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## Reactivity, Coping, and Adjustment after Bereavement

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Reactivity, Coping, and Adjustment after Bereavement

James A. Henrie

Dissertation submitted to the  
Eberly College of Arts & Sciences  
at West Virginia University  
in partial fulfillment of the requirements  
for the degree of

Doctor of Philosophy  
in  
Psychology

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2013

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## Reactivity, Coping, and Adjustment after Bereavement

### ABSTRACT

James A. Henrie

Despite the relatively common occurrence of bereavement, or experiencing the death of a loved one, there is considerable variability in individuals' responses to that experience. In the present study, individuals' responses to bereavement were investigated using the Stress and Coping Model (Lazarus, 1966; Lazarus & Cohen, 1977; Lazarus & Folkman, 1984) as a framework. Data from 436 individuals who were bereaved for 24 or fewer months prior to participation in the study were used to investigate associations between age, gender, emotion reactivity, coping, history of depression, grief, and adjustment (in terms of both positive and negative well-being) using a structural equation model ( $\chi^2(50) = 165.143, p < .001, \chi^2/df = 3.30, CFI = .939, GFI = .944, RMSEA = .075$ ). The model revealed that older participants, women, and those who reported using more avoidant/involuntary coping strategies reported more grief; that those who reported using more avoidant/involuntary coping, those who reported experiencing more grief, and those who reported having a history of depression reported more negative well-being; and that women, those who reported being less emotionally reactive, those who reported using fewer active engagement coping strategies, those who reported using more avoidant/involuntary coping, those who reported experiencing more grief, and those who reported having a history of depression reported lower positive well-being. Results are discussed in terms utility in identifying who may need more assistance after the death of a loved one and differences between the current sample and samples used in other bereavement research.

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## **Reactivity, Coping, and Adjustment after Bereavement**

### **Chapter 1: Problem Statement**

Bereavement, having experienced the death of a loved one (Stroebe, Hansson, Stroebe, & Schut, 2001), grieving, one's response to the death of a loved one (Bonanno & Kaltman, 2001), and mourning, culturally-defined expressions of grief (McGoldrick et al., 2004), have been frequent topics of study in psychological research. Much of this research has focused on the considerable variability in bereaved individuals' experience of grief and adjustment over time. For example, the symptoms experienced by bereaved individuals may include changes in physical, psychological, cognitive, and social functioning (Bonanno & Kaltman, 2001). Research has also shown that some individuals have initial grief responses but return to their baseline shortly thereafter, while others have extended grief responses, and still others show no signs of grief (e.g., Boerner, Wortman, & Bonanno, 2005). Thus, considerable research has focused on differentiating between those individuals who adjust well after the death of a loved one and those who do not. However, bereavement research may have placed undue emphasis on studying those with prolonged, or even "normal," grief experiences and more negative aspects of adjustment (e.g., depression), perhaps overlooking those who have adjusted well after the death of a loved one and more positive aspects of adjustment (e.g., positive affect). Including those who have adjusted well and studying positive aspects of adjustment may provide greater insight into the considerable variability in bereavement, and may point to potential factors or resources that could be used to improve well-being among all bereaved individuals.

### **Theories of Bereavement**

Most bereavement researchers and theorists have relied on the stress and coping model (Lazarus, 1966; Lazarus & Cohen, 1977; Lazarus & Folkman, 1984). According to this



approach, an individual's response to a potentially stressful experience, such as the death of a loved one, is the result of a transaction between the individual's appraisal of the event and the personal, social, and cultural resources the individual has at her or his disposal (Cohen, 1984; Lazarus & Folkman, 1984). Much of this research has focused on bereaved individuals' coping, as learning to understand and manage one's emotional experience and expression, and subsequent behavior, is an important developmental task (see Campos, Campos, & Barrett, 1989), with significant implications for coping with potentially traumatic experiences (e.g., Benoit, Bouthillier, Moss, Rousseau, & Bruent, 2010), including bereavement (Bonanno & Kaltman, 1999; Bonanno & Keltner, 1997).

Other theories have typically been used in tandem or as a complement to the stress and coping model. The dual process model (Stroebe & Schut, 1999) focuses ways in which different aspects of a stressful experience may pose different challenges. Specifically, the dual process model focuses on the differential effects of loss-oriented stressors, such as the feelings experienced in reference to the deceased loved one, and restoration-oriented stressors, which include challenges faced when adapting to one's post-bereavement day-to-day life, such as learning to cook or single parenthood. Additionally, attachment theory has been used to compliment the stress and coping model (e.g., Shear, 2010; Shear & Shair, 2005), focusing on either the dynamics of the bereaved individual's relationship with their deceased loved one or on bereaved individuals' relationships with others who may be a resource. Similarly, the buffering hypothesis of social support (Cohen & Wills, 1985) has been used to investigate ways in which social support may prevent or dampen bereaved individuals' response or facilitate better adjustment. Thus, these perspectives compliment the stress and coping model by emphasizing particular aspects of the experience, rather than challenging the model.

## Chapter 2: Literature Review

Bereavement is a relatively normative experience. Pearlman and Liberman (1979) found that approximately 5% of college students experience the death of a parent each year. Frost and Clayton (1977) reported that 6% of their middle-aged and older adult participants had experienced the death of a first-degree relative in the prior year. Similarly, Imboden, Canter, and Cluff (1963) found that 9% of their adult male participants experienced the death of a family member in the past year. Rates of bereavement are much higher when deaths of close friends were included, as Balk (1997) and Wrenn (1999) found that, among college students, 22-30% had experienced the death of a close friend or relative in the previous year, with the rate going up to 35-48% over the previous two years. Similarly, Henrie (2010) found that 52.9% of participants age 18 to 89 had experienced the death of a close friend or family member in the year prior to the study.

Despite the relatively common occurrence of bereavement, there is considerable variability in individuals' responses, including both physical and psychological threats to well-being (Bonanno & Kaltman, 2001; Hansson, Hayslip, & Stroebe, 2007). Regarding physical health, Buckley, McKinley, Tofler, and Bartrop (2010) identified elevated cardiovascular risks among the bereaved, especially in the weeks immediately after the death of a loved one. Similarly, Jones et al. (2010) found that, even up to ten years after the loss one's spouse, bereaved individuals had a 60-100% increase in incidence of circulatory diseases, such as hypertension and coronary artery disease, and a 10-20% increase in morbidity of general illnesses, including influenza and the common cold, when compared to same-age controls, and several researchers have found a decline in functioning in various aspects of the immune system (Goodkin et al., 2001; Hall & Irwin, 2001; Monk, Germain, & Reynolds, 2008). Ajdacic-Gross

et al. (2008) found elevated rates of suicide after the death of a spouse in a Swedish sample; rates were especially high during the first week and decreased dramatically afterwards, although the suicide rates among spousally-bereaved individuals never fell below the standardized mortality rates, suggesting that increased risk of suicide may be a long-term concern.

The majority of bereavement research has focused on psychological adjustment, typically focusing on negative aspects of well-being, such as symptoms of depression. Depressive symptoms are relatively common among bereaved individuals (Auster, Moutier, Lanouette, & Zisook, 2008). In fact, the DSM-IV-TR has a bereavement exception to a diagnosis of major depressive disorder (APA, 2000, p. 740-741), although many question this diagnostic exception (e.g., Karam et al., 2009; Zisook & Kendler, 2007). However, some research has shown that elevated symptoms of depression may be found in just half of bereaved individuals, or perhaps fewer (e.g., Boerner et al., 2005; Bonanno et al., 2002), suggesting that focusing on depressive symptoms does not provide a truly comprehensive view of adjustment after the death of a loved one.

Along with depressed affect, researchers have found elevated anxiety among bereaved individuals. Jacobs et al. (1990) found that 44% of spousally-bereaved individuals reported symptoms of an anxiety disorder during the first year after the death of the spouse and the prevalence rates of panic disorder and generalized anxiety disorder were higher than community prevalence rates. Ong et al. (2010) found a significant decline in general positive emotionality (positive affect and subjective well-being) over the first three years after the loss of one's spouse, especially for those with higher quality relationships with the deceased. Specifically, using MIDUS (Midlife in the United States) data, they found a .57 standard deviation decline from baseline (before the passing of one's spouse) to the second time of assessment (three years after

baseline; the length of time after the death of one's spouse varied), with no decline among the non-bereaved. This is of particular concern, as Boyraz and Efstathiou (2011) found that positive affect mediated the relation between self-focusing tendencies (reflection and rumination) and positive posttraumatic personal growth among bereaved individuals, suggesting that positive affect may be an important indicator of broader adjustment.

Not only is experiencing the death of a loved one associated with a variety of psychological and physical symptoms of grief, the duration of the symptoms varies widely. Research has found symptoms of grief weeks and months after the loss of a loved one (e.g., Ajdacic-Gross et al., 2008; Buckley et al., 2010), as well as at one year (e.g., Hensley, Slonimski, Uhlenhuth, & Clayton, 2009), at 18 months (e.g., Coifman & Bonanno, 2010), at three years (e.g., Ong, Fuller-Rowell, & Bonanno, 2010), at ten years (Jones, Bartrop, Forcier, & Penny, 2010), and even at 13 years (Bowling, 1994).

Some researchers (e.g., Boerner et al., 2005; Bonanno, 2004; Newson, Boelen, Hek, Hofman, & Tiemeier, 2011) have investigated trajectories in grief. While the number of trajectories varies, one could categorize the trajectories into three relatively distinct groups: (1) "normal" grief, which involves experiencing severe symptoms but typically returning to baseline with six months, though symptoms can last for perhaps two years before subsiding, (2) chronic or complicated grief, which involves persistently experiencing symptoms and can involve considerable impairment, and (3) resilience, which involves having little or no maladaptive response. While "normal" grievers may embody the stereotype of bereaved individuals, research suggests that they only comprise approximately 30% of bereaved individuals. Similarly, although research has focused on predictors of complicated grief and studied very long-term symptoms of grief (e.g., Bowling, 1994), only a small percentage (between 10% and 20%,

perhaps up to 25%) tend to experience this longer-term and more debilitating grief. This leaves approximately half of all bereaved individuals for the resilient trajectory, meaning resilience may actually be the norm.

The broader psychological construct of resilience refers to the ability to withstand or bounce back from stress or adversity (Bonanno, 2004; Deshields, Tibbs, Fan, & Taylor, 2006; Friborg, Barlaug, Martinussen, Rosenvinge, & Hjemdal, 2005; Norlander, Von Schedvin, & Archer, 2005). For an individual to be labeled as resilient, that individual must necessarily have had at least one stressful or potentially traumatic experience, and subsequently continued to function in a productive or typical manner. Among many other factors, research has shown that resilience is associated with better social skills, certain coping strategies (being highly affective vs. being self-destructive or lowly affective), and certain personality characteristics (e.g., extraversion and agreeableness; Friborg et al., 2005; Norlander et al., 2005). In terms of bereavement, if the use of the term resilient is correct, the use of certain coping strategies or the presence of certain skills or characteristics with which resilience is associated may account for differences in adjustment among bereaved individuals.

### **Considerations in the Assessment of Adjustment**

In addition to research suggesting that we may be misrepresenting grief when we focus on those who experience complicated grief, or even “normal” grief, bereavement research may have been too narrowly focused in terms of defining adjustment, as the majority has focused on depressed affect. Broader research on adjustment has distinguished between positive and negative well-being (Bradburn, 1969; Diener & Emmons, 1984; Watson & Tellegen, 1985). Considerable research has reinforced this perspective, as positive and negative well-being are separate but related constructs that together provide a more inclusive representation of well-

being. Several studies have investigated both positive and negative affect, generally finding that positive affect does not predict negative affect over time (e.g., Watson, 1988; Watson, Clark, & Tellegen, 1988). Retrospective research has also found that desirable life events tend to predict positive affect, while less desirable life events tend to predict negative affect, with little crossover (Stallings, Dunham, Gatz, Baker, & Bengtson, 1997). These results suggest that both positive and negative affect should be considered in studies of adjustment.

Others have argued, using broaden-and-build theory (Fredrickson, 1998), that positive affect, as opposed to negative affect, may actually be key, as positive affect predicts future increases in general well-being (Cohn, Fredrickson, Brown, Mikels, & Conway, 2009; Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Fredrickson & Joiner, 2002). In fact, specific ratios of positive to negative affect may be useful indicators of broader adjustment (Fredrickson & Losada, 2005). Thus, while experiencing the death of a loved one may be associated with more negative well-being (e.g., Auster et al., 2008), better post-bereavement adjustment may be associated with positive well-being (e.g., Boyraz & Efstathiou, 2011), meaning predictors of positive well-being may be key to understanding ways to improve well-being for all bereaved individuals.

Some have even argued that potentially traumatizing experiences may spur personal growth (Tedeschi & Calhoun, 1995, 1996, 2004). This perspective suggests that experiencing these events may shatter assumptions regarding how individuals will and should continue to live, perhaps causing people to search for meaning and develop new perspectives (e.g., Davis, Wohl, & Verberg, 2007; Kessler, 1987). Among bereaved individuals, research has found that experiencing the death of a loved one may result in increases in wisdom (Calhoun & Tedeschi, 1998; Kessler, 1987), compassion, and quality of relationships with living loved ones (Shanfield,

& Swain, 1984), as well as increases in appreciation of life and embracing values (Gerrish, Dyck, & Marsh, 2009), such as religion (Kessler, 1987). Several potential influences on growth have been proposed, including character strengths (Peterson, Park, Pole, D'Andrea, & Seligman, 2008), particular traits, such as personality, hope, and optimism (Gerrish et al., 2009), and emotion regulation (Znoj & Keller, 2002). Research has also shown that those who experience grief more intensely may be less likely to experience growth (Engelkemeyer & Marwit, 2008; Gamino, Sewell, & Easterling, 2000; Hogan & Schmidt, 2002), suggesting that influences on individuals' appraisals of grief may be important factors in adjustment and growth.

Given the individual variability in grief and the number of individuals who appear to be resilient, as well as possible growth, Hansson et al. (2007) and others (Allumbaugh & Hoyt, 1999; Bonanno & Mancini, 2006; Kato & Mann, 1999; Neimeyer, 2000) have concluded that current clinical interventions may not be as helpful for bereaved individuals as one might hope. If the use of the term resilience is correct for the approximately half of bereaved individuals who do not show signs of grief, the differences in adjustment may be due to more personal factors, such as the use of certain coping strategies or personality characteristics, which may undermine the efficacy of clinical interventions. This has led some (e.g., Bonanno, Papa, & O'Neill, 2001; Hansson et al., 2007) to argue that identifying predictors of adjustment may be one of the most important undertakings in bereavement research.

### **Factors Associated with Adjustment**

Considerable research has investigated factors associated with adjustment, including relationship factors, death-related factors, time of year, and time since death. Concerning relationships, there is evidence that grief is relatively similar across relations to the deceased, with the possible exception of those who have lost a child. Depressive symptoms are common

across relations (e.g., Jones et al., 2010; LaGrand, 1985; Lalive d'Épinay, Cavalli, & Guillet, 2009; van der Houwen et al., 2010), while bereaved parents may experience despair, detachment, and a loss of self-confidence (Hogan & Schmidt, 2002), as well as feelings of guilt, declines in general well-being, and physical distress (Rubin & Malkinson, 2001). Difficulty finding meaning in the child's death and posttraumatic stress reactions may also be common (Murphy, Johnson, & Lohan, 2003), with the loss of child being among the most difficult of traumatic experiences (Talbot, 2002).

Concerning death-related factors, individuals whose loved ones die suddenly and/or unexpectedly may be more likely to experience poorer adjustment (Piper, Ogrodniczuk, Joyce, & Weideman, 2011). The authors also suggest that having a loved one die in a particularly traumatic manner, such as homicide, may be a risk factor, with the suicidally-bereaved at greatest risk. The sudden and emotionally laden nature of these causes of death may make these experiences qualitatively different from other causes of death, making this a non-normative experience. Piper et al. (2011) also suggest that bereaved individuals' type of attachment with the deceased loved one may be associated with more grief. Compared to those with secure attachments, those with insecure attachments may have more emotional loneliness and symptoms of depression (van der Houwen et al., 2010), those with anxious and avoidant attachments may have more grief and symptoms of depression ( $r = .27-.34$ ; Meji, et al., 2007), and those who are fearfully avoidant, as opposed to dismissively avoidant, may experience poorer adjustment (Fraley & Bonanno, 2004).

Finally, some research suggests that the time of year and the length of bereavement may influence poorer adjustment. Research suggests that the anniversary of a loved one's death (e.g., Chow, 2010; Rando, 1993; Renvoize & Jain, 1986) and holidays (e.g., Cook, 1983; Loring,



Smith, & Thomas, 1994) can be very distressing times. Research has also identified elevated risk of suicide (Ajdacic-Gross et al., 2008), health conditions (Buckley et al., 2010), and anxiety and depression (Chow, 2010) in the weeks and months immediately after the death of a loved one. These risks tend to decline after those first few weeks or months (e.g., Chow, 2010), even though they might not return to “normal” levels (Ajdacic-Gross et al., 2008).

However, length of bereavement may be less important than differences between bereaved individuals, such as coping or personality characteristics. As mentioned earlier, there appear to be trajectories among bereaved individuals, such that some are resilient, others have a short response and then return to “normal,” and still others persistently experience symptoms (e.g., Boerner et al., 2005; Bonanno, 2004; Bonanno et al., 2002). These trajectories suggest that time is actually only a factor for the “normally” grieving group (approximately 30% of bereaved individuals), meaning that correlations between time and adjustment are likely to be small in magnitude, and differences between those in each of the trajectories, such as availability of coping resources and personality characteristics, may be more important than time itself.

The majority of research investigating factors associated with adjustment has focused on available resources. Social support is one resource that has been found to be important (Piper et al., 2011). Research has found that, among bereaved individuals, social support may be a buffer against depressive symptoms (e.g., Lund, Caserta, Utz, & DeVries, 2010) and may assist in the maintenance of positive mood (e.g., van der Houwen et al., 2010).

Research also suggests that one’s religiousness/spirituality may be a resource. In reviews of the religiousness/spirituality and bereavement literature, Wortmann and Park (2008) and Becker et al. (2007) found that associations between various conceptualizations of religiousness and/or spirituality and adjustment after the death of a loved one were generally positive. More

specifically, the reviews highlighted that among bereaved samples, while religious affiliation was generally not associated with better outcomes, religious attendance (fewer depressive symptoms, less anxiety, and more optimism and positive affect), self-rated religiousness (less unhappiness, fewer health problems, more positive affect, and better coping), religious beliefs (fewer symptoms of depression), intrinsic religiousness (fewer symptoms of depression), religious coping (less anxiety and grief, and fewer symptoms of PTSD and depression), and spirituality (less grief, fewer symptoms of depression, and more self-esteem and personal growth) were all associated with better adjustment. Interestingly, research on extrinsic religiosity (more personal growth, but more grief and more symptoms of depression) and religious social support (higher quality life, but more negative affect and less positive affect) suggests rather complicated associations between religiousness and adjustment among bereaved individuals.

While little research has explicitly studied gratitude among bereaved individuals, recent research suggests that gratitude may be associated with better adjustment, as gratitude is generally associated with more positive emotionality and less negative emotionality (e.g., Wood, Froh & Geraghty, 2010). Broaden-and-build theory (Fredrickson, 1998) argues that experiencing positive emotionality may lead to more expansive, creative, or broad thinking, which in turn leads individuals to accrue personal resources, including better coping strategies or more support. Supporting that perspective, Lambert, Fincham, and Stillman (2012), through eight studies, found that gratitude, through positive reframing and positive emotion, was associated with fewer depressive symptoms as well. Using longitudinal methods, Wood, Maltby, Gillett, Linley, and Joseph (2008) found that gratitude led directly to lower stress and fewer depressive symptoms. In an experimental design, Toepfer, Cichy, and Peters (2012) found that writing letters of gratitude increased happiness and life satisfaction, while decreasing depressive symptoms. Similarly,

Krause (2009) found that financial difficulties were associated with more depressive symptoms among older adults expressing less gratitude, but not among older adults who expressed more gratitude, and that religiousness may be associated with more gratitude over time. Finally, Vernon (2012) found that those who reported posttrauma gratitude also reported fewer symptoms of posttraumatic stress disorder. Thus, given its relation to other measures of psychological well-being, research should explore whether gratitude may be associated with better adjustment among bereaved individuals.

### **Age and Gender Differences in Adjustment**

Age and gender differences in adjustment have been found among bereaved individuals. Concerning age, bereaved younger adults tend to report more depressive symptoms than bereaved older adults (Glick, Weiss, & Parkes, 1974; Hurwicz, Durham, Boyd-Davis, Gatz, & Bengtson, 1992; Lichtenstein, Gatz, Pedersen, Berg, & McClearn, 1996; Lopata, 1973). One might argue that this is counterintuitive given that older adults have more time to develop and strengthen attachments with their loved ones; however, one might also argue that older adults' life experiences (e.g., experiencing more deaths, and thus perhaps seeing death as more normative) may influence grief responses.

Concerning gender differences, researchers have found a few contrasting trends. Among parents who had experienced the death of a child, mothers have reported more depression (Dyregrov & Matthiesen, 1991), anxiety (e.g., Dyregrov & Matthiesen, 1987a; Dyregrov & Matthiesen, 1987b; Lang, Gottlieb, & Amsel, 1996; Moriarty, Carroll, & Controneo, 1996), and depersonalization (Bohannon, 1990; Fish, 1986; Lang & Gottlieb, 1993; Smith & Borgers, 1988). It is possible that this experience would be especially hard for women due to the particularly non-normative experience in the modern era of a child's death. Moss, Resch, and

Moss (1997) also found that women reported more emotional distress among middle-aged parentally-bereaved individuals. In contrast, among spousally-bereaved individuals, men appear to adjust more poorly. Although women generally report more depressive symptoms than men, widowers report more depressive symptoms than widows (Radloff, 1975). Additionally, differences in depression between non-bereaved still-married individuals and spousally-bereaved individuals were greater among men (Lee, Willetts, & Seccombe, 1998; Umberson, Wortman, & Kessler, 1992), widowers may recover more slowly than widows (Glick et al., 1974), and widowers were at five times greater risk of suicide than married men, whereas there were almost no differences for women (Li, 1995). Siegel and Kuykendall (1990) also found more depressive symptoms among men who had lost a family member (not a spouse), but not among women.

However, these age and gender differences in adjustment may be due to age- and gender-related differences in coping. Researchers have conceptualized coping in multiple ways. In research among adults, coping has typically been conceptualized in terms of problem-focused coping, which involves attempting to lessen or remove a stressor, emotion-focused coping, which involves attempting to control responses to the stressor, and avoidant coping, or attempting to escape from the stressor (Papalia, Olds, & Feldman, 2009), based on the stress and coping model (Lazarus, 1966; Lazarus & Cohen, 1977; Lazarus & Folkman, 1984).

Coping has also been conceptualized in terms of engagement and disengagement (Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000). Although this approach has typically been used in research among children and adolescents (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001), it has been successfully used among adults recently (e.g., Rhoades et al., 2007; Wadsworth et al., 2004a; Wadsworth, Raviv, Compas, & Connor-Smith, 2005; Wadsworth, Raviv, Santiago, & Etter, 2011; Wadsworth, Santiago, & Einhorn,

2009). This approach to coping emphasizes engagement with and disengagement from stressors, as well as voluntary and involuntary responses (Connor-Smith et al., 2000). More specifically, voluntary responses include primary control engagement, which involves directly affecting the stressor or one's responses to it through strategies like problem solving or emotional regulation, secondary control engagement, which involves adapting to the situation via strategies such as acceptance or cognitive restructuring, and disengagement, which involves actively avoiding the situation (Carver & Connor-Smith, 2010; Compas et al., 2001; Connor-Smith et al., 2000; Rhoades et al., 2007; Rothbaum, Weisz, & Snyder, 1982; Rudolph, Dennig, & Weisz, 1995; Weisz, 1990). Involuntary strategies include involuntary engagement, which include uncontrolled physiological responses, impulsive action, and rumination, and involuntary disengagement, which involves uncontrolled avoidance of the situation, such as feeling numb.

Research from these approaches suggests relatively similar patterns of coping across age and gender. Using the Lazarus and Folkman (1984) approach, research suggests that women and older participants are more likely to use emotion-focused strategies (e.g., Blanchard-Fields, Chen, & Norris, 1997; de Ridder, 2000; Folkman, Lazarus, Pimley, & Novacek, 1987), whereas men and younger participants are more likely to use avoidant coping (e.g., Blanchard-Fields, Sulsky, & Robinson-Whelen, 1991; Felton & Revenson, 1987; Krohne, 1993; Nolen-Hoeksema, Parker, & Larson, 1994). Using the engagement-disengagement approach, research has shown that older participants (Wadsworth et al., 2011) and women (Wadsworth et al., 2004a) are more likely to use voluntary engagement strategies, whereas younger participants (Wadsworth et al., 2011) and men (Wadsworth et al., 2004a) tend to have more involuntary responses and tend to use more disengagement strategies, which are typically less effective (Carver & Connor-Smith,

2010). These age and gender differences in coping may explain the age and gender differences in adjustment after the death of a loved one.

Similar to coping, age- and gender-related differences in emotionality may influence individuals' adjustment after the death of a loved one. Research has found that women report experiencing and expressing more emotion, especially negative emotion (anger, sadness, and fear; Lucas & Gohm, 2000), which may be due to socialization of culturally defined gender roles (e.g., Brody, 1993; Fischer & Manstead, 2000). Additionally, compared to men, women may perceive stressors as being more severe (e.g., Tamres, Janicki, & Helgeson, 2002).

MIDUS (Midlife in the United States) research suggests that, although women report more negative emotion across adulthood, there is a long-term gradual decline in negative emotions from midlife to older adulthood in both women and men, with increases in positive emotions from later midlife into older adulthood (Mroczek, 2004). Similar trends have been found by a number of other researchers (e.g., Carstensen, Pasupathi, Mayr, & Nesselrode, 2000; Gross et al., 1997; Mroczek & Kolarz, 1998), perhaps due to better emotion regulation with age (e.g., Gross et al., 1997; Labouvie-Vief, Hakim-Larson, DeVoe, & Schoeberlein, 1989; Lachman, 2004; Lawton, Kleban, & Dean, 1993).

Researchers studying socioemotional selectivity theory (SST; Carstensen, 1993) have examined changes in poignancy, or mixed emotionality, over the life span (Ernser-Hershfield, Mikels, Sullivan, & Carstensen, 2008). Broadly speaking, SST argues that, due to increased awareness of time constraints, individuals will become more focused on emotion-related goals (Carstensen, 1993; Carstensen, 1995; Carstensen, 1998), which will result in increased pursuit of meaning in experiences, even in experiences involving conflict or pain. Thus, SST argues that one's emotional experience will become more complex with age, resulting in more mixed

emotions. Research suggests that thinking about a meaningful ending with an experience is associated with poignancy (Ersner-Hershfield, Mikels, Sullivan, & Carstensen, 2008) and that poignancy is found more in older adults (Carstensen et al., 2000; Ernser-Hershfield et al., 2008; Ong & Bergman, 2004). Research has also found that poignancy may occur less among older adults who use emotion regulation strategies (Zhang, Ersner-Hershfield, & Fung, 2010), and that appropriately regulated emotional expression is associated with better adjustment among bereaved individuals (e.g., Bonanno & Keltner, 1997; Coifman & Bonanno, 2010).

Research suggests that those who are highly emotionally reactive view the same experiences as more stressful or negative than do less reactive individuals (e.g., Gross, Sutton, & Katelaar, 1998; Gunthert, Cohen & Armelli, 1999; Hemenover & Dienstbier, 1996; Suls & Martin, 2005) and that more reactive individuals underestimate available coping resources (e.g., Gunthert et al., 1999). Thus, one's emotional reactivity, a trait on which there appear to be age and gender differences, may influence one's adjustment after bereavement.

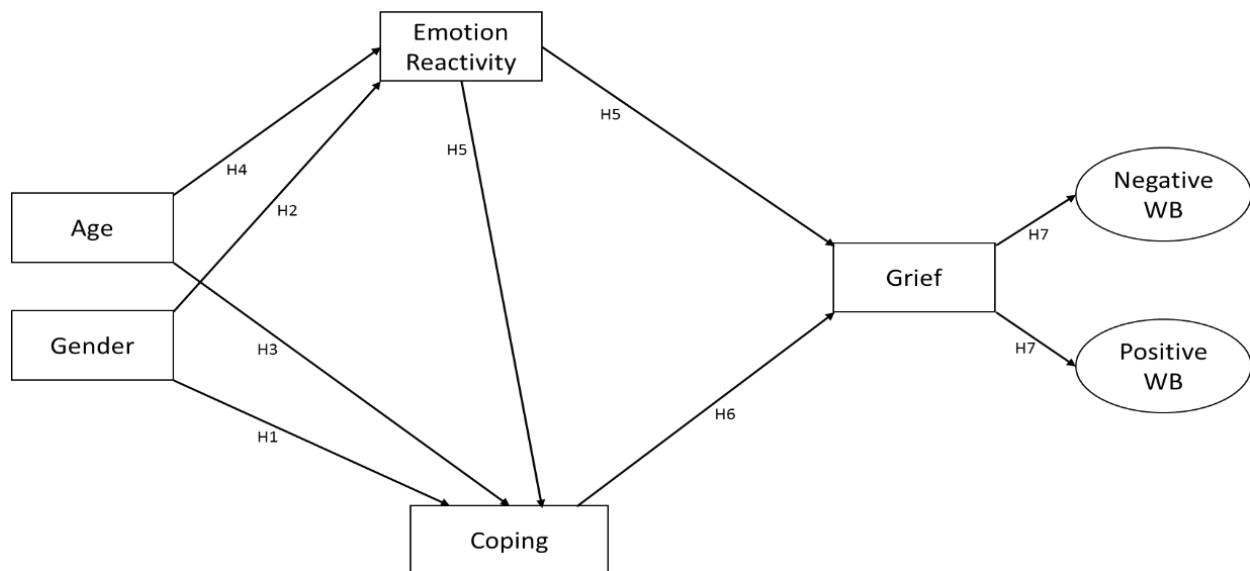
### **Summary of Gaps in the Current Literature**

Although bereavement is normative, there is considerable variability in adjustment (e.g., Hansson et al., 2007). While many bereaved individuals experience either short-lived or prolonged grief, approximately half of bereaved individuals do not have maladaptive responses after the experience (e.g., Boerner et al., 2005). Thus, attempting to identify factors that may differentiate between poorer and better adjustment (e.g., coping and emotion reactivity) has become the major focus of bereavement research. However, much of bereavement research has focused on those with complicated or "normal" grief and more negative aspects of adjustment (e.g., depression), perhaps overlooking those who have adjusted well after the death of a loved one and more positive aspects of adjustment (e.g., positive affect). Studying those who have

adjusted well and including positive well-being in the assessment of adjustment may provide insight into factors or resources that could be used to improve well-being for all bereaved individuals, including those who do not adjust as well.

### Chapter 3: Specific Aims and Research Hypotheses

A conceptual model outlining the hypotheses in the current investigation can be found below. The study was designed to investigate whether particular factors (age, gender, and emotion reactivity) influence coping and appraisal of grief, and whether those subsequently influence bereaved individuals' adjustment (in terms of both positive and negative well-being). The parameters in the model are labeled such that the parameters correspond to subsequent specific hypotheses (e.g., H1 refers to Hypothesis 1).



*Specific Aim 1: To investigate age and gender differences in coping and emotion reactivity among bereaved individuals.*

**Hypothesis 1:** Based on findings in previous research (e.g., de Ridder, 2000; Wadsworth et al., 2004a), direct effects from gender to coping were expected, such that men would report more



avoidant/disengagement and involuntary responses than women, while women would report more active coping/voluntary engagement than men.

**Hypothesis 2:** Based on MIDUS research (Mroczek, 2004) and the emotion regulation and expression literature (e.g., Brody, 1993; Fischer & Manstead, 2000; Lucas & Gohm, 2000; Tamres, Janicki, & Helgeson, 2002), a direct effect was expected from gender to emotion reactivity, such that women would report more emotion reactivity.

**Hypothesis 3:** Based on findings in previous research (e.g., Blanchard-Fields et al., 1991; Wadsworth et al., 2011), direct effects from age to coping were expected, such that younger participants would report more avoidant/disengagement and involuntary responses than older participants, while older participants would report active coping/voluntary engagement than younger participants.

**Hypothesis 4:** Based on prior research showing age-related changes in emotionality (e.g., Carstensen et al., 2000; Ersner-Hershfield et al., 2008; Mroczek, 2004) and better emotion regulation with age (e.g., Gross et al., 1997; Labouvie-Vief et al., 1989; Lachman, 2004; Lawton et al., 1993; Orgeta, 2009; Phillips, Henry, Hosie, & Milne, 2008), a direct inverse effect was expected from age to emotion reactivity. That is, younger adults were expected to report greater emotion reactivity than older adults.

*Specific Aim 2: To investigate associations of emotion reactivity with coping, appraisal of grief, and well-being among bereaved individuals.*

**Hypothesis 5:** Based on previous research (e.g., Gunthert et al., 1999; Gross et al., 1999), direct effects were expected from emotion reactivity to coping and appraisal of grief. Specifically, greater emotion reactivity was expected to be associated with lower active coping/voluntary engagement, greater avoidant/disengagement and involuntary responses, and greater grief.

*Specific Aim 3: To investigate the association of coping with appraisal of grief among bereaved individuals.*

**Hypothesis 6:** Based on the stress and coping literature (Lazarus, 1966; Lazarus & Cohen, 1977; Lazarus & Folkman, 1984), prior applications of the stress and coping model (e.g., Patrick & Hayden, 1999; Pruchno, Patrick, & Burant, 1996), and research investigating associations between types of coping responses and adjustment (e.g., Carver & Connor-Smith, 2010), direct effects were expected from coping to appraisal of grief, such that more use of active coping/voluntary engagement would be associated with lower grief, while more use of avoidant/disengagement and involuntary response would be associated with greater grief.

*Specific Aim 4: To investigate associations between appraisal of grief and positive and negative well-being among bereaved individuals.*

**Hypothesis 7:** Based on literature showing grief's association with lower positive (e.g., Ong et al., 2010) and higher negative well-being (e.g., Auster et al., 2008), direct effects were expected from appraisal of grief to both positive and negative well-being. That is, it was expected that higher grief would be associated with higher negative well-being and lower positive well-being.

### **Exploratory Research Questions**

**Resilience.** Researchers have described bereaved individuals who adjust well as resilient (e.g., Bonanno et al., 2002), and previous research has linked personality traits to coping strategies and well-being outcomes (e.g., Friberg et al., 2005; Norlander et al., 2005). Thus, the associations between trait resilience, coping, appraisal of grief, and adjustment were examined.

**Gratitude.** Based on prior research suggesting that gratitude is associated with more positive emotionality, less negative emotionality (Lambert et al., 2012; McCullough, Emmons, & Tsang, 2002; Wood et al., 2010; Wood et al., 2008), and fewer symptoms of posttraumatic stress

(Vernon, 2012), it was possible that gratitude would be associated with grief, positive well-being, and negative well-being.

**Posttraumatic growth.** Researchers have argued that stressful life events may result in personal growth (Tedeschi & Calhoun, 1995; Tedeschi & Calhoun, 1996; Tedeschi & Calhoun, 2004), and bereaved individuals have reported growth in a number of domains (e.g., Calhoun & Tedeschi, 1998; Gerrish et al., 2009; Kessler 1987; Shanfield & Swain, 1984), suggesting that posttraumatic growth may be an indicator of adjustment. Thus, associations between posttraumatic growth, emotion reactivity, coping, grief, and adjustment were explored.

## **Chapter 4: Method**

### **Participants**

Data from 436 individuals who were bereaved for 24 or fewer months prior to participation in the study were used in the current investigation. Two years after the death of a loved one was chosen as the cutoff because it allowed adequate time for differentiation between those with “normal” grief and those with complicated grief. Although diagnostic criteria suggest six months would allow for differentiation, research suggests that some “normally” grieving individuals may not be expected to fully returned to baseline before two years have passed since the death of a loved one (Coifman & Bonanno, 2010).

Nine hundred eighty participants were initially recruited through Amazon’s Mechanical Turk. Participants received \$2 for their participation. Multiple methods were used to identify participants who were not taking an appropriate approach to answering the questions. Four questions were interspersed to assess whether participants were reading the questions (e.g., “For this question, please answer some or little of the time,” which was placed in the middle of the symptoms of depression scale), with 56 participants who did not appropriately answer at least

three of the four questions removed. Additionally, 26 participants did not complete a sufficient amount of the study to be used in analyses, and an additional participant showed clear response-setting (answering the first option to all questions). Of the remaining 897 participants, 42 participants indicated having never experienced the death of a loved one and 419 participants indicated that the most recent death of a loved one had occurred 25 or more months prior to participation in the study; these participants were directed to a parallel survey asking participants about their responses to a recent stressor. After removing the participants who were not usable for the present investigation, 436 participants remained.

Participants' ages ranged from 18 to 66 years ( $M = 31.20$ ,  $S.D. = 10.63$ ), and 55.6% of the participants were women. The sample was largely Caucasian (76.3%); 9.4% of participants were African American, 4.8% were Hispanic, and 7.3% were Asian-Pacific Islander. Slightly more than half of the participants reported being single, never married (56.1%), with 30.1% reporting being married, and 10.0% reporting being divorced. Concerning employment status, 52.2% were employed full-or- part-time, 19.2% were unemployed, 17.0% were students, and 7.3% were homemakers. A large majority of participants (82.4%) indicated having received at least some education beyond high school, with 37.2% of the sample indicating having a bachelor's degree, 9.4% indicating having a master's degree, and 1.7% indicating having a doctorate.

The average length of bereavement was 10.77 months ( $S.D. = 7.06$ ; range = 1 week to 24 months). Participants' relationship with the deceased varied widely, with the largest number reporting that the deceased was a grandparent (40.2%), followed by a friend (17.5%), a parent (16.1%), an aunt or uncle (10.6%), a sibling (5.3%), a cousin (3.2%), a spouse (2.3%), an parent-in-law (2.3%), a child (0.9%), a niece or nephew (0.9%), a non-married significant other (0.5%),

and a grandchild (0.2%). The causes of death included prolonged illness or “natural causes” (62.1%), sudden health conditions (e.g., heart attacks; 18.2%), accidents (10.6%), suicide (3.9%), alcohol- or drug-related causes (2.1%), murder (1.8%), medical procedures (0.9%), and unknown causes (0.5%). Approximately 11.3% of participants either had received or were receiving bereavement counseling, and 5.3% indicated participating in a community bereavement group. Eighteen percent (78 participants) indicated having experienced the death of multiple loved ones in the year prior to the study, with the majority indicating having experienced the death of two (52 participants) or three loved ones (22 participants). One participant indicated having experienced the death of six loved ones in the prior year. A MANOVA examining differences in each of the grief and each of the positive and negative well-being variables revealed that there were no significant differences between those who experienced the death of a single loved one and those who experienced the death of multiple loved ones ( $Wilks\ Lambda = .977, F(7, 409) = 1.35, p = .226, \eta_p^2 = .023$ ). Thus, those who experienced the death of multiple loved ones were kept in the analyses.

### **Materials and Measures**

Below are descriptions of each of the questionnaires and measures used in the current investigation. The questionnaires and measures can be found in Appendix A in the order in which they are discussed. For each of the scales, when missing data were encountered, individual mean substitution, where answered items on a scale are used to determine scores for missing items (Widaman, 2006), was used when possible. After checking to be sure that no particular item was more likely to be missed or skipped than any other item on each scale, if 70% or more of the items in the scale had been answered, an individual’s total scale score was determined

based on the items they did answer. If greater than 30% of the items on a scale had not been answered, pairwise deletion was used.

**Demographic variables.** Participants were asked for a variety of demographic information, including age, gender, ethnicity, highest level of education, marital status, employment status, and religious affiliation. Participants were also asked about the death of their loved one and their behavior since the death, including their relationship with the deceased individual, the approximate number of months since their death of the loved one, the cause of death, whether the death was anticipated, and whether they are seeking or have sought counseling services.

### **Well being**

*Affect.* Multiple measures were used to assess affect. Positive and negative affect were measured using the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) and seven supplemental low-arousal items from the Profile of Mood States (POMS; McNair, Lorr, & Droppelman, 1971). The PANAS is a 20-item scale on which participants indicate the extent to which they are experiencing particular feelings and emotions on five-point scale ranging from “very slightly or not at all” (1) to “extremely” (5). Half of the items correspond to positive affect, with the other half corresponding to negative affect. Higher scores on the positive affect and negative affect subscales indicate greater positive affect and negative affect, respectively. Previous studies have found that the positive affect subscale has a Cronbach’s alpha of .89, while the negative affect subscale has a Cronbach’s alpha of .85 (Crawford & Henry, 2004). Prior studies have also found that the subscales are moderately inversely correlated ( $r = -.30$ ). Crawford and Henry (2004) found measurement invariance by age group, education, and gender. The authors found that the same model that had the best fit for the entire sample (a total of

twenty emotions, with ten separate emotions contributing to the positive and negative affect latent constructs and the latent constructs covaried) was also the best fit for each group when using median splits for each demographic variable measured. Also, demonstrating construct, convergent, and discriminant validity, negative affect was positively correlated with depression ( $r = .44$  to  $.60$ ), anxiety ( $r = .60$  to  $.65$ ), and stress ( $r = .67$ ), while positive affect was inversely correlated with depression ( $r = -.48$  to  $-.52$ ), anxiety ( $r = -.30$  to  $-.31$ ), and stress ( $r = -.31$ ).

A major criticism of the PANAS is that its items focus high arousal aspects of affect (e.g., hostile or excited), perhaps missing relatively important low arousal feelings or states (e.g., relaxed or weary; Huelsman, Furr, & Nemanick, 2003). Thus, the items from the PANAS were supplemented with low arousal items from the POMS in order to include a wider spectrum of affective arousal. In the current study, both the positive affect scale (consisting of the ten PANAS items and the two POMS items;  $M = 31.86$ ,  $S.D. = 9.83$ ; range = 12 to 60; Cronbach's  $\alpha = .90$ ) and the negative affect scale (ten PANAS items and five POMS items;  $M = 26.04$ ,  $S.D. = 11.62$ ; range = 15 to 71; Cronbach's  $\alpha = .95$ ) demonstrated strong internal consistency.

The well-being subscale of the Center for Epidemiologic Studies of Depression Scale (CES-D; Radloff, 1977) was also used to measure positive well-being. Its four-items assess how frequently participants have felt certain ways (e.g., happy or hopeful). It is typically assessed on a scale of "Rarely or none of the time (less than 1 day)" (0) to "Most or all of the time (5-7 days)" (3). A revised version of the CES-D (the CESD-R; Eaton, Smith, Ybarra, Muntaner, & Tien, 2004) includes items that were slightly altered to correspond more strongly with diagnostic criteria for major depressive disorder and a fifth answering option, "Nearly every day for 2 weeks" (4). However, the CESD-R items (one factor) do not have the same factor structure as the CES-D (four factors). Thus, for the present study, given its interest in the diverse aspects and

persistence of grief and adjustment, the items from the CES-D (multiple factors) were used with the answering scale from the CESD-R (longer timeframe). Higher scores on the well-being subscale indicated greater well-being. Prior studies have found that the well-being subscale has good internal consistency (Cronbach's  $\alpha = .78$ ) and is inversely correlated with the depressed affect ( $r = -.55$ ) and somatic symptoms of depression ( $r = -.52$ ) subscales of the CES-D (Knight, Williams, McGee, & Olaman, 1997). The well-being subscale of the CES-D ( $M = 8.50$ ,  $S.D. = 4.15$ ; range = 0 to 16) had good internal consistency (Cronbach's  $\alpha = .87$ ) in the current study.

***Depressive symptoms.*** Depressive symptoms were assessed using the seven-item depressed affect and seven-item somatic symptoms subscales of the CES-D (Radloff, 1977). Participants indicate how often they have experienced the affective and somatic symptoms in the past week on a scale of “Rarely or none of the time (less than 1 day)” (0) to “Nearly every day for 2 weeks” (4). Higher scores on the depressed affect and somatic symptoms subscales indicate experiencing more symptoms of depression. Both the depressed affect (Cronbach's  $\alpha = .87$ ) and the somatic symptoms of depression subscales (Cronbach's  $\alpha = .75$ ) have demonstrated acceptable internal consistency in previous studies, and the subscales are highly correlated ( $r = .84$ ; Knight et al., 1997). The overall CES-D has demonstrated construct, convergent, and discriminant validity. Specifically, scores on the CES-D have been found to be significantly correlated with other self-report measures of depression ( $r = .83$  to  $.89$ ; Hicks & McCord, 2012), as well as interviewer ratings of depression ( $r = .46$  to  $.53$ ), negative affect ( $r = .55$  to  $.63$ ), positive affect ( $r = -.21$  to  $-.55$ ), and aggression ( $r = .26$  to  $.29$ ; Radloff, 1977). In the current investigation, the depressed affect subscale had a mean of 8.01 ( $S.D. = 6.76$ ; range = 0 to 27) and the somatic symptoms subscale had a mean of 8.94 ( $S.D. = 6.11$ ; range = 0 to 28), and both the



depressed affect subscale (Cronbach's  $\alpha = .91$ ) and the somatic symptoms subscale (Cronbach's  $\alpha = .87$ ) had good internal consistency.

***Life satisfaction.*** Life satisfaction was measured using the Satisfaction with Life Scale (SLS; Diener, Emmons, Larsen, & Griffin, 1985). Participants report their degree of agreement (from “strongly disagree” to “strongly agree”) with five statements regarding their perception of their life on a seven-point scale, and higher scores indicate more life satisfaction. The scale has been used with participants across adulthood, and social desirability was found not to be an issue with the SLS (Diener et al., 1985). A factor analysis revealed that a single factor accounts for 66% of the variance in scores. The scale has good internal consistency (Cronbach's  $\alpha = .79$  to  $.89$ ; Diener et al., 1985; Pavot & Diener, 1993). The scale has shown good temporal stability, with a test-retest correlation of  $.82$  at two-month (Diener et al., 1985) and  $.54$  at four years (Pavot & Diener, 1993). It has also shown sensitivity due to life events (e.g., diagnosis of an illness, receiving therapy; Pavot & Diener, 1993). Scores on the SLS are positively associated ( $r = .47$  to  $.75$ ) with other measures of positive well-being (Diener et al., 1985) and inversely associated with depression ( $r = -.72$ ; Pavot & Diener, 1993). In the current investigation, the SLS had a mean of 19.49 ( $S.D. = 7.95$ ; range = 5 to 35), and it had a Cronbach's alpha of  $.93$ .

***Appraisal of grief.*** Appraisal of grief was assessed using the 13-item Present subscale of the Texas Revised Inventory of Grief (TRIG-Present; Faschingbauer, 1981; Faschingbauer, Zisook, & Devaul, 1987). It assesses individuals' appraisal of the current feelings regarding the death of a loved one, and higher scores indicate more grief. Participants indicate how true particular statements are for them on a five-point scale from “Completely False” (1) to “Completely true” (5). Prior studies have found a strong correlation between the TRIG-Present and other measures of grief ( $r = .87$ ; Prigerson et al., 1995), and that the TRIG-Present has good

internal consistency (Cronbach's  $\alpha = .86$ ; Faschingbauer et al., 1987). In the present study, the TRIG-Present had a mean 39.68 ( $S.D. = 11.20$ ; range = 13 to 65) and strong internal consistency (Cronbach's  $\alpha = .91$ ).

**Emotion reactivity.** Emotion reactivity was measured using the Affective Intensity and Reactivity Measure Adapted for Youth (AIR-Y; Jones, Leen-Felder, Olatunji, Reardon, & Hawks, 2009). The AIR-Y is a 27-item measure that assesses participants' intensity of emotional experience and reactivity to given situations (e.g., solving a difficult problem, receiving an award, or seeing an injury) on a six-point scale from "never" (1) to "always" (6). Factor analyses have revealed that a three-factor solution (positive affectivity, negative intensity, and negative reactivity) has the best fit, although the subscales are relatively strongly correlated ( $r = .48-.67$ ), suggesting that they can be used as a single scale. Higher scores indicate greater emotion reactivity. Prior research has found that the subscales have acceptable internal consistency (Cronbach's  $\alpha = .70-.90$ ; Jones et al., 2009), that all subscales were significantly associated with negative affect ( $r = .17$  to  $.40$ ), and that the positive subscale was associated with positive affect ( $r = .56$ ). Although the AIR-Y was designed for use in adolescents, it was actually derived from a measure designed for adults, the 40-item Affect Intensity Measure (Larsen, 1985). The shortening of the measure to 27 items was the result of factor analyses, and the modification for adolescents only involved altering the language of the questions to allow them to be understood at a fourth grade reading level (Jones et al., 2009). In the present study, the AIR-Y had a mean of 98.43 ( $S.D. = 21.76$ ; range = 27 to 160), with a Cronbach's alpha of .91, similar to that found with the adolescent samples (Jones et al., 2009).

**Coping.** Coping was measured using two measures: 19 items from the Responses to Stress Questionnaire (RSQ; Connor-Smith et al., 2000) and 23 items from the Ways of Coping-

Revised (Folkman & Lazarus, 1985). The RSQ assesses participants' voluntary and involuntary engagement and disengagement responses when coping with particular stressors on a four-point scale from "not at all" (1) to "a lot" (4). The full RSQ consists of 57 items, which are designed to assess the extent to which participants used each of 19 different responses in a specific stressful situation, with three items targeting each different type of response. These 19 types of responses are then used to create five broader factors: primary control engagement, secondary control engagement, disengagement, involuntary engagement, and involuntary disengagement. The directions for the RSQ are adapted to refer specifically to the stressor of interest (e.g., in the present study, "dealing with the death of your loved one").

Prior research has found that the same five factor structure of the RSQ has acceptable fit across multiple samples (though all samples were adolescents) and multiple stressors (social stress, family conflict, and economic strain; Connor-Smith et al., 2000). Internal consistency of the five factors was established using two samples of adolescents and a sample adolescents and their parents studying four different types of stressors (social stress, family conflict, economic strain, and pain): primary control engagement (Cronbach's  $\alpha = .72$  to  $.84$ ), secondary control engagement (Cronbach's  $\alpha = .79$  to  $.84$ ), disengagement (Cronbach's  $\alpha = .67$  to  $.88$ ), involuntary engagement (Cronbach's  $\alpha = .88$  to  $.92$ ), and involuntary disengagement (Cronbach's  $\alpha = .81$  to  $.88$ ) all show acceptable internal consistency. Convergent validity of the primary control engagement, secondary control engagement, and disengagement factors was established by correlating scores on the RSQ with other measures of coping. Specifically, the primary control engagement factors was positively associated with active coping ( $r = .50$ ), planful coping ( $r = .50$ ), instrumental support ( $r = .46$ ), expression of emotion ( $r = .48$ ), and emotional support ( $r = .58$ ); the secondary control engagement factor was positively correlated with positive

reinterpretation ( $r = .46$ ) and acceptance ( $r = .33$ ); and the disengagement factor was positively associated with restraint coping ( $r = .36$ ), denial ( $r = .49$ ), behavioral disengagement ( $r = .52$ ), and mental disengagement ( $r = .47$ ). Using a sample of adolescents, two-week test-retest reliability ranged from .69 to .81 for the five factors. Internalizing and externalizing symptoms were found to be inversely correlated with primary control engagement ( $r = -.39$  and  $-.53$ , respectively) and secondary control engagement ( $r = -.38$  and  $-.44$ , respectively) and positively correlated with disengagement coping ( $r = .38$  and  $.38$ , respectively), involuntary engagement ( $r = .51$  and  $.34$ , respectively), and involuntary disengagement ( $r = .45$  and  $.35$ , respectively).

Although the RSQ has typically been used with children and adolescents, it has been successfully used with samples of adults in studies of coping with poverty-related stress (Wadsworth et al., 2005; Wadsworth et al., 2011), coping with displacement after Hurricane Katrina (Wadsworth et al., 2009), coping with terrorism (Wadsworth et al., 2004a), and forgiveness and coping after September 11, 2001 (Rhoades et al., 2007). In these samples of adults, internal consistencies generally range from adequate to good across the five factors: primary control engagement (Cronbach's  $\alpha = .65$  to  $.77$ ), secondary control engagement (Cronbach's  $\alpha = .65$  to  $.83$ ), disengagement (Cronbach's  $\alpha = .70$  to  $.81$ ), involuntary engagement (Cronbach's  $\alpha = .66$  to  $.90$ ), and involuntary disengagement (Cronbach's  $\alpha = .75$  to  $.87$ ).

In the present study, the 19 items identified as exemplary of each of the 19 different types of coping responses in both the Connor-Smith et al. (2000) and Wadsworth, Rieckmann, Benson, and Compas (2004b) studies were used to construct the five factors. They were chosen based on their explicit reference to coping strategy identified by researchers for each category. For example, for problem solving (from the primary control engagement subscale), the item states, "I tried to think of different ways to change the problem or fix the situation," or for rumination

(from the involuntary engagement subscale), the item states, “I couldn’t stop thinking about how I felt.” Although the five factors have been found to have adequate internal consistencies in other samples in adults, in the present study, the primary control engagement ( $M = 7.79$ ,  $S.D. = 1.95$ ; range = 3 to 12; Cronbach’s  $\alpha = .35$ ) and secondary control engagement factors ( $M = 11.08$ ,  $S.D. = 2.54$ ; range = 4 to 16; Cronbach’s  $\alpha = .58$ ) had subpar internal consistency, while the disengagement ( $M = 5.54$ ,  $S.D. = 2.27$ ; range = 3 to 12; Cronbach’s  $\alpha = .65$ ), involuntary engagement ( $M = 10.18$ ,  $S.D. = 3.53$ ; range = 5 to 20; Cronbach’s  $\alpha = .82$ ), and involuntary disengagement factors ( $M = 7.02$ ,  $S.D. = 2.82$ ; range = 4 to 16; Cronbach’s  $\alpha = .77$ ) had moderate or better internal consistencies.

The Ways of Coping-Revised (Folkman & Lazarus, 1985) assesses the many different ways in which individuals manage the demands of a stressful situation on a four-point scale from “not used” (1) to “used a great deal” (4). Factor analyses in multiple studies (Folkman & Lazarus, 1985; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986) on the Ways of Coping-Revised have revealed eight subscales, although the items on and naming of the subscales have varied with the participants studied (undergraduates in Folkman & Lazarus, 1985; a community sample of married couples in Folkman et al., 1986). Higher scores on the subscales indicate greater use of that particular type of strategy. For the current investigation, measures of emotion-focused, problem-focused, and avoidant coping were derived from subscales found using the community sample (Folkman et al., 1986). Specifically, problem-focused coping was assessed using four items (Cronbach’s  $\alpha = .70$ ;  $M = 8.61$ ,  $S.D. = 2.72$ ), emotion-focused coping was assessed using seven items (Cronbach’s  $\alpha = .78$ ;  $M = 16.22$ ,  $S.D. = 4.30$ ), avoidant coping was assessed using seven items (Cronbach’s  $\alpha = .72$ ;  $M = 12.40$ ,  $S.D. = 4.06$ ), and positive reappraisal was assessed using five items (Cronbach’s  $\alpha = .74$ ;  $M = 8.86$ ,  $S.D. = 3.19$ ).

Both the Connor-Smith et al. (2000) and Folkman and Lazarus (1985) approaches have a rich tradition and considerable background, though in different areas of research. Additionally, the approaches are relatively similar in nature, research suggests similar patterns in both measures, and several of the measures are strongly correlated (see Table 1). Thus, a factor analysis with a promax (orthogonal) rotation was conducted using each of the nine scale scores from the two measures to determine the appropriate structure for their use in the hypothesized model. An orthogonal rotation was chosen to emphasize the differences between the factors. This revealed a very clear two-factor structure (Table 2) that accounted for 63.5% of the variance. For parsimony and to preserve power in the model, factors scores for each participant were computed for the two factors, hereafter referred to as active engagement (Factor 1) and avoidant/involuntary coping (Factor 2), allowing those factors to be utilized as observed variables in the model.

**History of depression.** History of depression was assessed as part of a measure of health conditions. Participants were asked to indicate whether they had certain conditions (e.g., arthritis, heart trouble, depression, high, blood pressure, etc.), and whether they were diagnosed before or after the death of their loved one. This revealed that 35.6% (155) of the participants had been diagnosed with depression, 76.8% (119, or 27.3% of the total sample) of whom had been diagnosed prior to the death of their loved one, suggesting that they had a history of depression.

**Resilience.** Resilience was assessed for exploratory analyses using the Brief Resilience Scale (Smith et al., 2008). Participants report their degree of agreement (from “strongly disagree” to “strongly agree”) with statements regarding participants’ tendency to bounce back after stressful events. Higher scores indicate greater resilience. Factor analyses across four samples revealed that a single factor solution accounted for 57-67% of the variance and that the

measure had good internal consistency (Cronbach's  $\alpha = .80$  to  $.91$ ). The Brief Resilience Scale also found to be positively correlated with other measures of resilience ( $r = .51$  to  $.59$ ), positive affect ( $r = .45$  to  $.63$ ), social support ( $r = .27$  to  $.40$ ), and optimism ( $r = .45$  to  $.69$ ), and inversely correlated with pessimism ( $r = -.32$  to  $-.56$ ), denial ( $r = -.32$  to  $-.53$ ), self-blame ( $r = -.27$  to  $-.47$ ), anxiety ( $r = -.46$  to  $-.60$ ), depression ( $r = -.41$  to  $-.66$ ), negative affect ( $r = -.34$  to  $-.68$ ), and perceived stress ( $r = -.60$  to  $-.71$ ). In the current investigation, the Brief Resilience Scale had a mean of 19.46 ( $S.D. = 5.76$ ; range = 6 to 30) and strong internal consistency (Cronbach's  $\alpha = .93$ ).

**Gratitude.** Gratitude was assessed for exploratory analyses. It was measured using the six-item Gratitude Questionnaire (GQ6; McCullough et al., 2002). Participants report their degree of agreement (from "strongly disagree" to "strongly agree") with statements regarding being grateful on a seven-point scale. Higher scores indicate being more grateful. Prior research has found a single factor structure and acceptable internal consistency (Cronbach's  $\alpha = .76$  to  $.84$ ; McCullough et al., 2002; McCullough, Tsang, & Emmons, 2004). McCullough et al. (2004) found that scores on the GQ6 were associated with three gratitude-related words (grateful, thankful, and appreciative), with correlations ranging from  $.65$  to  $.75$ . McCullough et al. (2002) found that correlations between scores on the GQ6 and positive affect constructs have ranged from  $.30$  to  $.50$ , while correlations with negative affect constructs have ranged from  $-.20$  to  $-.30$ ; scores on the GQ6 were also positively associated with forgiveness ( $r = .30$ ), empathic concern ( $r = .27$ ), perspective taking ( $r = .36$ ), and multiple measures of religiousness ( $r = .22$  to  $.29$ ). In the present study, the GQ6 ( $M = 31.98$ ,  $S.D. = 6.95$ ; range = 9 to 42) demonstrated relatively strong internal consistency (Cronbach's  $\alpha = .88$ ).

**Posttraumatic growth.** Posttraumatic growth was assessed for exploratory analyses using the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996). The PTGI is a 21-item assessment of positive change after experiencing a traumatic event. Participants indicate the degree to which they experienced particular changes on a six-point scale from “I did not experience this change” (0) to “I experienced this change to a very great degree” (5), with higher scores indicating experiencing more growth. The PTGI can be used as either a single factor (Cronbach’s  $\alpha = .90$ ), or as five separate factors revealed by a series of factor analyses: new possibilities (Cronbach’s  $\alpha = .84$ ), relating to others (Cronbach’s  $\alpha = .85$ ), personal strength (Cronbach’s  $\alpha = .72$ ), spiritual change (Cronbach’s  $\alpha = .85$ ), and appreciation of life (Cronbach’s  $\alpha = .67$ ). Additionally, overall PTGI scores have been found to be significantly correlated with optimism ( $r = .23$ ), religious participation ( $r = .25$ ), extraversion ( $r = .29$ ), openness ( $r = .21$ ), agreeableness ( $r = .18$ ), and conscientiousness ( $r = .16$ ). In the current investigation, the PTGI ( $M = 41.78$ ,  $S.D. = 24.55$ ; range = 0 to 105) had excellent internal consistency (Cronbach’s  $\alpha = .96$ ).

### **Design and Procedure**

Participants initially selected to take part in the Human Intelligence Task (HIT) entitled “A Research Study of Bereavement” on Amazon’s Mechanical Turk implemented through Survey Monkey®. At that time, participants were presented with an informed consent form, which gave them the option to either consent and continue or decline continued participation. After consenting, participants were asked two screening questions. The first asked whether participants had ever experienced the death of a loved one; those who indicated that they had not ( $N = 47$ ) were redirected to a separate set of questions, while those who had experienced a death were directed to the second screening question. The second question asked participants to



indicate how long ago their loved one had died; those who indicated that the death had occurred 25 or more months ago ( $N = 451$ ) were directed to the separate questions, while those who indicated that they had experienced the death within the prior 24 months ( $N = 476$ ) continued with the survey. Next, those who continued with the survey were asked the demographic questions pertaining to the death of their loved one (relationship with the deceased, number of months since the death, cause of death, etc.). Then, participants were asked to complete the Positive and Negative Affect Schedule and the additional items from the Profile of Mood States, the Texas Revised Inventory of Grief, the health conditions questions (including the questions about history of depression), the Center for Epidemiologic Studies of Depression Scale, the Satisfaction with Life Scale, the Affective Intensity and Reactivity Measure Adapted for Youth, the Gratitude Questionnaire, the Brief Resilience Scale, the Responses to Stress Questionnaire, the Posttraumatic Growth Inventory, and the remaining demographic questions (age, gender, etc.), in that order. After completing the questions and measures, participants were thanked for their participation and given contact information for local and national clinical and counseling services and contact information for the researchers should they have questions or need assistance seeking professional support. After the information they provided was checked for validity, the \$2 payment was released to participants.

### **Chapter 5: Results**

Prior to conducting any preliminary, hypothesized, or exploratory analyses, the data were screened for violations of assumptions of the statistical tests. Next, preliminary analyses were conducted to examine differences in and/or associations with independent and dependent variables due to death-related demographic information. Third, preliminary analyses were conducted to evaluate hypothesized differences and/or associations. Fourth, structural models of

positive and negative well-being were evaluated, after which the hypothesized structural equation model was tested. Finally, exploratory analyses were conducted evaluating associations between coping, grief, adjustment, resilience, gratitude, and posttraumatic growth.

### **Data screening**

First, the data were screened for the nature of missingness (missing at random, missing completely at random, or nonrandom missingness). Twenty participants were missing data on one or more relevant measures for the current investigation. When individuals with scores were compared to individuals who did not have scores, it was found that all missing data was missing completely at random; that is, there were no significant differences on any variables involved in the study between those who had scores on particular scales and those who did not, suggesting that missing data would not impact the results.

Next, the data were examined for univariate outliers by converting raw scores to z-scores, and the normality of the data (skew and kurtosis) was examined. Converting raw scores to z-scores revealed one outlier (z-scores greater than  $|3|$ ; Tabachnick & Fidell, 2007) on the Affective Intensity and Reactivity Measure Adapted for Youth (emotion reactivity); that participant was removed from further analyses. There were five outliers on the negative affect scale. However, the negative affect scale had major positive skew, requiring a logarithmic transformation, which caused the five scores to no longer be outliers; thus, those participants were kept. Similarly, although there was one outlier on the CES-D somatic symptoms scale, five on the involuntary disengagement scale, two on the avoidant coping scale, and one on the positive reappraisal scale, the somatic symptoms scale and the positive reappraisal scale both had minor positive skew, requiring square root transformations, and the involuntary disengagement scale and the avoidant coping scale both had major positive skew, requiring logarithmic

transformations; the transformations caused the outliers to no longer be outliers. Additionally, there were three outliers on the Gratitude Questionnaire, but the scale had minor negative skew. The scale was inverted, a square root transformation was applied, and the scale was re-inverted, which caused there to no longer be outliers. Finally, the CES-D depressed affect scale and involuntary engagement scale had minor positive skew, requiring square root transformations, and the voluntary disengagement scale had major positive skew, requiring a logarithmic transformation.

Next, linearity was examined using scatterplots, and homoscedasticity was assessed using a regression with all variables predicting grief and a series of one-way ANOVAs examining gender differences in each of the continuous variables. The scatterplots showed no indication of nonlinear relations between the variables. For homoscedasticity, from the regression, the P-P plot revealed very limited deviation from the least squares line, and the scatterplot where the standardized residuals were regressed onto the standardized predicted value revealed no discernible pattern; from the ANOVAs, the Levene Statistic was not significant for any of the variables, suggesting that there were no homogeneity of variance issues.

Finally, using a regression with each of the variables predicting participant ID scores, multicollinearity was assessed using tolerance and VIF scores, and participants' leverage and Mahalanobis distance were used to investigate multivariate outliers. All tolerance scores were greater than .4 and VIF scores were less than 2.5, with the exception of the CES-D subscales. However, these scores were not concerning, because those scales were subscales from the same larger scale, meaning there were expected to be highly correlated, and because they contributed to the latent constructs of well-being, rather than being used independently. Additionally, no participants exerted undue leverage (greater than three times the average leverage score;

Tabachnick & Fidell, 2007). Finally, one participant had a Mahalanobis distance that exceeded the critical value, suggesting the individual was a multivariate outlier; thus, that participant was excluded from further analyses.

### **Preliminary analyses**

Several preliminary analyses were conducted examining the death-related demographic information's associations with and differences in emotion reactivity, coping, grief, and adjustment, with the intention that variables that showed associations with both grief/adjustment *and* predictors of grief/adjustment (e.g., coping) would be added to the model, as they would be theoretically or clinically relevant. First, correlations with length of bereavement, anticipation of the death, and relationship satisfaction with the deceased were examined (Table 3). Of note, although grief was significantly associated with length of bereavement ( $r = -.167, p = .001$ ), anticipation ( $r = -.285, p < .001$ ), and relationship satisfaction ( $r = .194, p < .001$ ), there were very few associations between the continuous death-related variables in the coping and emotion reactivity variables, and those that were significant (death anticipation and avoidant/involuntary coping) were relatively small in magnitude ( $r = -.167, p = .001$ ). Based on the smaller magnitudes of associations and the relative lack of association with the predictors in the model, it was determined that these constructs would not be added to the model.

Next, a series of one-way ANOVAs were conducted to investigate differences in emotion reactivity, coping, grief, and adjustment by relationship with the deceased, cause of death, receiving bereavement counseling, participation in a community bereavement group, and history of depression (Tabachnick & Fidell, 2007). For the ANOVAs investigating differences by relationship with the deceased (Table 4), only those relationships that comprised at least 10% of the sample (parent, grandparent, aunt/uncle, and friend) were included, as the other relations

occurred at such low frequencies that including them would have suppressed any significant differences. Those who reported having experienced multiple deaths were categorized by the most recent death. Across the four included relations, post hoc Tukey tests revealed a general trend, such that those who experienced the death of a friend reported less reactivity, more avoidant/involuntary coping, more grief, higher negative well-being, and lower positive well-being than the other relationship types. Experiencing the death of friend also appeared to comprise more of the deaths experienced by younger participants (18-29, 30-39) than other age groups (Table 5), those who experienced the death of a friend may have had a greater proportion deaths due to sudden causes than those who experienced the death of other relations (Table 6), and those who experienced the death of a friend reported anticipating the death of their loved one ( $F(3, 362) = 14.70, p < .001, \eta_p^2 = .109$ ) less than those who experienced the death of a parent ( $p = .047$ ), an aunt/uncle ( $p = .003$ ), or a grandparent ( $p < .001$ ). However, given the variety of relationships participants had with deceased individuals, the lack of power for a multi-group analysis, and the lack of importance with the hypothetical being tested, relationship with the deceased was not added to the model.

For the ANOVAs investigating differences by cause of death (Table 7), differences between prolonged illness or “natural causes” and all other causes (with the exception of unknown causes) were examined. The other causes were collapsed into the same group for multiple reasons. First, some of the causes occurred at such low frequencies that differences in may have been suppressed. Second, the non-prolonged illness causes involved relatively sudden death; that is, those who experienced the death of a loved one due to prolonged illness or “natural causes” may have had more advanced warning that the death may occur than those who experienced the death of a loved one due to other causes. The ANOVAs revealed that the only

significant differences were in avoidant/involuntary coping ( $F(1, 409) = 12.46, p < .001, \eta_p^2 = .030$ ) and grief ( $F(1, 420) = 8.76, p = .003, \eta_p^2 = .020$ ), such that those who experienced the more sudden causes reported greater use of avoidant/involuntary coping and more grief. Due to the relative lack of associations, smaller effect sizes, and variety of causes, some of which occurred at very low frequencies, cause of death was not added to the model.

The ANOVAs examining differences between those who have received or were receiving bereavement counseling and those who have/were not (Table 8) found several significant differences. Specifically, individuals who had received or were receiving bereavement counseling reported using more active coping ( $F(1, 408) = 4.93, p = .027, \eta_p^2 = .012$ ) and more avoidant/involuntary coping ( $F(1, 408) = 32.93, p < .001, \eta_p^2 = .075$ ), and reported more grief ( $F(1, 420) = 25.17, p < .001, \eta_p^2 = .057$ ), negative affect ( $F(1, 423) = 15.48, p < .001, \eta_p^2 = .035$ ), depressed affect ( $F(1, 420) = 11.84, p = .001, \eta_p^2 = .028$ ), and somatic symptoms ( $F(1, 420) = 10.71, p = .001, \eta_p^2 = .025$ ). However, the effect sizes were quite small, and receiving counseling was not theoretically relevant. Thus, bereavement counseling was not added to the model.

Differences by participation in a community bereavement group were also examined using a series of one-way ANOVAs (Table 9). This revealed that individuals who reported participating in a community bereavement group reported greater use of active coping ( $F(1, 409) = 13.40, p < .001, \eta_p^2 = .032$ ) and avoidant/involuntary coping ( $F(1, 409) = 16.59, p < .001, \eta_p^2 = .039$ ), and reported more grief ( $F(1, 421) = 12.63, p < .001, \eta_p^2 = .029$ ) and negative affect ( $F(1, 424) = 4.81, p = .029, \eta_p^2 = .011$ ). Similar to the results of the ANOVAs investigating differences between those who have received bereavement counseling and those who have not, this result may be due to individuals who use more avoidant/involuntary coping

and/or experience more grief seeking the bereavement group, rather than the group causing the use of avoidant/involuntary coping and more grief. Thus, participation in a community bereavement group was not added to the model.

Next, a series of one-way ANOVAs were used to examine differences between those who reported a history of depression and those who did not (Table 10). This revealed several significant differences. Those with a history of depression reported greater use of avoidant/involuntary coping ( $F(1, 411) = 26.16, p < .001, \eta_p^2 = .060$ ), greater grief ( $F(1, 422) = 7.59, p = .006, \eta_p^2 = .018$ ), higher negative affect ( $F(1, 426) = 18.78, p < .001, \eta_p^2 = .042$ ), higher depressed ( $F(1, 418) = 67.53, p < .001, \eta_p^2 = .139$ ), more somatic symptoms ( $F(1, 418) = 58.11, p < .001, \eta_p^2 = .122$ ), lower well-being ( $F(1, 418) = 41.00, p < .001, \eta_p^2 = .089$ ), and lower life satisfaction ( $F(1, 417) = 35.63, p < .001, \eta_p^2 = .079$ ). Though the effect sizes were not large, these significant findings (though the effect sizes were not large), research showing that having a history of depression is associated with an increased risk of having future depressive episodes (Judd et al., 1998; Mueller et al., 1999), the practical relevance of history of depression in predicting well-being, and its possible association with complicated grief, history of depression was added to the model predicting both positive and negative well-being, as well as avoidant/involuntary coping.

Analyses were also conducted examining associations between gender, age, emotion reactivity, coping, grief, and the adjustment variables. First, correlations were examined (Table 11). There were several interesting findings. Age was not significantly associated with emotion reactivity ( $r = -.092, p = .061$ ), active engagement ( $r = .012, p = .806$ ), avoidant/involuntary coping ( $r = -.060, p = .224$ ), or grief ( $r = .083, p = .091$ ); however, the direct effects were kept in the model to explicitly test the hypotheses. Also of note, emotion reactivity ( $r = .129$  to  $.248$ ) and

active engagement ( $r = .297$  to  $.346$ ) were significantly associated with all three positive well-being variables, and avoidant/involuntary coping was significantly associated with all three negative well-being variables ( $r = .421$  to  $.553$ ) and two of the three positive well-being variables, CES-D well-being ( $r = -.403$ ,  $p < .001$ ) and life satisfaction ( $r = -.249$ ,  $p < .001$ ). Thus, direct effects were added from emotion reactivity, active engagement, and avoidant/involuntary coping to positive well-being and from avoidant/involuntary coping to negative well-being to reflect those associations.

One-way ANOVAs were used to examine gender differences in emotion reactivity, coping, grief, and adjustment (Table 12). Small significant differences were found, such that women reported more emotion reactivity ( $F(1, 412) = 15.75$ ,  $p < .001$ ,  $\eta_p^2 = .037$ ), active engagement ( $F(1, 411) = 10.18$ ,  $p = .002$ ,  $\eta_p^2 = .024$ ), and life satisfaction ( $F(1, 412) = 8.24$ ,  $p = .004$ ,  $\eta_p^2 = .020$ ). Women also unexpectedly reported greater grief ( $F(1, 411) = 16.00$ ,  $p < .001$ ,  $\eta_p^2 = .037$ ), and the expected gender difference in avoidant/involuntary coping was not found ( $F(1, 411) = 1.58$ ,  $p = .210$ ,  $\eta_p^2 = .004$ ). A direct effect from gender to grief was added to the model due that the significant difference.

Finally, a preliminary measurement model was conducted to examine the fit of the positive and negative well-being latent variables (Figure 1, Table 13). The fit of this model was excellent according to some fit indices, but only adequate according to others ( $\chi^2(8) = 28.816$ ,  $p < .001$ ,  $CFI = .982$ ,  $GFI = .976$ ,  $RMSEA = .080$ ). There were no reasonable modifications that could be made to improve the fit. The poorer  $RMSEA$  may have been due to the relatively weak positive affect factor loading ( $\beta = .405$ ,  $p < .001$ ) on the latent positive well-being construct; however, because of the significant positive correlations between positive affect and well-being ( $r = .408$ ,  $p < .001$ ) and positive affect and life satisfaction ( $r = .250$ ,  $p < .001$ ), and the excellent



fit according to the *CFI* and *GFI*, the latent structures were considered acceptable for use in the larger hypothesized model.

### **Hypothesis Testing**

The seven stated hypotheses were tested simultaneously using the structural equation model in Figure 2. Note that, based on preliminary analyses, history of depression was added to the model, such that it was predicting avoidant/involuntary coping, positive well-being, and negative well-being. Direct effects were also added from gender to grief, from emotion reactivity, active engagement, and avoidant/involuntary coping to positive well-being, and from avoidant/involuntary coping to negative well-being. The overall fit of the model was determined based on four criteria: the ratio of  $\chi^2$  to degrees of freedom ( $\chi^2/df$ ), the comparative fit index (*CFI*), the goodness-of-fit index (*GFI*) and the root mean square error of approximation (*RMSEA*). For the  $\chi^2/df$ , a value of three or less is typically considered acceptable, while a value of less than two indicates a good fit between the data and the model, although values larger than three can be acceptable if other fit indices suggest the fit is acceptable (Tabachnick & Fidell, 2007). For the *CFI* and *GFI*, a value of .90 to .95 is considered acceptable, while values over .95 are considered good. For the *RMSEA*, values less than .08 are considered acceptable, while values less than .05 are considered good. In the current study, the hypothesized model, which had 41 free parameters, had a marginal fit to the data ( $\chi^2(50) = 193.384$ ,  $\chi^2/df = 3.87$ ,  $p < .001$ , *CFI* = .924, *GFI* = .934, *RMSEA* = .084).

Standardized regression weights and critical ratios of the parameters in the model were examined to determine the statistical significance of the parameters. Standardized regression weights reflect the amount of change in a dependent variable, in standard deviations, associated with a one standard deviation change in an independent variable; thus, they provide estimates of

independent variables' relative strength of prediction of dependent variables, as larger absolute values reflect greater change (Tabachnick & Fidell, 2007). Critical ratios are an estimate of the degree of difference between two values, where ratios greater than 1.96 reflect scores that are significantly different ( $p < .05$ ). When examining the parameters, the critical ratios reflect a ratio between the unstandardized regression weights and the standard error.

Examining the standardized regression weights and critical ratios of the parameters (Table 14) revealed several nonsignificant associations. To improve the model, nonsignificant parameters that were not theoretically relevant were removed one at a time, with the model re-analyzed after each was removed. The fit statistics of the model after each change can be seen in Table 15. The nonsignificant parameters were removed in the following order: the direct effect from gender to avoidant/involuntary coping ( $\beta = .036$ ,  $C.R. = 0.75$ ,  $p = .454$ ), the direct effect from gender to active engagement ( $\beta = .080$ ,  $C.R. = 1.73$ ,  $p = .084$ ), the direct effect from age to active engagement ( $\beta = .048$ ,  $C.R. = 1.05$ ,  $p = .294$ ), and the direct effect from age to avoidant/involuntary coping ( $\beta = -.060$ ,  $C.R. = -1.26$ ,  $p = .207$ ). Removing these parameters did not significantly change the fit ( $\chi^2(54) = 199.546$ ,  $p < .001$ ,  $CFI = .923$ ,  $GFI = .932$ ,  $RMSEA = .081$ ;  $\chi^2\Delta(4) = 6.162$ ,  $p = .405$ ).

The only remaining nonsignificant parameters were the direct effects from emotion reactivity to grief and active engagement to grief. Thus, the modification indices were examined. Only those modifications that could be justified by previous research or were theoretically relevant were added. After each modification was made, the model was re-analyzed, and the critical ratio and significance of each parameter was examined. The fit statistics after each addition to the model can also be seen in Table 15. The following additions were made in order: a covariance was added between active engagement and avoidant/involuntary coping, a direct

effect was added from gender to positive well-being, a direct effect was added from history of depression to active engagement, and a direct effect was added from age to grief.

The final model (Figure 3) consisted of 41 free parameters and achieved an acceptable fit ( $\chi^2(50) = 165.143, p < .001, \chi^2/df = 3.30, CFI = .939, GFI = .944, RMSEA = .075$ ). A statistical comparison of the final model and the initial model could not be made because the numbers of degrees of freedom were identical. However, had there been a difference of one in the degrees of freedom between the two models, the chi square difference ( $\chi^2\Delta = 28.241$ ) would have been significant at the  $p < .001$ ). Examination of the regression weights and critical ratios (Table 16) revealed mixed results for the hypotheses. Hypothesis 1 (gender differences in coping) was not supported, as the direct effects from gender to the two coping variables were removed due to nonsignificance. Hypothesis 2 (gender differences in emotion reactivity) was supported, as women reported greater emotion reactivity than men ( $\beta = .208, C.R. = 4.35, p < .001$ ). Hypothesis 3 (age differences in coping) was not supported, as the direct effects to the coping variables were nonsignificant and removed. Hypothesis 4 (age differences in emotion reactivity) was supported, as younger participants reported significantly more emotion reactivity than did older participants ( $\beta = -.125, C.R. = -2.61, p = .009$ ). Hypothesis 5 (emotion reactivity's associations with coping and grief) was partially supported. Emotion reactivity was positively associated with avoidant/involuntary coping ( $\beta = .138, C.R. = 2.90, p = .004$ ) as expected; however, it was positively associated with active engagement ( $\beta = .397, C.R. = 8.83, p < .001$ ), rather than the inverse association that was expected, and the direct effect from emotion reactivity to grief was not significant ( $\beta = .014, C.R. = 0.30, p = .761$ ). Hypothesis 6 (associations between coping and grief) was partially supported, as avoidant/involuntary coping was positively associated with grief ( $\beta = .501, C.R. = 11.68, p < .001$ ), but active engagement

was not significantly associated with grief ( $\beta = -.020$ ,  $C.R. = -0.44$ ,  $p = .659$ ). Finally, hypothesis 7 (grief's associations with well-being) was supported, as grief was inversely associated with positive well-being ( $\beta = -.148$ ,  $C.R. = -2.76$ ,  $p < .001$ ) and positively associated with negative well-being ( $\beta = .246$ ,  $C.R. = 5.19$ ,  $p < .001$ ).

The direct effects added due to preliminary analyses and the modification indices included several interesting associations. Both gender ( $\beta = .153$ ,  $C.R. = 3.59$ ,  $p < .001$ ) and age ( $\beta = .092$ ,  $C.R. = 2.18$ ,  $p = .027$ ) were significant predictors of grief, such that women and older participants reported more grief, both unexpected given previous research (e.g., Hurwicz et al., 1992; Lee et al., 1998; Lichtenstein et al., 1996; Umberson et al., 1992). History of depression was a significant predictor of both active engagement ( $\beta = -.100$ ,  $C.R. = -2.22$ ,  $p = .027$ ) and avoidant/involuntary coping ( $\beta = .239$ ,  $C.R. = 5.04$ ,  $p < .001$ ). Several significant predictors of positive and negative well-being were added as well. The added predictors of positive well-being were gender ( $\beta = .085$ ,  $C.R. = 2.26$ ,  $p = .024$ ), emotion reactivity ( $\beta = .150$ ,  $C.R. = 3.54$ ,  $p < .001$ ), active engagement ( $\beta = .365$ ,  $C.R. = 6.40$ ,  $p < .001$ ), avoidant/involuntary coping ( $\beta = -.402$ ,  $C.R. = -5.78$ ,  $p < .001$ ), and history of depression ( $\beta = -.148$ ,  $C.R. = -2.76$ ,  $p = .006$ ). The added predictors of negative well-being were avoidant/involuntary coping ( $\beta = .404$ ,  $C.R. = 7.66$ ,  $p < .001$ ) and history of depression ( $\beta = .260$ ,  $C.R. = 6.02$ ,  $p < .001$ ).

Pairwise comparisons of the predictors of each construct were also examined. These critical ratios reflect a comparison between the relative strength of the regression weights of the predictors (Byrne, 2010). Once again, if the critical ratio exceeded 1.96, the relative strengths of the regression weights was significantly different at the  $p < .05$  level. First, gender ( $\beta = .208$ ) was a significantly stronger predictor of emotion reactivity ( $C.R. = 2.40$ ) than age ( $\beta = -.125$ ). Concerning predictors of the coping variables, emotion reactivity ( $\beta = .397$ ) was a stronger

predictor of active engagement ( $C.R. = 4.97$ ) than history of depression ( $\beta = -.100$ ), but history of depression ( $\beta = .239$ ) was a stronger predictor of avoidant/involuntary coping ( $C.R. = 3.57$ ) than emotion reactivity ( $\beta = .138$ ). For the predictors of grief, avoidant/involuntary coping ( $\beta = .501$ ) was a significantly stronger predictor than gender ( $\beta = .153$ ;  $C.R. = 4.47$ ) and age ( $\beta = .092$ ;  $C.R. = 11.69$ ), and gender was a stronger predictor ( $C.R. = 2.01$ ) than age. Avoidant/involuntary coping ( $\beta = .404$ ) was the strongest predictor of negative well-being, as it was significantly greater than history of depression ( $\beta = .260$ ;  $C.R. = 5.82$ ) and grief ( $\beta = .246$ ;  $C.R. = 7.09$ ), which did not significantly differ ( $C.R. = 1.62$ ).

Of the six predictors of positive well-being, avoidant/involuntary coping ( $\beta = -.402$ ) was the strongest, as it was stronger than active engagement ( $\beta = .365$ ;  $C.R. = 3.73$ ), history of depression ( $\beta = -.216$ ;  $C.R. = 5.28$ ), emotion reactivity ( $\beta = .150$ ;  $C.R. = 5.99$ ), grief ( $\beta = -.148$ ;  $C.R. = 6.49$ ), and gender ( $\beta = .085$ ;  $C.R. = 6.86$ ). The next strongest was active engagement ( $\beta = .365$ ); it was stronger than history of depression ( $\beta = -.216$ ;  $C.R. = 5.28$ ), emotion reactivity ( $\beta = .150$ ;  $C.R. = 5.53$ ), grief ( $\beta = -.148$ ;  $C.R. = 5.83$ ), and gender ( $\beta = .085$ ;  $C.R. = 6.70$ ). Third, history of depression ( $\beta = -.216$ ) was a stronger predictor than emotion reactivity ( $\beta = .150$ ;  $C.R. = 4.10$ ), grief ( $\beta = -.148$ ;  $C.R. = 4.24$ ), and gender ( $\beta = .085$ ;  $C.R. = 4.50$ ). Finally, emotion reactivity ( $\beta = .150$ ) and grief ( $\beta = -.148$ ) did not differ in strength of prediction ( $C.R. = 0.63$ ), but both were stronger than gender ( $\beta = .085$ ;  $C.R. = 2.40$  and  $2.27$ , respectively).

Bootstrapping was used to examine direct, indirect, and total effects (Table 17), as it was possible that some of the hypothesized effects may have been indirect. This revealed significant indirect effects from age ( $\beta = -.050$ ,  $p = .008$ ) and gender ( $\beta = .083$ ,  $p < .001$ ) to active engagement and from age ( $\beta = -.017$ ,  $p = .013$ ) and gender ( $\beta = .029$ ,  $p = .005$ ) to avoidant/involuntary coping. There were also indirect effects on grief, emotion reactivity ( $\beta =$

.061,  $p = .044$ ) and history of depression ( $\beta = .122, p < .001$ ). The significant indirect predictors of positive well-being were age ( $\beta = -.042, p = .002$ ), emotion reactivity ( $\beta = .079, p = .026$ ), avoidant/involuntary coping ( $\beta = -.074, p = .007$ ), and history of depression ( $\beta = -.150, p < .001$ ). Finally, the significant indirect predictors of negative well-being were gender ( $\beta = .053, p < .001$ ), emotion reactivity ( $\beta = .074, p = .012$ ), avoidant/involuntary coping ( $\beta = .123, p < .001$ ), and history of depression ( $\beta = .126, p < .001$ ). These indirect effects strengthened the total effects of gender on grief ( $\beta = .169, p = .001$ ), emotion reactivity on positive well-being ( $\beta = .229, p < .001$ ), avoidant/involuntary coping on positive well-being ( $\beta = -.476, p < .001$ ), history of depression on positive well-being ( $\beta = -.366, p < .001$ ), avoidant/involuntary coping on negative well-being ( $\beta = .527, p < .001$ ), and history depression on negative well-being ( $\beta = .387, p < .001$ ). Also of note, nonsignificant indirect effects raised the total effects of three constructs: the total effect of gender on grief ( $\beta = .169, p = .001$ ), the total effect of gender on positive well-being ( $\beta = .110, p = .005$ ), and the total effect of active engagement on positive well-being ( $\beta = .368, p < .001$ ). Interestingly, the significant direct effect of age on grief ( $\beta = .092, p = .047$ ) and the nonsignificant indirect effect ( $\beta = -.009, p = .151$ ) were in opposite directions, causing the total effect to be nonsignificant ( $\beta = .083, p = .069$ ).

Overall, the predictors in the model account for 5.9% of the variance in emotion reactivity, 16.8% of the variance in active engagement, 7.6% of the variance in avoidant/involuntary coping, 28.4% of the variance in grief, 45.7% of the variance in negative well-being, and 46.9% of the variance in positive well-being.

### **Exploratory Analyses**

Correlations between resilience, gratitude, posttraumatic growth, and the variables of interest in the present study were examined (Table 18). Resilience was not significantly

correlated with emotion reactivity ( $r = .005, p = .912$ ), but it was significantly correlated with active engagement ( $r = .234, p < .001$ ), avoidant/involuntary coping ( $r = -.350, p < .001$ ), grief ( $r = -.309, p < .001$ ), negative affect ( $r = -.326, p < .001$ ), depressed affect ( $r = -.462, p < .001$ ), somatic symptoms ( $r = -.383, p < .001$ ), positive affect ( $r = .306, p < .001$ ), well-being ( $r = .492, p < .001$ ), life satisfaction ( $r = .406, p < .001$ ), gratitude ( $r = .347, p < .001$ ), and posttraumatic growth ( $r = .189, p < .001$ ). Gratitude was significantly associated with emotion reactivity ( $r = .253, p < .001$ ), active engagement ( $r = .337, p < .001$ ), avoidant/involuntary coping ( $r = -.288, p < .001$ ), grief ( $r = -.114, p = .019$ ), negative affect ( $r = -.262, p < .001$ ), depressed affect ( $r = -.379, p < .001$ ), somatic symptoms ( $r = -.300, p < .001$ ), positive affect ( $r = .326, p < .001$ ), well-being ( $r = .570, p < .001$ ), life satisfaction ( $r = .565, p < .001$ ), and posttraumatic growth ( $r = .323, p < .001$ ). Finally, posttraumatic growth was significantly associated with emotion reactivity ( $r = .324, p < .001$ ), active engagement ( $r = .626, p < .001$ ), avoidant/involuntary coping ( $r = .173, p < .001$ ), grief ( $r = .171, p < .001$ ), positive affect ( $r = .309, p < .001$ ), well-being ( $r = .301, p < .001$ ), and life satisfaction ( $r = .295, p < .001$ ), but not negative affect ( $r = .001, p = .980$ ), depressed affect ( $r = -.064, p = .194$ ), and somatic symptoms ( $r = -.036, p = .461$ ).

Overall, the exploratory correlations revealed significant correlations between resilience, gratitude, posttraumatic growth, coping, and adjustment, suggesting that the three exploratory constructs are promising areas for future bereavement research.

## Chapter 6: Discussion

Bereavement research has largely focused on negative aspects of adjustment and those individuals who have had greater difficulty adjusting, despite research and theory emphasizing the need to study both positive and negative well-being (e.g., Bradburn, 1969; Cohn et al., 2009;

Diener & Emmons, 1984; Fredrickson, 1998) and evidence of substantial variability, including a considerable amount of resilience, in individuals' responses to the death of a loved one (e.g., Boerner et al., 2005). Using the stress and coping model (Lazarus, 1966; Lazarus & Cohen, 1977; Lazarus & Folkman, 1984) as a framework, the present study attempted to address these issues by investigating ways in which emotion reactivity and coping may be associated with grief and both positive and negative well-being among individuals who had experienced the death of a close friend or family member.

Overall, the stress and coping model provided an excellent framework for the investigation of adjustment after bereavement, as coping was significantly associated with participants' appraisal of grief, which was subsequently associated with both positive and negative well-being. Focusing more specifically on the coping results in the model, although active engagement was not significantly associated with grief, avoidant/involuntary coping was positively, and relatively strongly, associated with grief. In terms of well-being, active engagement had a relatively strong positive association with positive well-being, and avoidant/involuntary coping was strongly associated with both positive well-being (inversely) and negative well-being (positively). Thus, for the current sample, it appears that the use of coping responses that are typically less helpful (avoidance and rumination; Carver & Connor-Smith, 2010) may have resulted in greater grief and poorer adjustment, whereas employing coping responses that are typically more useful or beneficial (e.g., problem-solving or emotion regulation strategies) may not have had the same influence. However, due to the correlational nature of the data, one cannot be certain whether coping responses influenced participants' grief or whether experiencing greater grief influenced individuals' coping responses.



It was somewhat surprising to find that active engagement was not significantly associated with grief or negative well-being, as considerable research has linked those particular coping responses to better adjustment. For example, research has shown that emotion-focused strategies tend to be effective in situations in which there is no clear way to control the situation (de Ridder, 2000; Folkman, 1992), that appropriate emotion regulation is linked with better outcomes among bereaved individuals (Bonanno & Kaltman, 1999; Bonanno & Keltner, 1997), and that social support may buffer against depressed mood and maintain positive mood among bereaved individuals (e.g., Lund, 2010; van der Houwen et al., 2010). Thus, this relation was clearly expected.

For emotion reactivity, or the intensity with which one tends to respond to stimuli (Jones et al., 2009), prior research has demonstrated that individuals who are more reactive tend to view experiences as more stressful or negative than do less reactive individuals (e.g., Gross et al., 1998). Moreover, research has shown that more reactive individuals may underestimate available coping resources (e.g., Gunthert et al., 1999). Thus, it was hypothesized that emotion reactivity would be inversely associated with active coping, positively associated with avoidant/involuntary coping, and positively associated with grief. Although no specific hypotheses were made regarding positive and negative well-being, one could extend the logic of the emotion reactivity-grief hypothesis to argue that emotion reactivity would be positively associated with negative well-being and inversely associated with positive well-being.

However, the results did not necessarily reflect expectations. Emotion reactivity was directly, positively, and somewhat strongly associated with positive well-being and active engagement. However, it was also positively and directly, though not as strongly, associated with avoidant/involuntary coping, and indirectly positively associated with grief and negative well-

being. These results suggest that emotion reactivity, as measured by the Affective Intensity and Reactivity Measure Adapted for Youth (AIR-Y; Jones et al., 2009), may actually reflect a willingness to share or express one's emotions, rather than intensity of response. Recent research (Stroebe, Finkenauer, Wijngaards-de Meij, Schut, van den Bout, & Stroebe, 2013) has found that suppression of emotional expression after the death of a child was associated with greater immediate and future grief for oneself and for one's partner. The results of the present study similarly suggest that greater willingness to expression emotion may be associated with better bereavement outcomes as, despite positive associations between emotion reactivity and both types of coping, grief, and positive and negative well-being, the associations with active engagement and positive well-being were stronger. However, the correlational nature of the data must be kept in mind, as it is possible that greater positive well-being and use of active engagement coping strategies allowed for the expression of emotion.

Both coping and emotion reactivity were proposed as potential mechanisms behind gender- and age-related differences in grief. However, the results of the current study did not support that proposal. First, in the current sample, gender was a direct predictor of grief in the model, as women reported greater grief than men, which was unexpected given prior research (e.g., Lee et al., 1998; Umberson et al., 1992). Second, a significant direct effect was found from age to grief, such that older participants reported more grief, counter to prior research (e.g., Hurwicz et al., 1992; Lichtenstein et al., 1996). Third, gender was not truly a predictor of coping. Although there was a mean difference in active engagement in the preliminary ANOVA, the effect size was quite small. Additionally, in the model, there were no direct paths from gender to the coping responses, and the indirect paths were quite small. Fourth, the preliminary correlations between age and the coping variables were not significant, and the indirect effects in

the model were very small. Finally, while expected gender and age differences in emotion reactivity were found, emotion reactivity was not significantly directly associated with grief, and the indirect association was quite small. To summarize, age and gender differences in coping, emotion reactivity, and grief generally were not found, were very small in magnitude, or were in unexpected directions, and the association between emotion reactivity and grief was generally not found. Thus, at least in the current sample, age and gender differences in coping and emotion reactivity could not be the mechanisms behind age and gender differences in grief.

The inability to find the expected age differences in grief, or in most of the positive and negative well-being variables, was particularly surprising. A moderate positive correlation between age and positive affect was found in the preliminary correlations, and a small positive direct effect from age to grief was found in the model, though it was in an unexpected direction and the total effect was nonsignificant due to an inverse indirect effect. A very small indirect effect from age to the positive well-being latent construct was also found in the model, but no other significant relations were found. Research has consistently found that younger adults report more negative emotionality and less positive emotionality than older adults. This relation has been found in cross-sectional (e.g., Carstensen et al., 2000; Gross et al., 1997) and longitudinal research (Mroczek, 2004; Mroczek & Kolarz, 1998), and specifically among bereaved individuals (e.g., Hurwicz et al., 1992; Lichtenstein et al., 1996). Socioemotional selectivity theory (SST; Carstensen, 1993) also suggests that with age there should be increased positive well-being and decreased negative well-being, and that poignancy, or mixed emotionality, should be found more with age, especially in situations that are typically negative in nature (e.g., Carstensen et al., 2000; Ernsler-Hershfield et al., 2008; Ong & Bergman, 2004). Thus, the inability to find age-related differences in emotionality was unanticipated.

Women's reporting greater grief than men in the current study was also unexpected. With the exception of those who experience the death of a child (e.g., Dyregrov & Matthiesen, 1991; Moriarty et al., 1996), research has suggested men may not adjust as well after the experiencing the death of a loved one as women (e.g., Lee et al., 1998; Umberson et al., 1992). Thus, it was expected that this trend would continue in the present study. However, this difference in findings provokes an interesting question: Might the presentation of grief vary in men and women? Bereavement research has frequently focused on adjustment in terms of depressive symptoms (e.g., Coifman & Bonanno, 2010); however, there has been recent debate about whether depression is experienced and expressed in the same manner by both women and men. Addis (2008) outlines and evaluates four perspectives on gender differences in depression, including arguments about ways in which socialization may influence the presentation of depression in men (e.g., anger and substance use as symptoms of depression or caused by suppression of depressive symptoms). It is possible, then, that gender differences in grief may follow a similar pattern, as these differences may apply to negative emotionality in general. It is also interesting to consider that a relatively stable gender difference in reporting of depressive symptoms might be minimized or reversed in the context of bereavement. It might challenge stereotypes or paradigms about the importance of relationships in men or the experience or expression of emotionality by men. Thus, future bereavement research should consider assessing adjustment across several domains, including negative affect, externalizing behaviors (e.g., anger), and substance use, as they may provide a more complete understanding of adjustment.

Another major aspect of the current investigation was the inclusion of positive well-being in the study of adjustment after the death of a loved one. Despite theory and prior research emphasizing the distinction between positive and negative well-being (e.g., Bradburn, 1969;

Stallings et al., 1997; Watson & Tellegen, 1985) and the importance of positive affect for general well-being (e.g., Cohn et al., 2009; Fredrickson, 1998), most studies of bereaved individuals have focused on negative well-being. In the current study, the position that positive and negative well-being are related, but distinct, constructs was supported. There was a strong inverse correlation between the positive and negative well-being latent constructs ( $r = -.771$ ) and some overlap in variables that were directly associated with the constructs in the model; avoidant/involuntary coping, grief, and history of depression were all positively associated with negative well-being and inversely associated with positive well-being. However, there were also distinct predictors for positive well-being: gender, emotion reactivity, and active engagement. Thus, the inclusion of positive well-being was warranted, and future studies should do so as well.

The preliminary analyses also revealed several interesting associations, each of which suggests that the context of the death plays an important role. First, length of bereavement was inversely associated grief and each of the negative well-being variables, and was positively associated with the well-being subscale of the CES-D. However, the magnitude of each of these correlations was quite small, which was expected given research suggesting that time is only a factor for perhaps a third of bereaved individuals (e.g., Boerner et al., 2005; Bonanno, 2004; Bonanno et al., 2002). Second, those who had the greatest relationship satisfaction had the greatest grief and negative well-being, which attachment theory suggests should be the case (e.g., Shear, 2010; Shear & Shair, 2005). Third, those whose loved ones died in a more sudden manner reported greater grief, and those who least anticipated the death reported greatest grief and the negative affect, depressed affect, and somatic symptoms, consistent with prior research (Piper et al., 2011). Despite these significant associations, these variables were not added to the model due to their small effect sizes and/or lack of relevance to the tested model.

Interesting results were also found in the exploratory analyses. The first exploratory variable of interest was resilience, as researchers have used the term “resilient” to describe those who do not have strong responses to the death of a loved one (e.g., Boerner et al., 2005; Bonanno, 2004; Bonanno et al., 2002). Resilience was significantly associated with both coping constructs, grief, and all positive and negative well-being variables, suggesting that trait resilience may be a construct of interest in future bereavement research. However, it is not clear whether being resilient is actually responsible for greater use of certain coping strategies or avoidance of others, or whether people may be resilient because of the coping strategies they use, as research has shown that resilience is associated with more active coping strategies (e.g., Friberg et al., 2005; Norlander et al., 2005). Thus, the construct of resilience could actually be a proxy for a number of other behaviors, traits, or tendencies, rather than an explanatory mechanism.

Gratitude also had interesting associations. More specifically, gratitude was positively associated with active engagement and inversely associated with avoidant/involuntary coping, as well as being significantly associated with grief and all six of the positive and negative well-being variables. Gratitude’s associations with positive and negative well-being are of particular interest, as gratitude may be a potential target for interventions. In prior research, inducing gratitude (writing letters about being grateful) was associated with greater happiness and life satisfaction and fewer depressive symptoms (Toepfer et al., 2012), and research has shown that gratitude can lead to positive reframing, and thus result in fewer depressive symptoms (Lambert et al., 2012). Thus, future research should continue to investigate associations between gratitude and adjustment after the death of a loved one and should investigate whether inducing gratitude may result in better adjustment.

The final exploratory variable was posttraumatic growth, as prior research has indicated that there may be growth after bereavement (e.g., Calhoun & Tedeschi, 1998; Gerrish et al., 2009; Kessler 1987; Shanfield & Swain, 1984). Posttraumatic growth was significantly associated with grief and all three indicators of positive well-being, but was not associated with any of the three negative well-being variables. It was also significantly associated with avoidant/involuntary coping, and was particularly strongly associated with active engagement ( $r = .626$ ), though this may have been due to the inclusion of positive reappraisal from the Ways of Coping-Revised (Folkman & Lazarus, 1985) in the active engagement construct. These correlations suggest that posttraumatic growth merits further study as a potential indicator of adjustment. However, it is not clear whether posttraumatic growth might differentiate between “normal” grievers, complicated grievers, and resilient bereaved individuals. This is largely because of a basic definitional question: can someone who does not see an experience as traumatic experience “posttraumatic” growth due to that experience? If the growth is truly “posttraumatic,” it might require stress or struggle to achieve it.

As with any study, there were limitations. The first, and perhaps most important, limitation concerned the sample. In the current study, relatively well-substantiated age and gender differences in grief and well-being were not found. This could be due to large differences between the samples that typically used to study bereavement and the present sample. First, the sample was much younger than is typical. Much of bereavement research has focused on children, adolescents, or middle-aged and older adults. Thus, in terms studies of bereaved adults, the sample was quite different, as it was younger than is typical ( $M$  age = 31.20).

Participants’ relationship with the deceased also varied widely. In studies of bereavement in adults, most studies have focused on middle-aged and older adults responses to the death of a

spouse or parents' adjustment after the death of a child. In the present study, the most commonly experienced deaths were grandparents (40.2%), friends (17.5%), parents (16.1%), and aunts and uncles (10.6%), all relations that are atypical in studies of bereavement. Experiencing the deaths of these relations may be qualitatively different. In the present study, the data suggest that experiencing the death of a friend may indeed be different. Among those relations that could be statistically compared, those who experienced the death of a friend generally reported greater grief, more negative well-being, and less positive well-being than those who experienced the death of other individuals. This provokes questions about what may be so different about experiencing the death of friend. In the present study, the death of friend was less anticipated, the death may have been due to more sudden causes than the deaths of the other relations (Table 6), and the deceased may have been younger than is typical in bereavement research not explicitly studying those who have experienced the death of a child, perhaps making the death particularly non-normative. Experiencing the death of someone who is likely closer to the bereaved individuals' age could also have served as a "real life" mortality salience manipulation, potentially reminding the living of their own mortality (for an example of an empirical mortality salience manipulation, see Maxfield et al., 2007). Future research should continue to investigate bereavement and adjustment across several relations, including studying bereavement among those who experience the death of friends. Targeted recruitment of individuals by relation to the deceased is also warranted, as this would allow for multi-group analyses investigating potential different influences on adjustment when coping with different types of losses.

Similarly, participants were not asked about their degree of closeness with their deceased loved one prior to their loved one's death. Although participants were asked about their satisfaction with their relationship with the deceased individual, this did not necessarily reflect



how close or connected the participant felt with their deceased loved one. This very well could influence bereaved individuals' grief (e.g., Servaty-Seib & Pistole, 2006), and thus should be included in future studies.

Another concern regarding the sample was the recruitment method. Participants recruited through crowdsourcing may be qualitatively different from those who participate in in-person data collections. Research has shown that the data collected from crowdsourcing technologies, like Amazon's Mechanical Turk, are of fairly high quality, with measures having relatively similar psychometric and quantitative properties to in-person studies (Weigold, Weigold, & Russell, 2013), so long as researchers carefully design their studies and review responses for potential faking (Shapiro, Chandler, & Mueller, 2013). However, somewhat similar to findings in the present study, relatively well-substantiated findings may be different in crowdsourced samples. For example, relatively higher rates of some clinically relevant psychological symptoms have been found in crowdsourced samples (Shapiro et al., 2013). These findings could reflect real rates of these symptoms, or they could suggest malingering, as the anonymity that these approaches to data collection afford may promote greater willingness to disclose or facilitate exaggeration or deceit. It is also quite possible that neither those willing to participate in in-person data collections nor those who participate via online mediums are representative of the general population; thus, generalization should be done cautiously.

Online data collection also poses other concerns. While the vast majority of young and middle-aged adults are internet savvy, only about 53% of older adults use the internet, though that number is rising (Pew Internet & American Life Project, 2012). The use of an online survey immediately excluded all individuals who were not internet users. It is possible that, especially among older adults, internet users and non-users will significantly differ on the variables of

interest. Perhaps individuals who are internet savvy can more easily connect with living loved ones, fellow bereaved individuals, or other helpful resources. In contrast, individuals whose social interactions occur via online resources may not receive the same sorts of benefits that other modes of communication may provide (e.g., Gentzler, Oberhauser, Westerman, & Nadorff, 2011). Thus, future research should consider including both online and in-person data collection methods to examine potential differences in adjustment and use or availability of coping resources between the samples.

Another limitation involves choices in conceptualization and measurement. First, positive well-being was conceptualized as a latent variable consisting of positive affect (using the PANAS and POMS items), well-being (using the CES-D subscale), and life satisfaction (using Diener et al.'s, 1985, Satisfaction with Life Scale). However, positive affect did not have a particularly strong loading on the latent construct ( $\beta = .405$  to  $.429$ , compared to the  $.654$  to  $.695$  and  $.863$  to  $.921$  factor loadings of well-being and life satisfaction, respectively), meaning it did not have as much commonality with the other measures as expected. This may have limited the findings. Second, the psychometric properties of the 19 items from the Responses to Stress Questionnaire (RSQ; Connor-Smith et al., 2000) were not ideal in the current study: the primary and secondary control engagement factors had low internal consistencies. Prior research with adults has found that each of the RSQ factors has reasonable internal consistency (e.g., Rhoades et al., 2007; Wadsworth et al., 2011); thus, the issues may be due to the use of the 19-item version, rather than the full 57-item measure. These poorer psychometrics may have limited what could be learned in regards to that conceptualization of coping and adjustment after the death of a loved one.

The next limitation was that the study was cross-sectional and correlational. Any age differences found may be due to developmental changes or cohort differences, making interpretation of findings difficult. Longitudinal data could potentially allow for a better understanding of developmental trends in bereavement. However, it should be noted that identification of cohort differences can be valuable as well, as they may reflect differences in socialization of emotion or display rules, which also may influence adjustment.

Additionally, the correlational nature of the data makes determination of directionality and causality difficult. Although directionality in the model was chosen based on theory and prior research, it is certainly possible that those choices were incorrect. For example, although the stress and coping model suggests that coping should affect one's appraisal of grief (Lazarus, 1966; Lazarus & Cohen, 1977; Lazarus & Folkman, 1984), it is possible that the extent of one's grief may influence coping responses. Consider that someone who is particularly saddened by the death of a loved one (perhaps a spouse) may put off processing those emotions to take care of day-to-day necessities (e.g., children), consistent with the dual process model (Stroebe & Schut, 1999). In this scenario, greater grief (and perhaps prolonged grief) would be associated with avoidance, but the avoidance may have been adaptive. Despite this limitation, correlational research is still valuable because it may identify predictors or factors that are associated with different patterns of adjustment, which may be of particular importance in bereavement research given the potential long-term issues that may be experienced by those with complicated grief (e.g., Bowling, 1994).

Despite the limitations of this correlational, cross-sectional research, there were important findings. First, use of the stress and coping model framework did show that certain coping strategies (avoidant/involuntary coping) might be detrimental for bereaved individuals in terms

of grief and positive and negative well-being. Additionally, it showed that emotion reactivity may influence bereaved individuals' positive well-being, and it showed that history of depression may influence coping strategies and may be a potential predictor of those who will not adjust well after the death of a loved one. Finally, the exploratory analyses suggested areas of potential interest for future bereavement research.

Future bereavement research should investigate several promising areas. First, future studies should include measures of positive well-being when assessing adjustment, rather than focusing solely on negative well-being. Second, longitudinal research is needed, as it may allow for identification of early differences between individuals in different grief trajectories, it may identify particular turning points or events when grief may be better or worse, and it would allow for examination of whether different characteristics or coping responses are associated with better adjustment at different times. Third, and perhaps unique in all of psychological research, future bereavement studies should study young adults, as much of the focus in this area has been on the very young and the moderately to relatively old, perhaps leaving a hole in our cross-sectional understanding of bereavement. Fourth, as discussed, research investigating potential gender differences in the experience and/or expression of grief is needed, as consistent gender differences (e.g., in depression) may be altered or reversed by the situation, or the presentation of grief may vary due to influences on gender, such as socialization. Fifth, other areas of emotion regulation should be investigated, including physiological arousal and behavioral control (e.g., impulsivity or agitation), as they may provide a more complete understanding of adjustment. Finally, research should continue to investigate particular traits or characteristics that may influence grief and adjustment (e.g., resilience, gratitude, personality) or differentiate between

different trajectories of adjustment and other potential indicators of adjustment (e.g., posttraumatic growth).

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**Table 1***Correlations between the Nine Coping Scales.*

Variable	1	2	3	4	5	6	7	8	9
1 Emotion-Focused Coping	—	.471**	.177**	.537**	.538**	.371**	.102*	.233**	.152**
2 Problem-Focused Coping		—	.243**	.609**	.591**	.488**	.220**	.223**	.245**
3 Avoidant Coping			—	.160**	.056	.068	.595**	.555**	.579**
4 Positive Reappraisal				—	.360**	.482**	.137**	.136**	.198**
5 Primary Control Engagement					—	.427**	.091	.192**	.063
6 Secondary Control Engagement						—	.001	-.044	.067
7 Voluntary Disengagement							—	.591**	.526**
8 Involuntary Engagement								—	.581**
9 Involuntary Disengagement									—

*Note.*\*  $p < .05$ \*\*  $p < .01$

**Table 2***Factor Analysis for Nine Coping Scales.*

Scale	Factor	
	1	2
Problem-Focused Coping	.799	.127
Positive Reappraisal	.771	.039
Primary Control Engagement	.770	-.049
Secondary Control Engagement	.756	-.169
Emotion-Focusing Coping	.746	.050
Disengagement Coping	-.047	.833
Involuntary Engagement	.010	.828
Avoidant Coping	.000	.826
Involuntary Disengagement	.015	.807

*Note.*

A promax rotation was used.

Variance accounted for:

Factor 1 = 38.73%

Factor 2 = 24.76%



**Table 3***Correlations between Emotion Reactivity, Coping, Grief, Adjustment, and Death-Related Variables.*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Emotion Reactivity	—	.392**	.149**	.102*	.056	.143**	.141**	.248**	.129**	.139**	-.083	-.001	.089
2 Active Engagement		—	.223**	.122*	-.014	.021	.030	.346**	.304**	.297**	.000	-.072	.067
3 Avoidant/Involuntary Coping			—	.502**	.421**	.553**	.540**	-.010	.403**	.249**	-.108*	.167**	-.015
4 Grief				—	.304**	.464**	.412**	-.010	.313**	.138**	.167**	.285**	.194**
5 Negative Affect					—	.588**	.547**	.190**	.455**	.271**	.134**	-.044	-.024
6 Depressed Affect						—	.831**	.217**	.655**	.511**	.152**	-.085	-.029
7 Somatic Symptoms							—	.129**	.573**	.455**	-.108*	-.045	-.025
8 Positive Affect								—	.408**	.250**	.016	-.030	.163**
9 Well-Being									—	.593**	.154**	.107*	.103*
10 Life Satisfaction										—	.045	.024	.108*
11 Time Since Death											—	.034	.018
12 Death Anticipation												—	.036
13 Relationship Satisfaction													—

*Note.*\*  $p < .05$ \*\*  $p < .01$

**Table 4**

*One-Way ANOVAs investigating Differences in Emotion Reactivity, Coping, Grief and Adjustment by Relationship with the Deceased.*

Variable	<i>df</i>	<i>F</i>	<i>p</i>	$\eta_p^2$	Tukey
Emotion Reactivity	3, 350	3.27	.021	.027	A > F
Active Engagement	3, 345	3.09	.027	.026	none
Avoidant/Involuntary Coping	3, 345	8.71	< .001	.070	F > P, G
Grief	3, 354	18.82	< .001	.138	F, P > A, G
Negative Affect	3, 357	3.17	.024	.026	F > G
Depressed Affect	3, 350	5.96	.001	.049	F > P, G
Somatic Symptoms	3, 350	4.51	.004	.037	F > G, P
Positive Affect	3, 357	2.94	.033	.024	A > F
Well-Being	3, 350	5.18	.002	.043	G, P > F
Life Satisfaction	3, 350	2.72	.044	.023	G > F

*Note.*

F = Friend

G = Grandparent

A = Aunt/Uncle

P = Parent

**Table 5***Relationship with the Deceased by Age Group.*

Relationship with the Deceased	Age Group				
	18-29	30-39	40-49	50-59	60+
Spouse	1	3	2	0	3
Child	1	2	1	0	0
Sibling	9	5	3	4	2
Parent	21	18	15	15	1
Grandparent	111	46	9	0	0
Grandchild	0	0	0	1	0
Cousin	11	1	1	0	0
Aunt/Uncle	29	10	0	3	1
Niece/Nephew	3	0	1	0	0
Significant Other (not married)	2	0	0	0	0
In-Law	3	2	2	1	0
Friend	36	24	5	6	0

**Table 6***Relationship with the Deceased by Cause of Death.*

Relationship with the Deceased	Cause of Death						
	Prolonged Illness or Natural Causes	Sudden Health Condition	Accident	Alcohol- or Drug- related	Murdered or Killed	Medical Procedure	Suicide
Spouse	6	3	0	0	0	0	1
Child	2	2	0	0	0	0	0
Sibling	8	4	6	1	3	0	1
Parent	44	18	6	1	0	1	0
Grandparent	133	38	4	0	1	0	0
Grandchild	0	0	1	0	0	0	0
Cousin	2	1	6	1	2	0	2
Aunt/Uncle	32	8	2	0	0	1	2
Niece/Nephew	2	1	0	0	0	1	0
Significant Other (not married)	1	0	1	0	0	0	0
In-Law	4	2	0	2	0	0	2
Friend	36	2	21	4	2	1	9

**Table 7**

*One-Way ANOVAs investigating Differences in Emotion Reactivity, Coping, Grief and Adjustment by Cause of Death.*

Variable	<i>df</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Emotion Reactivity	1, 415	0.57	.452	.001
Active Engagement	1, 409	0.79	.376	.002
Avoidant/Involuntary Coping	1, 409	12.46	< .001	.030
Grief	1, 420	8.76	.003	.020
Negative Affect	1, 424	0.26	.610	.001
Depressed Affect	1, 416	1.77	.184	.004
Somatic Symptoms	1, 416	0.01	.922	.000
Positive Affect	1, 424	0.82	.365	.002
Well-Being	1, 416	1.09	.296	.003
Life Satisfaction	1, 415	0.51	.475	.001

*Note.*

Prolonged illness or “natural causes coded as 1, other (sudden) causes coded as 2

**Table 8**

*One-Way ANOVAs investigating Differences in Emotion Reactivity, Coping, Grief and Adjustment by Receiving Bereavement Counseling.*

Variable	<i>df</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Emotion Reactivity	1, 414	0.02	.882	.000
Active Engagement	1, 408	4.93	.027	.012
Avoidant/Involuntary Coping	1, 408	32.93	< .001	.075
Grief	1, 420	25.17	< .001	.057
Negative Affect	1, 423	15.48	< .001	.035
Depressed Affect	1, 415	11.84	.001	.028
Somatic Symptoms	1, 415	10.71	.001	.025
Positive Affect	1, 423	2.12	.146	.005
Well-Being	1, 415	3.19	.075	.008
Life Satisfaction	1, 414	0.88	.348	.002

*Note.*

Received/receiving counseling coded as 2, not having received counseling coded as 1

**Table 9**

*One-Way ANOVAs investigating Differences in Emotion Reactivity, Coping, Grief and Adjustment by Participation in a Community Bereavement Group.*

Variable	<i>df</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Emotion Reactivity	1, 415	0.07	.778	.000
Active Engagement	1, 409	13.40	< .001	.032
Avoidant/Involuntary Coping	1, 409	16.59	< .001	.039
Grief	1, 421	12.63	< .001	.029
Negative Affect	1, 424	4.81	.029	.011
Depressed Affect	1, 416	3.78	.052	.009
Somatic Symptoms	1, 416	2.89	.090	.007
Positive Affect	1, 424	2.15	.143	.005
Well-Being	1, 416	0.51	.477	.001
Life Satisfaction	1, 415	2.89	.090	.007

*Note.*

Participating in a bereavement group coded as 2, not participating coded as 1

**Table 10**

*One-Way ANOVAs investigating Differences in Emotion Reactivity, Coping, Grief and Adjustment by History of Depression.*

Variable	<i>df</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Emotion Reactivity	1, 417	1.03	.310	.002
Active Engagement	1, 411	2.46	.117	.006
Avoidant/Involuntary Coping	1, 411	26.16	< .001	.060
Grief	1,422	7.59	.006	.018
Negative Affect	1, 426	18.78	< .001	.042
Depressed Affect	1, 418	67.53	< .001	.139
Somatic Symptoms	1, 418	58.11	< .001	.122
Positive Affect	1, 426	0.22	.639	.001
Well-Being	1, 418	41.00	< .001	.089
Life Satisfaction	1, 417	35.63	< .001	.079

*Note.*

Having a history of depression coded as 1, not having a history of depression coded as 0



**Table 11***Correlations between Age, Reactivity, Coping, and Adjustment.*

Variable	1	2	3	4	5	6	7	8	9	10	11
1 Age	—	-.092	.012	-.060	.083	-.074	-.019	-.020	.223**	.062	-.013
2 Emotion Reactivity		—	.392**	.149**	.102*	.056	.143**	.141**	.248**	.129**	.139**
3 Active Engagement			—	.223**	.122*	-.014	.021	.030	.346**	.304**	.297**
4 Avoidant/Involuntary Coping				—	.502**	.421**	.553**	.540**	-.010	-.403**	-.249**
5 Grief					—	.304**	.464**	.412**	-.010	-.313**	-.138**
6 Negative Affect						—	.588**	.547**	-.190**	-.455**	-.271**
7 Depressed Affect							—	.831**	-.217**	-.655**	-.511**
8 Somatic Symptoms								—	-.129**	-.573**	-.455**
9 Positive Affect									—	.408**	.250**
10 Well-Being										—	.593**
11 Life Satisfaction											—

*Note.*\*  $p < .05$ \*\*  $p < .01$

**Table 12**

*One-Way ANOVAs investigating Gender Differences in Emotion Reactivity, Coping, Grief and Adjustment.*

Variable	<i>df</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Emotion Reactivity	1, 412	15.75	< .001	.037
Active Engagement	1, 411	10.18	.002	.024
Avoidant/Involuntary Coping	1, 411	1.58	.210	.004
Grief	1, 411	16.00	< .001	.037
Negative Affect	1, 412	1.91	.167	.005
Depressed Affect	1, 412	1.68	.196	.004
Somatic Symptoms	1, 412	0.82	.365	.002
Positive Affect	1, 412	0.003	.959	.000
Well-Being	1, 412	3.80	.052	.009
Life Satisfaction	1, 412	8.24	.004	.020

*Note.*

Male coded as 1, Female coded as 2

**Table 13***Standardized Regression Weights of the Indicators in the Measurement Model.*

Indicator		Latent Variable	$\beta$	<i>C.R.</i>	<i>p</i>
Negative Affect	←	Negative Well-Being	.612	weighted	
Depressed Affect	←	Negative Well-Being	.959	14.173	< .001
Somatic Symptoms	←	Negative Well-Being	.864	13.798	< .001
Positive Affect	←	Positive Well-Being	.405	weighted	
Well-Being	←	Positive Well-Being	.921	7.800	< .001
Life Satisfaction	←	Positive Well-Being	.654	7.472	< .001

**Table 14***Standardized Regression Weights of the Associations in the Hypothesized Model.*

Variable	Predictor	$\beta$	C.R.	<i>p</i>
Emotion Reactivity	← Age	-.125	-2.607	.009
Emotion Reactivity	← Gender	.208	4.351	< .001
Active Engagement	← Age	.034	.753	.451
Active Engagement	← Gender	.080	1.730	.084
Active Engagement	← Emotion Reactivity	.381	8.185	< .001
Avoidant/Involuntary Coping	← Age	-.066	-1.390	.165
Avoidant/Involuntary Coping	← Gender	.036	.749	.454
Avoidant/Involuntary Coping	← Emotion Reactivity	.124	2.549	.011
Avoidant/Involuntary Coping	← History of Depression	.241	5.109	< .001
Grief	← Gender	.169	3.927	< .001
Grief	← Emotion Reactivity	.002	.032	.974
Grief	← Active Engagement	-.016	-0.342	.732
Grief	← Avoidant/Involuntary Coping	.494	11.691	< .001
Positive Well-Being	← Emotion Reactivity	.159	3.829	< .001
Positive Well-Being	← Active Engagement	.365	6.686	< .001
Positive Well-Being	← Avoidant/Involuntary Coping	-.402	-5.982	< .001
Positive Well-Being	← Grief	-.127	-2.472	.013
Positive Well-Being	← History of Depression	-.207	-4.715	< .001
Negative Well-Being	← Avoidant/Involuntary Coping	.405	7.669	< .001
Negative Well-Being	← Grief	.247	5.200	< .001
Negative Well-Being	← History of Depression	.260	6.017	< .001

*Note.*

Male coded as 1, Female coded as 2

Having a history of depression coded as 1, not having a history of depression coded as 0

**Table 15***Chi Square and Fit Statistics Following Each Change to the Model.*

<i>Change to the Model</i>	<i>df</i>	<i><math>\chi^2</math></i>	<i>CFI</i>	<i>GFI</i>	<i>RMSEA</i>
Initial Model	50	193.384	.924	.934	.084
Direct effect from Gender to Avoidant/Involuntary Coping Removed	51	193.932	.924	.934	.083
Direct effect from Gender to Active Engagement Removed	52	196.848	.923	.933	.082
Direct effect from Age to Active Engagement Removed	53	197.954	.923	.932	.082
Direct effect from Age to Avoidant/Involuntary Coping Removed	54	199.546	.923	.932	.081
Covariance added between Active Engagement and Avoidant/Involuntary Coping	53	179.974	.933	.940	.076
Direct effect added from Gender to Positive Well-Being	52	174.620	.935	.941	.076
Direct effect added from History of Depression to Active Engagement	51	169.758	.937	.942	.075
Direct effect added from Age to Grief (Final Model)	50	165.143	.939	.944	.075

**Table 16***Standardized Estimates of the Relations in the Final Model.*

Variable	Predictor	$\beta$	C.R.	$p$
Emotion Reactivity	← Age	-.125	-2.607	.009
Emotion Reactivity	← Gender	.208	4.351	< .001
Active Engagement	← Emotion Reactivity	.397	8.834	< .001
Active Engagement	← History of Depression	-.100	-2.215	.027
Avoidant/Involuntary Coping	← Emotion Reactivity	.138	2.902	.004
Avoidant/Involuntary Coping	← History of Depression	.239	5.035	< .001
Grief	← Age	.092	2.184	.027
Grief	← Gender	.153	3.593	< .001
Grief	← Emotion Reactivity	.014	0.304	.761
Grief	← Active Engagement	-.020	-0.441	.659
Grief	← Avoidant/Involuntary Coping	.501	11.684	< .001
Positive Well-Being	← Gender	.085	2.263	.024
Positive Well-Being	← Emotion Reactivity	.150	3.536	< .001
Positive Well-Being	← Active Engagement	.365	6.402	< .001
Positive Well-Being	← Avoidant/Involuntary Coping	-.402	-5.781	< .001
Positive Well-Being	← Grief	-.148	-2.759	.006
Positive Well-Being	← History of Depression	-.216	-4.192	< .001
Negative Well-Being	← Avoidant/Involuntary Coping	.404	7.661	< .001
Negative Well-Being	← Grief	.246	5.190	< .001
Negative Well-Being	← History of Depression	.260	6.017	< .001

*Note.*

Male coded as 1, Female coded as 2

Having a history of depression coded as 1, not having a history of depression coded as 0

**Table 17**

*Standardized Direct, Indirect, and Total Effects of Variables in the Final Model.*

Variable	Predictor	Direct	Indirect	Total
Emotion Reactivity	← Age	-.125 **	.000	-.125 **
Emotion Reactivity	← Gender	.208 ***	.000	.208 ***
Active Engagement	← Age	.000	-.050 **	-.050 **
Active Engagement	← Gender	.000	.083 ***	.083 ***
Active Engagement	← Emotion Reactivity	.397 **	.000	.397 **
Active Engagement	← History of Depression	-.100 *	.000	-.100 *
Avoidant/Involuntary Coping	← Age	.000	-.017 *	-.017 **
Avoidant/Involuntary Coping	← Gender	.000	.029 **	.029 **
Avoidant/Involuntary Coping	← Emotion Reactivity	.138 **	.000	.138 **
Avoidant/Involuntary Coping	← History of Depression	.239 ***	.000	.239 ***
Grief	← Age	.092 *	-.009	.083
Grief	← Gender	.153 **	.016	.169 **
Grief	← Emotion Reactivity	.014	.061 *	.075
Grief	← Active Engagement	-.020	.000	-.020
Grief	← Avoidant/Involuntary Coping	.501 ***	.000	.501 ***
Grief	← History of Depression	.000	.122 ***	.122 ***
Positive Well-Being	← Age	.000	-.042 **	-.042 **
Positive Well-Being	← Gender	.085 *	.025	.110 **
Positive Well-Being	← Emotion Reactivity	.150 ***	.079 *	.229 ***
Positive Well-Being	← Active Engagement	.365 ***	.003	.368 ***
Positive Well-Being	← Avoidant/Involuntary Coping	-.402 ***	-.074 **	-.476 ***
Positive Well-Being	← Grief	-.148 **	.000	-.148 **
Positive Well-Being	← History of Depression	-.216 ***	-.150 ***	-.366 ***
Negative Well-Being	← Age	.000	.013	.013
Negative Well-Being	← Gender	.000	.053 ***	.053 ***
Negative Well-Being	← Emotion Reactivity	.000	.074 *	.074 **
Negative Well-Being	← Active Engagement	.000	-.005	-.005
Negative Well-Being	← Avoidant/Involuntary Coping	.404 **	.123 ***	.527 **
Negative Well-Being	← Grief	.246 ***	.000	.246 ***
Negative Well-Being	← History of Depression	.260 ***	.126 ***	.387 ***

*Note.*

Male coded as 1, Female coded as 2

Having a history of depression coded as 1, not having a history of depression coded as 0

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$

**Table 18***Exploratory Correlations.*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Resilience	—	.347**	.189**	.005	.234**	-.350**	-.309**	-.326**	-.462**	-.383**	.306**	.492**	.406**
2 Gratitude		—	.323**	.253**	.337**	-.288**	-.114*	-.262**	-.379**	-.300**	.326**	.570**	.565**
3 Posttraumatic Growth			—	.324**	.626**	.173**	.171**	.001	-.064	-.036	.309**	.301**	.295**
4 Emotion Reactivity				—	.392**	.149**	.102*	.056	1.43**	.141**	.248**	.129**	.139**
5 Active Engagement					—	.223**	.122*	-.014	.021	.030	.346**	.304**	.297**
6 Avoidant/Involuntary Coping						—	.502**	.421**	.553**	.540**	-.010	-.403**	-.249**
7 Grief							—	.304**	.464**	.412**	-.010	-.313**	-.138**
8 Negative Affect								—	.588**	.547**	-.190**	-.455**	-.271**
9 Depressed Affect									—	.831**	-.217**	-.655**	-.511**
10 Somatic Symptoms										—	-.129**	-.573**	-.455**
11 Positive Affect											—	.408**	.250**
12 Well-Being												—	.593**
13 Life Satisfaction													—

*Note.*\*  $p < .05$ \*\*  $p < .01$



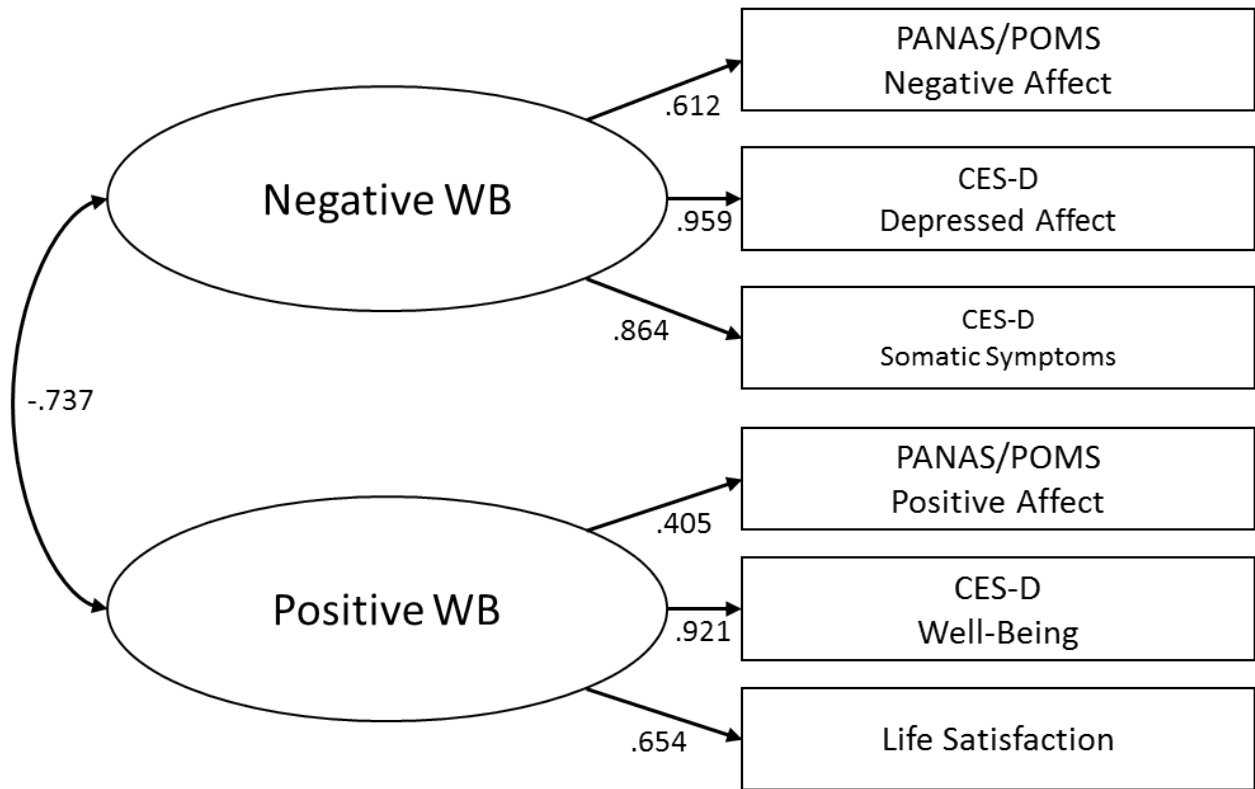


Figure 1. Structural equation model examining the latent positive and negative well-being constructs.  $\chi^2(8) = 28.816, p < .001, CFI = .982, GFI = .976, RMSEA = .080$ .

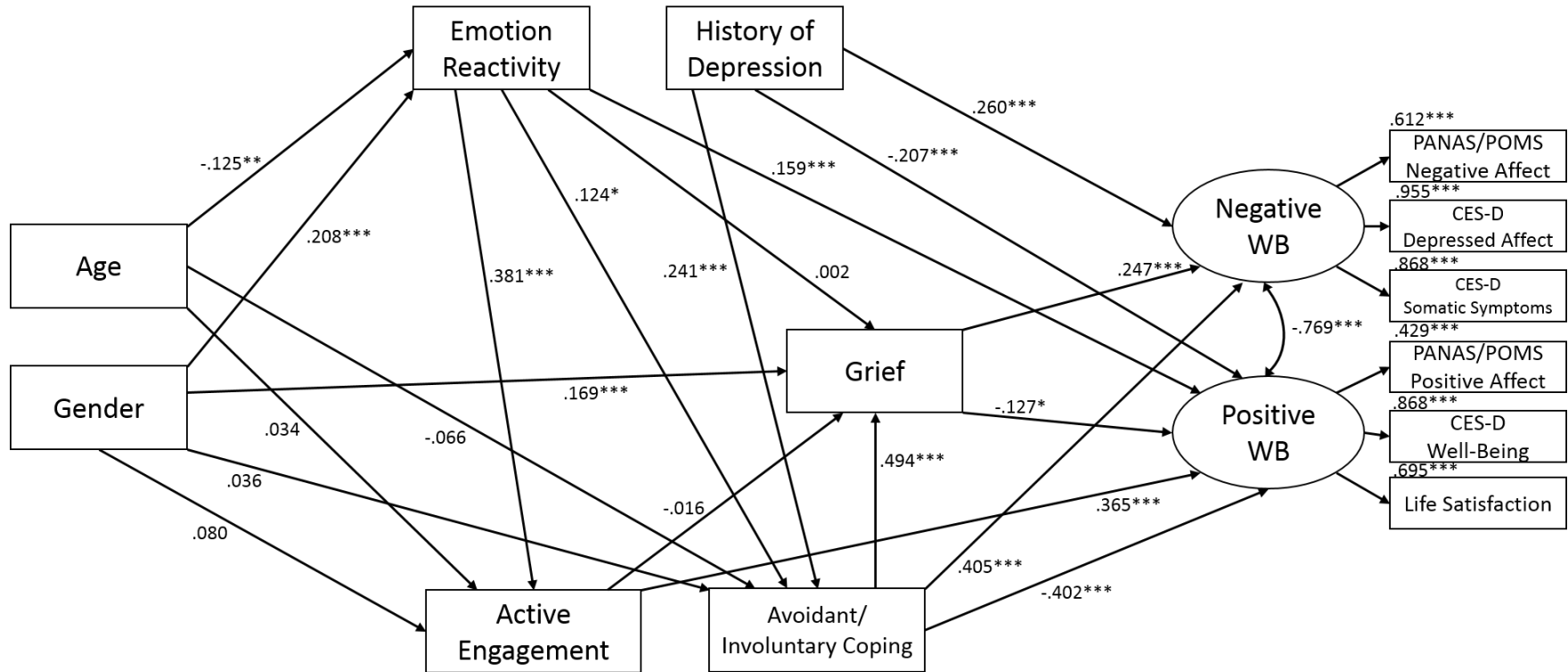


Figure 2. The hypothesized model.  $\chi^2(50) = 193.383, p < .001, CFI = .924, GFI = .934, RMSEA = .084$ .

Male coded as 1, Female coded as 2

Having a history of depression coded as 1, not having a history of depression coded as 0

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$

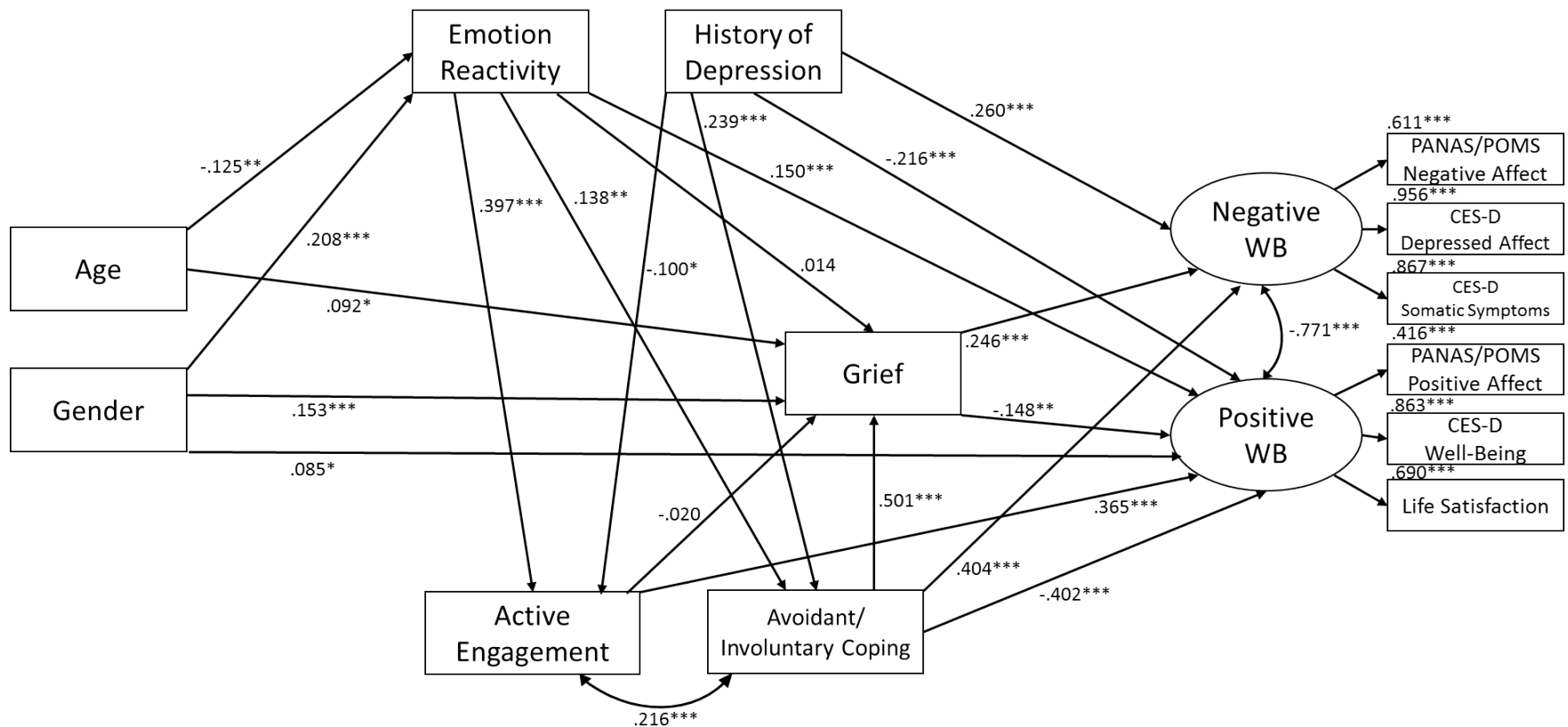


Figure 3. The final model.  $\chi^2(50) = 165.143, p < .001, CFI = .939, GFI = .944, RMSEA = .075. R^2$ : Emotion Reactivity = .059, Active Engagement = .168, Avoidant/Involuntary Coping = .076, Grief = .284, Positive Well-Being = .469, Negative Well-Being = .457.

Male coded as 1, Female coded as 2

Having a history of depression coded as 1, not having a history of depression coded as 0

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$