quality on psychological well-being post-loss. No effect of restoration-oriented stressors was detected, nor main effects of social support quality.

Additionally, the role of neuroticism as a mediating variable in the relationship between psychological well-being at time of indication of loss and 12 months post-indication of loss was assessed. It was found that there was a mediating effect of neuroticism on this relationship, such that poor psychological well-being at TOL, predicted neuroticism, which in turn, led to poorer psychological well-being at follow-up.

Finally, exploratory analysis using hierarchical multiple regression was used to assess the relationship between personality (openness, conscientiousness, extraversion, agreeableness, and neuroticism) and psychological well-being post-loss, when controlling for psychological well-being at indication of loss. Findings revealed higher rates of neuroticism and openness were associated with greater impairment post-loss, while higher rates of extraversion were related to lower rates of poor psychological well-being post-loss.

Hypothesis Testing

Analysis 1. Within our first statistical model, we examined a number of main and interaction effects within a hierarchical multiple regression. Pre-loss psychological well-being and class rank accounted for a large amount of the variance in our model $R = 0.55$. When restoration-stressors and restoration-oriented coping were introduced into the model simultaneously, they explained a small but significant amount of variance over and above pre-loss psychological well-being $\Delta R^2 = 0.011$. However, main effects indicate that although there was a main effect of restoration-oriented coping, there was not a main effect of restoration-oriented stressors. Previous research looking at spousal-loss has shown that secondary stressors related to the loss of the loved one like needing to coordinate child care, continue social connections, or learn new skills has been related to poorer outcomes (Harper, O'Connor & O'Carroll, 2015). However, when assessing if extreme financial, housing, or academic stressors influenced psychological well-being at follow up, there was no detectable predictive relationship. It is possible that the measurement of this construct was too gross and timing too general in order to assess the association between additional stressors and post-loss outcomes. Servaty-Seib & Taub (2010) argued that unlike in a spousal partnership, the responsibilities of bereaved undergraduates after a loss are more related to continuing their academic pursuits and

maintaining their relationships. It is possible that if future research were better able to capture secondary stressors related to these objectives and loss, a similar effect would be identified in this sample. However, there was a main effect of restoration-oriented coping efforts such that student participation in activities predicted better outcomes at follow up. This finding is consistent with Servaty-Seib and Taub's (2010) prediction that similar effects of restoration-oriented coping would be seen in the bereaved undergraduate population as in bereaved adults based on Balk's (1997) findings that students are already oscillating between loss-oriented and restoration-oriented coping (i.e., trying to stay busy).

The next step assessed the interaction between restoration-oriented stressors and restoration-oriented coping. It was predicted that students with increased restoration-oriented stressors would not reap the same benefits of restoration-oriented coping, such that the increased number of stressors would weaken the relationship between participation in activities and lower symptoms of anxiety and depression. Results indicated this interaction did not explain a significant portion of the variance over and above the main effects. As previously mentioned, it is possible that the measurement of restoration-oriented stressors is too imprecise and general to detect an effect.

In the following step, social support quality was introduced into the model and did not demonstrate a main effect. This finding was particularly interesting in that social support is traditionally thought of as an instrumental coping tool for individuals who have recently been bereaved (Fajgenbaum, Chesson & Gaines Lanzi, 2012). Although researchers have found that the impact of social support at the time of loss can act as a buffer against immediate grief intensity, it has not been shown to have long-term effects at follow up (Stroebe, et al., 2005).

Particularly in a college sample, one study also found no effects of social support on grief related symptoms (Smith-McNally, 2014).

In the final step, the interaction between social support quality and restoration-oriented coping (participation in social activities) was found to be a significant predictor of post-loss psychological well-being, over and above all other main and interaction effects. This finding is particularly interesting given the lack of significance of social support quality as a main effect and main effect of restoration-oriented coping. This suggests that, although not a substantial amount of additive variance is explained by this interaction, that this multi-pronged approach to social interaction (both emotional and behavioral) has the most robust effects on bereavement when followed over time.

Findings suggest that trait, person-level variables are good indicators for future behavior and outcomes. Jordan and Litz (2014) discuss how when differentiating between PGD and normative bereavement, certain characteristics were likely to indicate worse trajectories (i.e., yearning, wishing). Thus it makes sense that an individual's pre-loss well-being would account for a vast majority of the variance and then that engagement in social activities and social support quality (approaches to coping) would be most predictive of later well-being.

Analysis 2. Within our second statistical model, we examined the mediating role of neuroticism between psychological well-being at indication of loss and psychological well-being at follow up the next year. It was hypothesized that neuroticism would account, at least partially, for some of the variance between psychological well-being across these two time points. Consistent with previous research that has linked neuroticism and greater grief intensity (Robinson & Marwit, 2006), neuroticism was found to play a mediating role in the relationship between impairment at loss and impairment at 12 month follow up. Previous research that

neuroticism may be related to poorer coping mechanisms like rumination (van der Houwen, Stroebe, Schut, Stroebe & van den Bout, 2010), may explain the mechanisms through which neuroticism further impacts the bereavement response. Additionally, in general, there is robust evidence that higher rates of neuroticism are related to a series of mental health diagnosis. In a meta-analysis Kotov, Gamez, Schmidt, & Watson (2010) found that when assessing this personality trait's cross-sectional association with common mental illnesses, neuroticism was highly correlated with common mental health diagnoses with Cohen's *d* magnitudes ranging from 0.5 to 2.0. In another study assessing the link between neuroticism, health behaviors, and subjective well-being, it was found that neuroticism was associated with higher perceptions of stress, poorer perceptions of physical health, and poorer subjective well-being (Otonari et al., 2012). Overall, there is a plethora of literature pointing to a relationship between neuroticism and pathology, with depression and anxiety symptoms after a loss being no different.

Analysis 3. Exploratory analyses were conducted to assess the predictive power of personality traits on psychological well-being post-loss, when controlling for psychological well-being at indication of loss. Findings revealed higher rates of neuroticism and openness were associated with greater impairment post-loss, while higher rates of extraversion were related to better psychological well-being post-loss. As referenced above, associations between neuroticism and psychopathology are well documented in the literature (Otonari et al., 2012; Kotov et al., 2010; Robinson & Marwit, 2006), thus it is not surprising that depression and anxiety symptoms were more likely to be impacted by traits related to neuroticism over and above baseline depression. One might argue that like most mental health conditions, identifying with traits related to neuroticism is likely to increase risk for pathology.

Interestingly, openness was also positively related to symptoms of anxiety and depression post-loss. Although it may seem counterintuitive, openness has been linked with earlier onset of depression in an elderly sample (Koorevaar et al., 2013). Authors suggest perhaps high ratings of openness may cause people to be more open and sensitive to both positive and negative events, subsequently causing them to more easily develop symptoms in reaction to adverse life experiences. However, it is also possible that since an abbreviated version of the BFI was used, there could be issues with construct validity. Items that comprise this scale are largely related to creativity, “Values artistic, aesthetic experiences,” “Is original, comes up with new ideas,” and “Has an active imagination.” Perhaps these items fail to capture the overarching construct, reflect issues with social desirability, or sampling, as most individuals in our sample fell at the very high end of this subscale ($M = 12.44$, $SD = 2.13$).

Findings indicate that high ratings on items related to extraversion were likely to predict lower rates of anxiety and depression. One study found that depressed patients in outpatient treatment had lower rates of extraversion when compared to controls (Weber et al., 2012), across different age groups and regardless of whether or not their depression was remitted or not. In a study looking at the effects of personality on depression symptoms in widows/ers, Pai & Carr (2010) found modest buffering effects of extraversion and conscientiousness, suggesting that extroverts, “may be particularly effective at marshalling social support and reintegrating themselves into activities and relationships following spousal loss” (p. 192). They further suggest that these individuals may be especially adept at employing restoration-oriented coping, reaping benefit through these action-oriented coping strategies.

Study Strengths, Limitations, and Future Directions

Strengths. One strength of the methodological design is that it surveyed students over the course of several years and included pre-loss indicators of psychological well-being (i.e., depression and anxiety scores). This is particularly important because within the bereavement literature there has been limited research that has been able to assess the longitudinal patterns of grief in emerging adulthood and there exists even less that has been able to capture the bereavement trajectory pre-loss to post-loss (Bonanno, 2002). Repeated measurement allowed researchers to assess change over time in the context of existing person level variables such as pre-loss psychological well-being and subsequently provides an idea of bereavement related symptoms within the context of pre-loss functioning.

Limitations. While the longitudinal design of this data set spoke to existing holes in the literature, it had some drawbacks, most importantly related to measurement and the timing of surveys related to the loss. This secondary data analysis is not unique in that it falls short of comprehensive measurement and assessment of the constructs of interest. In fact, a common byproduct of using a secondary dataset is issues with measurement, as studies are often better able to satisfy questions of which they were originally designed to. There are number of factors related to grief and bereavement which are not adequately captured in the available data. In particular, there exists limited information around the characteristics of the individual's loss. This data set did not collect details about the individual's relationship to the deceased (i.e., parent, sibling, grandparent, or friend), how close they were to the individual, or how sudden or traumatic the circumstances of their death (i.e., death by suicide, accident, or homicide vs. death by natural causes). Previous research with bereaved adults has shown that individuals who have lost a loved one to violent or traumatic events experience greater distress when compared to

those who lost loved ones to “natural causes” (Holland & Niemeyer, 2011; Kaltman & Bonanno, 2003). It is also known from the larger coping literature and meaning-making models that events do not impact individuals in isolation. Their evaluation of the situation, world-views, and global beliefs greatly impact the meaning they draw from traumatic life events (Park, 2010).

Additionally, it was not possible to ascertain the distinction between symptoms of depression and anxiety and grief intensity within this sample. The limitations of our secondary data analysis, make it so that we must infer functioning after a loss from symptoms of depression and anxiety. However, because of this, it is not necessarily clear if symptoms are related to the loss itself, to situational stressors, or other organic ebbs and flows in anxiety and mood.

Participants were also able to complete surveys at any point during the semester, meaning that individuals filled out surveys with varying amounts of time past since their loss. This lack of consistency and lack of knowledge of the time of loss introduces the possibility for issues with internal validity. Without knowing the amount of time that has passed since the individual has lost their loved one, it is difficult to control for time differences and distinctions between acute and ongoing symptoms of grief. This issue may have contributed to noise within the data set, making it difficult to detect meaningful effects of bereavement on psychological well-being, as well as the impact of their coping efforts.

It should also be noted that college students are not the only emerging adults and results are likely not generalizable to all emerging adults. Although the majority of high school students enter into higher education after graduating (over 60%), there still exist a substantial percentage of emerging adults that do not reside within higher education institutions (Arnett, 2004). Educational, intellectual, and many other types of privilege are commonly ignored when using convenience sampling on college campuses. Although, researchers were particularly interested in

the process of losing a loved one during college, in part because there is evidence that loss during this time is especially difficult (Balk, 2011). Caution should be exercised if attempting to generalize results to all emerging adults outside of a college setting.

Future directions. As prioritized within this study, future research should continue to assess for change in symptoms of grief across time, ideally collecting pre-loss data. This information provides valuable insight into person-level factors, as well as ways in which pre-loss factors impact the trajectory of grief. There exists limited research outlining these trajectories (Bonnano, 2002), and no research to date has tried to replicate existing trajectories in a bereaved undergraduate sample. Future research should incorporate statistical modeling of known, or exploratory analysis of distinct trajectories, in a bereaved emerging adult sample.

Additionally, future research would benefit from continuing to investigate the effects of restoration-oriented coping in bereaved undergraduate samples. In particular, assessment and measurement of restoration-oriented coping in undergraduates is an area for potential growth and development, as limited options exist for measurement outside of the spousal bereaved. Research should continue improving and developing restoration-oriented coping measures outside of spousal relationships, with particular focus on construct validity across varying populations.

In the hopes of improving on the limitations of the current secondary data analysis, researchers should emphasize the development of assessment batteries that assess the situational and person-level variables that impact bereavement, as well as previous beliefs and world worlds as they relate to death and dying. In future research it would be prudent to characterize the circumstances of loss and relationship to the deceased at the very minimum. Factors such as relationship to the deceased, closeness to the deceased, suddenness of the loss are vital in

capturing the possible degree of impact. As explained by Park and Folkman (1997), global and situation meaning greatly impact the experience of trauma. Thus, for example, a student losing their best friend to suicide can be expected to experience bereavement much differently from a student losing a grandparent in old age after a lengthy illness. The implication then being that certain types of death follow an individual's assumptions and expectations, while others do not and thus differentially impact the individual.

Park (2010) calls on researchers to incorporate accurate assessment of meaning-making as close in proximity to the loss as possible. Further improvement in the study design could include assessment of grief specific meaning-making and symptoms, ideally as close to incidence as possible. Perhaps monthly updates could allow students to give brief depression and anxiety ratings and identify major life events, prompting them for opportunities for additional studies related to specific stressors of interest (i.e., bereavement).

More work is needed in order to understand how these findings can be translated to interventions for bereaved students on college campuses. If engagement in on- and off-campus activities has been shown to be predictive of better post-loss psychological well-being, then institutions should make efforts to assess and promote continued engagement. Students who have recently been bereaved could be approached with opportunities and resources to remain connected with their on- and off-campus community. Perhaps having academic counselors reach out to assist students with managing their additional stressors (i.e., missing classes to attend services related to bereavement, discussing make up work and extensions with professors) following a loss, and also assessing and encouraging continued engagement in restoration-oriented coping (i.e., staying busy) could be beneficial.

Additionally, if the interaction between social support quality and restoration-oriented coping suggests that those with better quality support reap more benefits from continued involvement, institutions could use newsletters and common areas for advertisements and flyers (i.e., Stall Seat Journal at VCU) to provide brief psychoeducation on grief, bereavement on campus, resources, ways to take care of one's self, and how to support a grieving friend. Building a community that is responsive to the concerns of bereaved students at both an institutional and individual level may improve the quality of social support a student receives at the time of loss. Researchers have identified practical guidelines to assist student affairs in disseminating information about how to help a grieving friend through active listening, in the hopes of address concerns that students are unsure how to talk about these issues (Parikh & Servaty-Seib, 2013). Through active and ongoing discussions of this issue on campuses, institutions can maximize the likelihood that students will come across individuals who can provide assistance, either through promoting restoration-oriented coping efforts or strengthening its effects with positive social support quality.

List of References

- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Washington, DC.
- Archer, J. (2008). Theories of grief: Past, present, and future perspectives. In M. Stroebe, R. Hansson, H. Schut, and W. Stroebe (Eds.) *The Handbook of Bereavement Research and Practice* (p. 45-65). Washington D.C.: American Psychological Association.
- Arnett, J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469. doi:10.1037//0003-066X.55.5.469
- Arnett, J. J. (2001). Conceptions of the transition to adulthood: Perspectives from adolescence to midlife. *Journal of Adult Development*, 8, 133-134. doi:10.1023/A:1026450103225
- Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties*. New York: Oxford University Press.
- Baker, R. W., & Sirk, B. (1984). Measuring adjustment to college. *Journal of Counseling Psychology*, 31(2), 179–189. doi:10.1037/0022-0167.31.2.179
- Balk, D. E. (1997). Death, bereavement and college students: a descriptive analysis. *Mortality*, 2(3), 201–220. doi:10.1080/713685866
- Balk, D. E. (2008). Grieving: 22 to 30 Percent of All College Students. In *New Directions for Student Services*, 133, 41–53. doi:10.1002/ss
- Balk, D. E. (2011). *Helping the bereaved college student*. New York: Springer Pub.
- Balk, D.E, Lampe, B., Sharpe, B., Schwinn, S., Holen, K., Cook, L., & Dubouis, R. (1998) TAT results in a longitudinal study of bereaved college students. *Death Studies*, 22(1), 3-21. doi:10.1080/074811898201704
- Balk, D., Tyson-Rawson, K., & Colletti-Wetzel, J. (1993). Social support as an intervention with bereaved college students. *Death Studies*, 17(5), 427-450. doi:10.1080/07481189308253387
- Balk, D., Walker, A., & Baker, A. (2010). Prevalence and severity of college student bereavement examined in a randomly selected sample. *Death Studies*, 34, 459-468. doi:10.1080/07481180903251810
- Baron, R. M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social

- psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182. doi:10.1037/0022-3514.51.6.1173
- Battle, C. L., Greer, J. A., Ortiz-Hernández, S., & Todd, D. M. (2013). Developing and implementing a bereavement support program for college students. *Death Studies*, 37(4), 362-382. doi:10.1080/07481187.2011.634087
- Bennett, K., Gibbons, K., & Mackenzie-Smith, S. (2010). Loss and restoration in later life: An examination of the dual-process model for coping with bereavement. *Omega: The Journal of Death and Dying*, 61, 315-322. doi: 10.2190/OM.61.4.d
- Boelen, P. A., & Klugkist, I. (2011). Cognitive behavioral variables mediate the associations of neuroticism and attachment insecurity with Prolonged Grief Disorder severity. *Anxiety, Stress, & Coping*, 24(3), 291–307. doi:10.1080/10615806.2010.527335
- Bonanno, G.A., Wortman, C.B., Lehman, D.R., Tweed, R.G., Haring, M., Sonnega, J., ... Nesse, R.M. (2002). Resilience to loss and chronic grief: A prospective study from preloss to 18-months postloss. *Journal of Personality and Social Psychology*, 83(5), 1150–1164. doi:10.1037//0022-3514.83.5.1150
- Bonanno, G. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *The American Psychologist*, 59(1), 20-8. doi:10.1037/0003-066X.59.1.20
- Bowling, A. (1994). Mortality after bereavement: An analysis of mortality rates and associations with mortality 13 years after bereavement. *International Journal of Geriatric Psychiatry*, 9(6), 445-459. doi: 10.1002/gps.930090603
- Boyraz, G., Horne, S.G., Sayger, T.V., Boyraz, G., Horne, S.G., Finding, T.V.S., & Horne, S.G. (2012). Finding meaning in loss : The mediating role of social support between personality and two construals of meaning. *Death Studies*, 36(6), 519–540. doi:10.1080/07481187.2011.553331
- Bronfenbrenner, U. (1979). *The Ecology of Human Development*. Cambridge, US: Harvard University Press.
- Carver, C. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*, 4, 92-100. doi:10.1207/s15327558ijbm0401_6
- Caserta, M.S., & Lund, D.A. (2007). Toward the development of an Inventory of Daily Widowed Life (IDWL): Guided by the Dual Process Model of Coping with bereavement. *Death Studies*, 31(6), 505-535. doi:10.1080/07481180701356761
- Caserta M.S., Lund D., Utz, R., & de Vries, B. (2009). Stress related growth among the recently bereaved. *Aging & Mental Health*, 13(3), 463-476. doi:10.1080/13607860802534641

- Christ, G.H., Siegel, K., Christ, A.E. (2002) Adolescent grief: “It never really hit me... until it actually happened.” *The Journal of the American Medical Association*, 22(10), 1269-1278. doi:10.1001/jama.288.10.1269
- Cook, A.S., & Oltjenbruns, K. (1998). Dying and grieving: life span and family perspectives. Fort Worth: Harcourt Brace College.
- Costa, P.T., & McCrae, R.R. (1992). NEO PI-R professional manual. Odessa, FL: Psychological Assessment Resources.
- Cousins, C., Servaty-Seib, H.L., & Lockman, J. (2017). College student adjustment and coping: Bereaved and nonbereaved students. *OMEGA- Journal of Death and Dying*, 0(0), 1–24. doi:10.1177/0030222815598911
- Cox, B.E., Dean, J.G., & Kowalski, R. (2015). Hidden trauma, quiet drama: The prominence and consequence of Complicated Grief among college students. *Journal of College Student Development*, 56(3), 280–285. doi:10.1353/csd.2015.0030
- Coyne, J.C., & Racioppo, M.W. (2000). Never the twain shall meet? Closing the gap between coping research and clinical intervention research. *American Psychologist*, 55(6), 655-664. doi:10.1037/0003-066X.55.6.655
- Delespaulx, E., Ryckebosch-Dayez, A., Heeren, A., & Zech, E. (2013). Attachment and severity of grief: The mediating role of negative appraisal and inflexible coping. *OMEGA — Journal of Death and Dying*, 67(3), 269-289. doi: 10.2190/OM.67.3.b
- Derogatis, L.R., Lipman, R.S., & Covi, L. (1973). SCL-90: An outpatient psychiatric rating scale- preliminary report. *Psychopharmacol. Bull.* 9, 13-28.
- Deutsch, H. (1937). Absence of grief. *Psychoanalytic Quarterly*, 6, 12-22.
- Dick, D.M., Nasim, A., Edwards, A.C., Salvatore, J., Cho, S.B., Adkins, A., Meyers, J., Yan, J., Cooke, M., Clifford, J., Goyal, N., Halberstadt, L., Ailstock, K., Neale, Z., Oplaesky, J., Hancock, L., Donovan, K.K., Sun, C., Riley, B., & Kendler, K.S. (2014). Spit for Science: Launching a longitudinal study of genetic and environmental influences on substance use and emotional health at a large US university. *Frontiers in Genetics (Behavioral and Psychiatric Genetics)*, 5, 1-12. doi: 10.3389/fgene.2014.00047
- Fajgenbaum, D., Chesson, B., & Lanzi, R. G. (2012). Building a network of grief support on college campuses : A national grassroots initiative. *Journal of College Student Psychology*, 26, 99–120. doi:10.1080/87568225.2012.659159
- Folkman, S. (2001). Revised coping theory and the process of bereavement. In M. Stroebe, R. Hansson, W. Stroebe, and, H. Schut, (Eds.) *Handbook of Bereavement Research: Consequences, Coping, and Care* (pp. 563-584). Washington, D.C.: American Psychological Association.

- Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, 4, 26-42.
- Gray, M.J., Litz, B.T., Hsu, J.L., & Lombardo, T.W. (2004) Psychometric properties of the life events checklist. *Assessment*, 11, 330-341. doi:10.1177/1073191104269954
- Harper, M., O'Connor, R.C., & O'Carroll, R.E. (2015). The relative importance of avoidance and restoration-oriented stressors for grief and depression in bereaved parents. *Psychol Health Med*, 20(8), 906-15. doi:10.1080/13548506.2014.990908.
- Harris, P.A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J.G. (2009). Research electronic data capture (REDCap) – A metadata-driven methodology and work flow process for providing translational research informatics support. *J. Biomed. Inform*, 42, 377–381. doi:10.1016/j.jbi.2008.08.010
- Hays, R.D., Sherbourne, C.D., and Mazel, R. (1995). *User's Manual for the Medical Outcomes Study (MOS) Core Measures of Health Related Quality of Life*. Santa Monica, CA: RAND Corporation.
- Herberman Mash, H. B., Fullerton, C. S., Shear, M. K., & Ursano, R. J. (2014). Complicated grief and depression in young adults personality and relationship quality. *The Journal of Nervous and Mental Disease*, 202(7), 539–543. doi:10.1097/NMD.0000000000000155
- Holland, J., & Neimeyer, R. (2010). An examination of the stage theory of grief among individuals bereaved by natural and violent causes: A meaning oriented contribution. *Omega: Journal of Death and Dying*, 61, 103-120. doi: 10.2190/OM.61.2.b
- Holmes, T., & Rahe, R. (1967) The social readjustment scale. *Journal of Psychosomatic Research*, 11, 213-218.
- John, O. P., & Srivastava, S. (1999). The Big-Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (Vol. 2, pp. 102–138). New York: Guilford Press.
- Johnson, C.M. (2014). The loss of friends to homicide and the implications for the identity development of urban African American teen girls. *Clin Soc Work J*, 42(27). doi:10.1007/s10615-012-0425-y
- Jordan, A.H., & Litz, B.T. (2014). Prolonged Grief Disorder: Diagnostic, assessment, and treatment considerations. *Professional Psychology: Research and Practice*, 45(3), 180-187. doi:10.1037/a0036836
- Kaltman, S., & Bonanno, G.A. (2003). Trauma and bereavement: Examining the impact of sudden and violent deaths. *Journal of Anxiety Disorders*, 17(2), 131-147. doi:10.1016/S0887-6185(02)00184-6

- Koorevaar, A.M.L., Comijs, H.C., Dhondt, A.D.F., van Marwijk, H.W.J., van Der Mast, R.C., Naarding, P., Oude Voshaar, R.C., Stek, M.L. (2013). Big Five personality and depression diagnosis, severity and age of onset in older adults. *Journal of Affective Disorders*, 151(1), 178-185. doi: 10.1016/j.jad.2013.05.075
- Kristensen, P., Weisæth, L., & Heir, T., (2012). Bereavement and mental health after sudden and violent losses: a review. *Psychiatry*, 75(1), 76-97. doi: 10.1521/psyc.2012.75.1.76.
- Kübler-Ross, E. (1969) *On Death and Dying*, Routledge, ISBN 0-415-04015-9
- Lazarus, R., and Folkman, S. (1984). *Stress, Appraisal, and Coping*. New York, NY: Springer Publishing Company.
- Maciejewski, P.K., Zhang, B., Block, S.D., Prigerson, H.G. (2007). An empirical examination of the stage theory of grief. *JAMA*, 297(7), 716-723. doi:10.1001/jama.297.7.716.
- Mattanah, J. F., Ayers, J. F., Brand, B. L., Brooks, L. J., Quimby, J. L., & McNary, S. W. (2010). A social support intervention to ease the college transition: Exploring main effects and moderators. *Journal of College Student Development*, 51(1), 93–108. doi:10.1353/csd.0.0116
- Middleton, W., Raphael, B., Burnett, P., & Martinek, N. (1997) Psychological distress and bereavement. *The Journal of Nervous and Mental Disease*, 185(7), 447-53.
- Meuser, T. M., & Marwit, S. J. (2000). An integrative model of personality, coping, and appraisal for the prediction of grief involvement in adults. *OEMGA*, 40(2), 375–393. doi: 10.2190/P6BM-QU6C-6XY9-BNUM
- Murphy, S., Lohan, J., Braun, T., Johnson, L., & Cain, K., Beaton, R.D., & Baugher, R. (1999). Parents' health, healthcare utilization, and health behaviors following the violent deaths of their 12- to 28-year-old children: A prospective longitudinal analysis. *Death Studies*, 23, 589-616. doi:10.1080/074811899200795
- Otonari, J., Nagano, J., Morita, M., Budhathoki, S., Tashiro, N., Toyomura, K., . . . Takayanagi, R. (2012). Neuroticism and extraversion personality traits, health behaviours, and subjective well-being: The Fukuoka Study (Japan). *Quality of Life Research*, 21(10), 1847-1855. doi:10.1007/s11136-011-0098-y
- Pai, M., & Carr, D. (2010). Do personality traits moderate the effect of late-life spousal loss on psychological distress? *Journal of Health and Social Behavior*, 51(2), 183-99.
- Parikh, S., & Servaty-Seib, H. (2013). College students' beliefs about supporting a grieving peer. *Death Studies*, 37(7), 653-669. doi:10.1080/07481187.2012.684834

- Park, C.L. (2010). Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin*, 136(2), 257-301. doi: 10.1037/a0018301
- Parkes, C.M. (1983). *Bereavement: Studies of grief in adult life*. New York: Routledge.
- Parkes, C. M., Benjamin, B., & Fitzgerald, R. G. (1969). Broken heart: A statistical study of increased mortality among widowers. *British Medical Journal*, 1, 740–743. doi:10.1136/bmj.1.5646.740
- Penman, E. L., Breen, L. J., Hewitt, L. Y., & Prigerson, H. G. (2014). Public attitudes about normal and pathological grief public attitudes about normal and pathological grief. *Death Studies*, 38(8), 510–516. doi:10.1080/07481187.2013.873839
- Prigerson H., Silverman G.K., Jacobs S., Maciejewski P., Kasl S.V., & Rosenheck R. (2001). Traumatic grief, disability and the underutilization of health services: A preliminary look. *Primary Psychiatry*, 8, 61–69.
- Richardson, V.E. (2006). A Dual Process Model of grief counseling, *Journal of Gerontological Social Work*, (48)3-4, 311-329. doi:10.1300/J083v48n03_03
- Robinson, T., & Marwit, S. J. (2006). An investigation of the relationship of personality, coping, and grief intensity among bereaved mothers. *Death Studies*, 30(7), 677–696. doi:10.1080/07481180600776093
- Rogers, M., Hansen, N., Levy, B., Tate, D., & Sikkema, K. (2005). Optimism and coping with loss in bereaved HIV-infected men and women. *Journal of Social & Clinical Psychology*, 24, 341-360. doi:10.1521/jscp.24.3.341.65619
- Sarason, I.G., Sarason, B.R., & Shearin, E.N. (1986). Social support as an individual difference variable: Its stability, origins, and relational aspects. *Journal of Personality and Social Psychology*, 50(4), 845-855. doi:10.1037/0022-3514.50.4.845
- Schnider, K., Elhai, J., & Gray, M. (2007). Coping style use predicts posttraumatic stress and complicated grief symptom severity among college students reporting a traumatic loss. *Journal of Counseling Psychology*, 54, 344-350. doi: 10.1037/0022-0167.54.3.344
- Schultz, L. E. (2007). The influence of maternal loss on young women's experience of identity development in emerging adulthood. *Death Studies*, 31(1), 17-43. doi:10.1080/07481180600925401
- Servaty-Seib, H. L., & Hamilton, L. A. (2006a). Educational Performance and Persistence of Bereaved College Students. *Journal of College Student Development*, 47(2), 225–234. doi:10.1353/csd.2006.0024

- Servaty-Seib, H. L., & Hamilton, L. A. (2006b, March). Bereaved college students: Academic performance and retention. Paper presented at the annual meeting of the American College Personnel Association, Indianapolis, IN.
- Servaty-Seib, H. L., & Taub, D. J. (2010). Bereavement and college students: The role of counseling psychology. *The Counseling Psychologist*, 38(7), 947–975. doi:10.1177/0011000010366485
- Smith-McNally, R. D. (2014). Psychological sense of community and social support among college students who experience grief (Order No. 3641404). Available from ProQuest Dissertations & Theses Global. (1629023272). Retrieved from <http://proxy.library.vcu.edu/login?url=http://search.proquest.com.proxy.library.vcu.edu/ddocvi/1629023272?accountid=14780>
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S Leinhardt (Ed.), *Sociological Methodology 1982* (pp. 290-312). Washington, DC: American Sociological Association.
- Stroebe, M., Schut, H., & Stroebe, W. (2007). Health outcomes of bereavement. *The Lancet*, 370(9603), 1960-1973. doi:10.1016/S0140-6736(07)61816-9
- Stroebe, M. S., Folkman, S., Hansson, R. O., & Schut, H. (2006). The prediction of bereavement outcome: Development of an integrative risk factor framework. *Social Science & Medicine*, 63(9), 2440–2451. doi:10.1016/j.socscimed.2006.06.012
- Introduction: Concepts and issues in contemporary research on bereavement. Stroebe, Margaret S. (Ed); Hansson, Robert O. (Ed); Stroebe, Wolfgang (Ed); Schut, Henk (Ed). (2001). *Handbook of bereavement research: Consequences, coping, and care* (pp. 3-22). Washington, DC, US: American Psychological Association, xv, 814. doi:10.1037/10436-031
- Stroebe, M. S., & Schut, H. (1999). The Dual Process Model of Coping with bereavement: Rationale and description. *Death Studies*, 23(3), 197–224. doi:10.1080/074811899201046
- Stroebe, W., Zech, E., Stroebe, M. S., & Abakoumkin, G. (2005). Does social support help in bereavement? *Journal of Social and Clinical Psychology*, 24(7), 1030–1050. doi:10.1521/jscp.2005.24.7.1030
- Thompson L.W., Breckenridge J.N., Gallagher D., Peterson J.A. (1984). Effects of bereavement on self-perceptions of physical health in elderly widows and widowers. *Journal of Gerontology*, 39, 309–14.
- van der Houwen, K., Stroebe, M., Schut, H., Stroebe, W., & Bout, J. Van Den. (2010). Social science & medicine mediating processes in bereavement : The role of rumination,

- threatening grief interpretations, and deliberate grief avoidance. *Social Science & Medicine*, 71(9), 1669–1676. doi:10.1016/j.socscimed.2010.06.047
- Weber, K., Giannakopoulos, P., Bacchetta, J., Quast, S., Herrmann, F., Delaloye, C., . . . Canuto, A. (2012). Personality traits are associated with acute major depression across the age spectrum. *Aging & Mental Health*, 16(4), 472-480. doi: 10.1080/13607863.2011.630375
- Worden, J. (1982). *Grief counseling and grief therapy*. New York: Springer Publishing Company
- Worden, J. (1991). *Grief counseling and grief therapy: A Handbook for the Mental Health Practitioner*. New York: Springer Publishing Company.
- Wortman, C., and Boerner, S. (2007). Beyond the Myths of Coping with Loss: Prevailing Assumptions versus Scientific Evidence. In H. Friedman, and R. Silver (Eds.), *Foundations of Health Psychology*. New York: Oxford University Press.
- Wortman, C., & Silver, R. (1989). The myths of coping with loss. *Journal of Consulting and Clinical Psychology*, 57(3), 349-357.
- Wortmann, J.H., & Park, C.L. (2008) Religion and spirituality in adjustment following bereavement: An integrative review, *Death Studies*, 32(8), 703-736, doi:10.1080/07481180802289507

Appendix

Demographics Questionnaire

Age: _____

- Sex: ☐ Male
☐ Female
☐ I choose not to answer

Which one of these groups' best describes you?

- ☐ American Indian/Native American
- ☐ Asian
- ☐ African American/Black
- ☐ Hispanic/Latino
- ☐ More than one race
- ☐ Native Hawaiian/Pacific Islander
- ☐ Unknown/I choose not to answer
- ☐ White

The Big Five Inventory (BFI; John & Srivastava, 1999)

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please select a number next to each statement to indicate the extent to which you agree or disagree with that statement.

Disagree strongly 1	Disagree a little 2	Neither agree nor disagree 3	Agree a little 4	Agree Strongly 5
---------------------------	---------------------------	------------------------------------	------------------------	------------------------

I see Myself as Someone Who...

1. Is talkative (**Extraversion**)
2. Does a thorough job (**Conscientiousness**)
3. Is original, comes up with new ideas (**Openness**)
4. Is helpful and unselfish with others (**Agreeableness**)
5. Is relaxed, handles stress well (**Neuroticism**)
6. Is a reliable worker (**Conscientiousness**)
7. Worries a lot (**Neuroticism**)
8. Has an active imagination (**Openness**)
9. Tends to be quiet (**Extraversion**)
10. Is emotionally stable, not easily upset (**Neuroticism**)
11. Values artistic, aesthetic experiences (**Openness**)
12. Is considerate and kind to almost everyone (**Agreeableness**)
13. Does things efficiently (**Conscientiousness**)
14. Is outgoing, sociable (**Extraversion**)
15. Is sometimes rude to others (**Agreeableness**)

Social Support Survey of the RAND Medical Outcomes Study (Hays et al., 1995)

How often was someone in your life was able to serve in these supportive roles in the past 12 months?

None of the time	Some of the time	Most of the time	All of the time	I don't know
0	1	2	3	MD

1. How often was someone available to give good advice about a crisis?
2. How often was someone available to get together with for relaxation?
3. How often was someone available to confide in or talk about your problems?

Restoration-Oriented Stressors as Measured by Life Events Checklist (Gray et al., 2004)

Have you had any of these other events occur in the past 12 months?

Yes
1

No
0

1. Major financial problems?
2. Serious housing problems?
3. Serious difficulties at school?

The Participation in Activities Scale (Dick et al., 2014)

How often did you participate in the follow activities in the past 12 months?

Never 1	Rarely 2	Sometimes 3	Often 4
------------	-------------	----------------	------------

1. How often do you participate in organized sports activities, such as VCU intramural sports, club sports, etc.?
2. How often do you participate in fraternity/sorority parties or events?
3. How often do you participate in school activities such as student government, professional or service fraternities (not including social fraternities/sororities), or other student interest organizations?
4. How often do you participate in community activities, such as volunteer organizations or shared interest groups (e.g., the Sierra Club, as a mentor for Big Brothers Big Sisters)?
5. How often do you participate in church-related activities (other than going to worship services)?

SCL-90 (Derogatis et al., 1973)

The next questions ask about some problems and feelings which people sometimes have. Please give the answer which best describes how much discomfort that problem has caused you during the last 30 days, including today.

Not at all	A little bit	Moderately	Quite a bit	Extremely
1	2	3	4	5

1. Nervousness or shakiness inside.
2. Suddenly scared for no reason.
3. Feeling blue.
4. Worrying too much about things.
5. Feeling no interest in things.
6. Feeling fearful.
7. Feeling hopeless about the future.
8. Spells of terror or panic

Vita

Farah Joyce Aslanzadeh was born on September 10, 1991 in Farmington, Connecticut and is an American citizen. She graduated from Simsbury Public High School in Simsbury, Connecticut in 2009. She received her Bachelor of Science in Psychology from Northeastern University, Boston, Massachusetts in 2013. Then, she worked as a research assistant at the Olin Neuropsychiatric Research Center in Hartford, Connecticut before transitioning to graduate school in 2015. She is pursuing a Doctor of Philosophy degree in Clinical Psychology with a concentration in Behavioral Medicine at Virginia Commonwealth University in Richmond, Virginia.