

EFFECTS OF ECONOMIC HARDSHIP ON COMPLICATED GRIEF

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Abstract

Complicated grief is an intense and persistent type of grief which appears to be distinct from depression. Despite the importance of this recently defined syndrome, we are only beginning to learn what factors make people vulnerable to it. Various stressors have been found to be associated with complicated grief, however, to date, studies have focused on individual stressors, such as negative cognition and attachment style. Contextual stressors, such as economic hardship, are probably important, and have been understudied. Additionally, depression may itself be a risk factor for complicated grief, as recent evidence supports that individuals with depression are more likely to have complicated grief symptoms. Using the REACH data which was prospectively collected from caregivers of Alzheimer's patients, first this study found that complicated grief is distinct from depression by confirming the two-factor structure (i.e., Complicated Grief vs. Depression); and second, it found the indirect effect of economic hardship on complicated grief through depression. Future research will need to replicate these findings with larger and more heterogeneous samples, and with more comprehensive measure of economic hardship.

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PREFACE

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I hope my dissertation will bring a little light of hope to people who lost a loved one and suffer from economic hardship during the hard time, and will convey a message that bereaved people with economic hardship need special care.

“When the Lord saw her, his heart went out to her and he said, "Don't cry." -Luke 7:13

Chapter I. Introduction

A. Problem Statement

Complicated grief is a an intense and persistent type of grief that can consist of separation distress as well as cognitive, emotional, and behavioral symptoms (Prigerson et al., 2009; Shear et al., 2011) and which appears to be distinct from depression. Complicated grief is common; it appears to affect 10-20% of bereaved individuals (Barry, Kasl, & Prigerson, 2002; Schulz et al., 2006), Despite the importance of this recently defined syndrome, we are only beginning to learn what factors make people vulnerable to it. Various risk factors have been found to be associated with complicated grief, however, to date, studies have focused on individual factors, such as negative cognition and attachment style. Contextual factors, such as economic hardship, are probably important, and have been understudied. The REACH study of caregivers, which followed caregivers of Alzheimer's patients for two years, allows us to advance understanding of the construct of complicated grief and the effect of economic hardship on complicated grief.

Depression is one of the individual risk factors studied, and that depression may itself be a risk factor for complicated grief. Recent evidence supports that contextual factors such as economic hardship may influence depressive symptoms. This dissertation study suggests depression may have a role in both predicting complicated grief and mediating the relationship between risk factors and complicated grief.

This study uses the REACH data to extend knowledge about complicated grief in two ways. First, the study will confirm and advance knowledge about the separate nature of complicated grief and depression; and second, it will test whether economic hardship predicts complicated grief, and if so, whether it exerts its influence independently, or through depression.

A-1. Complicated Grief is a Debilitating Mental Disorder

Although most individuals who lose a loved one express strong emotional reactions to the death, such as recurrent and strong yearning, non-acceptance of the death, guilt, and anger, they gradually overcome these painful emotions, accept the loss and move forward. In contrast, individuals who experience complicated grief differ from more normal grievers in that their course of grieving is longer and they exhibit additional symptoms which qualitatively diverge from normal grief reactions (Bonnano et al., 2001; Stroebe et al., 2005). For those with complicated grief, the grief reactions are noted at least six months after the loss and may include still feeling shocked by the loss, difficulty accepting the loss, and an absence of emotion since the loss (Prigerson, Vanderwerker, & Maciejewski, 2008).

The effects of complicated grief are long lasting and deleterious. Complicated grief has been found to be associated with both physical and mental health outcomes. Complicated grief is associated with physical health outcomes such as high blood pressure (Prigerson et al., 1997), sleep disturbance (Germain et al., 2005; Maytal et al., 2007), health status and general functioning (Silverman et al., 2000). Complicated grief is also associated with mental health outcomes such as suicidal behavior (Latham & Prigerson, 2004) and overall mental health status (Ott, 2003).

Studies that report the prevalence of complicated grief found 10-20% of bereaved individuals met the accepted criteria. The REACH data that this dissertation will analyze found that 19.8% of individuals bereaved met the criteria of complicated grief (Schulz et al., 2006). Other studies from the US also show 10-20% of prevalence of complicated grief. Additionally, evidence regarding the prevalence of complicated grief examined at non-US area also found 10-20% of bereaved individuals met the criteria of complicated grief. Because most people

experience a loss of their loved one sometime in their lives, many people may be exposed to complicated grief. Importantly for social workers, clients that social workers serve experience a loss in many different areas that social work undertakes, a sizable number of people who are exposed to complicated grief are in need of social work interventions.

A-2. Complicated Grief is Different from Depression

Complicated grief was defined in the 90's by clinicians whose experience strongly suggested an as-yet-undescribed condition that was not normal grieving, and also appeared to be different from depression. These clinical observations have been followed up with careful empirical work. Two lines of work have developed: Clinical observations of treatment effects and psychometric analysis differentiating grief and depression symptoms. It has been reported from observations from clinical settings that symptoms of complicated grief have been mainly unresponsive with tricyclic antidepressants (Pasternak et al., 1991; Reynolds et al., 1999). These findings can suggest that the underlying features of complicated grief are distinct to that of depression. In light of this evidence obtained from clinical research, it was noted that a clear understanding of the nature of complicated grief would be needed in order to provide a basis for the development of special treatments for complicated grief, and psychometric studies have addressed the need to distinguish complicated grief from depression. Ten studies that used psychometric approaches found that complicated grief is a construct that is distinct from depression (Boelen & van den Bout, 2005; Prigerson & Jacobs, 2001; Prigerson, Frank et al., 1995). It is noted that complicated grief and depressive symptoms often do not overlap, and distinguished the symptom cluster of complicated grief (Horowitz, 2003).

This preliminary evidence suggests that complicated grief is distinct from depression. However, no study to date, have examined the factor structure of complicated grief and

depression among bereaved caregiver population. Further analyses confirming the separate nature of grief and depression are valuable, and this forms the first aim of this dissertation study.

A-3. Stress Can Cause Complicated Grief

The other aim of this dissertation study is to examine the effect of economic hardship on complicated grief. To examine this relationship, this study adopts the stress diathesis model that predicts that stress can cause mental problems. Economic hardship may be an important form of stress that could contribute to the causation of complicated grief according to a stress diathesis model.

Stress Diathesis Model This model focuses on the interaction between a predisposition toward disease—the diathesis¹—and environmental, or life, disturbances—the stress (Davidson, Neale, & Kring, 2004). The stress-diathesis model proposes a preexisting, often inherited, disposition or “vulnerability” for an illness. This framework hypothesizes that the illness becomes manifest when a vulnerable individual is exposed to a particular type of “triggering” event of stressor. Contemporary stress-diathesis models in mental health have focused on specific illnesses, with particularly well developed models for schizophrenia and depression (Meehl, 1962; Spring & Coons, 1982; Monroe & Simons, 1991).

In the context of the stress-diathesis model, noxious events become stressors if they overwhelm the ability of the organism to cope with the event. Stressors include major traumatic events (e.g., death of a spouse; becoming unemployed), as well as environmental happenings (e.g., economic hardship). In line with this conceptual frame, economic hardship could be

¹ Diathesis refers to most precisely to a constitutional predisposition towards illness, but the term may be extended to any characteristic or set of characteristics of a person that increases his or her chance of developing a disorder. In the psychological realm, for example, a diathesis for depression may be the cognitive set already mentioned, the chronic feeling of hopelessness sometimes found in depressed people. Or taking a psychodynamic view, an extreme sense of dependency on others could also be a diathesis for depression (Davidson, Neale, & Kring, 2004).

hypothesized to be a stressor (i.e., risk factor) that could cause mental disorders including complicated grief. Economic hardship can be a particularly intense and persistent stressor. It is noteworthy that economic hardship may be of special importance in bereavement, which is a time of potentially significant economic changes (Holden, 2002).

Stressors clearly increase a person's risk of developing health problems (McEwen, 1993). Stressors can increase arousal of the sympathetic nervous system and prepare an organism for an action (Cannon, 1939; Selye, 1956), for example, more oxygen to flow to the brain allowed by increased blood pressure, heart rate, and respiration rate; informed immune system about coming challenge by molecules, neurotransmitters and hormones from the brain and endocrine system. However, if stressors are severe and sympathetic system arousal is prolonged, it can lead to exhaustion, distress and disease, with concomitant adverse affects on health. There is a well-known specific route from stress to physical disease and illness: *allostasis* which refers to the superordinate system by which stability was achieved through change (McEwen, 1993). Central nervous system processes [i.e., the hypothalamic-pituitary-adrenocortical (HPA) axis] can be the primary mediator of allostasis (Herman et al., 2003). It is useful to note that within the study of mental disorders, a number of prominent theories postulate a role for stress in the explanation of psychological disturbance. These theories will be discussed in greater detail in Chapter 2, and include psychoanalytic theory, (Freud, 1917/1957), cognitive therapy models (Haaga et al., 1991), transactional model (Lazarus, 1984), and stress appraisal model (Pearlin & Schooler, 1978), as will be described in the next chapter.

Known Contributors to Complicated Grief Some progress has been made towards understanding who is vulnerable to complicated grief. Recent studies of factors affecting complicated grief show that individuals with high levels of depressive symptoms (Schulz et al.,

2006; Shear et al., 2006), high levels of caregiving burden, feelings of exhaustion or being overloaded, or who experience traumatic or unexpected death are particularly vulnerable to complicated grief (Beery et al., 1997; Hebert, Dang & Schulz, 2006; Kramer, 2011; Melhem et al., 2004; Mitchell et al., 2004; Schulz et al., 2006; Shear et al., 2006). Notwithstanding this progress, the small percentage of variance that the risk factors explained in the studies suggests that unknown important factors still exist. This dissertation contributes to building a body of knowledge regarding risk factors for complicated grief.

An important and potentially understudied area is economic stress, which may contribute to complicated grief. Economic stress has only recently been recognized as an important source of stress, and we are just beginning to learn its effects on physical and mental health. According to Khan and Pearlin (2006) “among the array of chronic stressors that people may confront in their daily lives, there is probably none more pivotal than economic hardship” (p. 18). Recent studies have linked economic hardship with negative mental health outcomes including depression throughout the life course (Drentea & Goldner, 2006; Hanratty, Holland, Jacoby, & Whitehead, 2007; Pinqart & Sorenson, 2007; Vellone, Piras, Talucci, & Cohen, 2008).

Economic stress may be of special importance in bereavement, which is time of potentially significant economic changes. The death of a partner often contributes to a change in economic status because of losing income or social security benefits. In the first year postloss, the percentage of widows living in poverty increases by 10% to 22% (Hungerford, 2001). Declines in income postloss are substantial (Hungerford, 2001) and occur over a 5-year period (Zick & Smith, 1991). Given the evidence that economic stress can heighten risk of depression and depression is a clear risk factor for complicated grief, it is reasonable that economic hardship

can cause depression and, in turn, can increase the level of complicated grief, and that economic hardship can exacerbate the effect of depression on complicated grief.

Economic stress is of special significance to social workers, who have a special interest in people living in poverty, and contextual (i.e., policy) solutions to economic problems. Social work has a long tradition of using an integrated holistic perspective encompassing individual and structural problems including economic hardship and, as such, social work research can play an important role in understanding unknown factors affecting complicated grief. Most importantly, elucidating the association between economic stress and complicated grief can open possibilities for developing policies or social work services to alleviate the negative impact of complicated grief by reducing or eliminating the stressful economic events of socially disadvantaged people.

B. Data Analysis

This dissertation analyzes an existing dataset (Resources for Enhancing Alzheimer's Caregiver Health, REACH) to examine (1) whether complicated grief is a different construct from that of depression; and (2) whether economic stress contributes to vulnerability to complicated grief. The REACH data is of special value, because it is a prospective study, and because complicated grief, depression, and economic hardship are all measured. The prospective data from the REACH study allows this study to obtain the construct validity of complicated grief and the unique effect of economic hardship in bereavement on complicated grief, adjusting for the information assessed before the loss.

The REACH study followed people caring for someone with Alzheimer's disease for two years. The primary purpose of the study was to test the effectiveness of various psychosocial interventions on caregiving challenges (e.g., skill training, telephone-linked care support, coping with caregiving and enhanced care intervention, see Chapter 3 for more details). In total, 221

participants of the 1,222 in the study experienced bereavement during the course of the study. Using the Inventory of Complicated Grief (Prigerson et al., 1995), complicated grief was measured for the 221 participants who lost their care-recipients during the course of the study and completed at one, two, or three follow-up assessments. Depression and economic stress were measured at every time point, providing an opportunity to examine prospectively the relationships among economic hardship, complicated grief, and depression.

Taken together, the results of these aims are used to derive implications for future development in conceptualization of complicated grief of bereaved individuals. The analytic aims that are examined herein take an important step in identifying the significance of economic hardship as a target for social work intervention. In the presence of significant relationship between economic stress and poor mental health in bereavement, findings from this research can be directed toward existing treatment efforts to enhance their effects in an effort to reduce complicated grief among bereaved dementia caregivers.

Chapter II. Literature Review

A. Overview of Complicated Grief

Complicated grief is a deviation from normal grieving that most bereaved people experience and it is a distinct mental disorder from and other commonly known mental symptoms such as depression. Complicated grief is common in bereaved people, as it is reported that 10-20% of bereaved individuals have complicated grief. In addition to the distress associated with the symptoms of complicated grief, people who experience this disorder are also at risk for poor health outcomes. The sizeable number of people with complicated grief has been found to have worse health outcomes than people without complicated grief. This section provides the evidence regarding the distinctive features of complicated grief from normal grief and depression and a review of the prevalence of complicated grief is followed.

A-1. Normal Grief vs. Complicated Grief

Normal grief is “an emotional reaction to bereavement, falling within expected norms, given the circumstances and implications of the death, with respect to time course and/or intensity of symptoms” (Stroebe, Hansson, Schut, & Stroebe, 2008), with bereavement being the death of a specific person. Generally, normal grieving is a common emotional reaction to the death of a loved one, whereas complicated grief is a significant deviation from the common emotional reaction to the death of a loved one. More specifically, individuals who experience complicated grief differ from more normal grievers in that their course of grieving is longer and they exhibit additional symptoms which qualitatively diverge from normal grief reactions (Bonnano et al., 2001). For those with complicated grief, for instance, the grief reactions are noted at least six months after the loss and may include still feeling shocked by the loss, difficulty accepting the loss, and an absence of emotion since the loss (Prigerson &

Vanderwerker, 2008). Examples of normal grief and complicated grief from a recent article are presented here below (Shear et al., 2011).

Normal grief

“Patricia lost her husband from cancer. For the first month after Paul died, Patricia could think about little else. She felt intense feelings of yearning and longing for his husband, and had trouble concentrating on other things. Patricia felt that her mind was in a fog and she had little control over her emotions or her thoughts. She kept having a strange sensation that her husband walked through the door. Her sister suggested she see a grief counselor. The counselor explained that many people have this kind of experience and Patricia understood that her symptoms were normal. After a few months, Patricia started to laugh again. She accepted an invitation to go out with friends and she had a good time. A vision of her life without Paul began to emerge and the intensity of yearning for him subsided. She continued to miss him a lot over the first few years after he died. There were periods during the second year that seemed even harder than the first, but she got through it and continued to feel increasingly engaged in her current life.”

Complicated grief

“Elaine lost her husband from cancer. She had been by his side throughout his illness. She hated thinking that he was going to die, but had thought she was prepared. She expected that she would grieve for a few weeks and the feelings would subside and she would cope. However, the night Steve died, Elaine had been exhausted and had fallen asleep in the hospital day room. She was awakened by a nurse who gently told her that Steve had passed. As it turned out, she was unprepared for the feelings of shock and disbelief that swept over her as she cried out “NO! NO! NO! Not yet! Not now!” She was caught off guard by the onslaught of symptoms that began immediately and were unremitting. There was a sense of confusion and powerful feelings of protest and despair. She experienced a deep yearning and longing for Steve, and waves of anxiety about how she would manage without him. In the weeks and months that followed, she found

respite from painful feelings only by entering a state of foggy numbness that felt like a veil separating her from the rest of the world, or by daydreaming about her life with Steve. She felt strangely disconnected from her friends and even from her children. It was hard to think about anything other than Steve, as she reviewed in her mind his many talents and admirable traits and the unfairness of his illness and death. She could not remember ever feeling so helpless. It seemed that she did not know what to say to other people and felt barely capable of shopping in a grocery store or completing the simplest chore. She soon began trying to avoid reminders that would trigger intense emotions or physical symptoms. She ruminated on the tragedy of Steve's premature death and puzzled over why others did not seem devastated by the loss of this wonderful man. Her life had never felt so out of control. She frequently thought it would have been better for her to have died instead of him. She often considered suicide but was stopped by the thought that she might not ever be reunited with her beloved husband. Caught up in thoughts of Steve as an extraordinary person and herself as pathetic and weak, she began to feel hopeless and depressed. Her intense grief continued unremitting.

Elaine consulted Dr. M, a psychiatrist, and found him kind and supportive. He told her that she was depressed and prescribed medication that was somewhat helpful. He sent her to a grief counselor whom she saw for about a year. Elaine liked the counselor, but her symptoms did not remit and eventually she stopped going. Dr. M tried to talk with her about her idealization of her husband and suggested that she must be angry at Steve for leaving her. These efforts fell on deaf ears, and there was little change over the years. Elaine's life consisted of weekly visits to Dr. M, the only place she could talk about Steve and feel some comfort. She changed jobs and did only what was needed to make ends meet. In the evenings, she stayed home. When she tried to venture elsewhere, she was assaulted by reminders Steve's loss. "I was convinced that all I needed was to have Steve back and Dr. M could not do that."

As seen in the example of normal grief, most individuals who lose a loved one express recurrent and strong yearning, have steady stream of thoughts of the deceased person, feel disconnected from the world or other people, and struggle to accept reality of the death. However, they gradually overcome these initial emotions and cognitions and accept the reality and move forward, whereas persons with complicated grief experience a significant deviation from the common emotional reaction to the death of a loved one (Stroebe, 2005). Not only can be complicated grief defined as a different concept from normal grief, but it has been defined as a distinctive mental disorder from depression, as suggested that some features of depression are similar with complicated grief. Evidence regarding the distinctive features of complicated grief from depression are presented next.

A-2. Complicated Grief vs. Depression

Recent examinations have reported that complicated grief is not only unique from normal grief reaction, but it also unique from depression. Two lines of work have developed: Treatment response and Psychometric analysis. There studies support that complicated grief can be a distinct construct from depression. What follow is summaries of recent findings on the differentiation of complicated grief from depression.

As can be seen Table 1, four studies revealed that symptoms of complicated grief have been mainly unresponsive with tricyclic antidepressants (Pasternak et al., 1991; Paternak et al., 1994; Prigerson et al., 1995; Reynolds et al, 1999). The first randomized, double-blind placebo-controlled evaluation of a pharmacotherapy (nortriptyline) and of interpersonal psychotherapy in the acute-phase treatment of bereavement-related major depression and complicated grief was examined with eighty people aged 50 years and older who have major depressive episodes (Reynolds et al., 1999). They found that subjects assigned to pharmacology therapy improved in

bereavement-related major depressive episodes, whereas no effect of the treatment condition for complicated grief was found. The authors suggested that complicated grief may represent unresolved problems of loss and difficulty in performing role transition tasks that are not amenable to intervention for depression, and may need to be more specific resolution of complicated grief. A recent clinical report revealed a specifically designed treatment of complicated grief was examined with 85 bereaved individuals who met the criteria of complicated grief (Shear et al., 2005). They found that for both complicated grief and depression, the response rate was greater for complicated grief treatment than for interpersonal psychotherapy and time to response was faster for complicated grief treatment. These findings can suggest that the underlying features of complicated grief are distinct to that of depression.

A separate line of research has begun to examine the distinct construct validity of complicated grief from depression using psychometric analytic approaches. Ten studies have examined a distinction of complicated grief from depression using psychometric analyses such as exploratory and confirmatory factor analysis. As presented in Table 1, psychometric studies have consistently found that complicated grief represents a distinct construct from depression. Prigerson et al. (1995) found that extracting depressive, anxiety-related, and general grief items from a principal axis exploratory factor analysis yielded two factors: a unitary latent construct that labeled complicated grief and the other latent construct that labeled depression.

Table 1.

Summary of Studies on Distinction of Complicated Grief from Depression

Author	Year	N	Sample	Method	# of Factor	Symptom Clusters
<i>Psychometric Analysis</i>						
Prigerson	1995	82	whose spouses had died and who were recruited to participate in a study of changes in sleep physiology in bereavement	EFA	2	CG, Depression
Prigerson	1996	135	whose spouses were admitted with life-threatening illnesses to Yale-New Haven Hospital and the Hospital of St. Raphael	EFA	3	CG, Depression, Anxiety
Boelen	2003	103	who had sought treatment at different outpatient clinics in the Netherlands	EFA	3	CG, Depression, Anxiety
Boelen	2005	1,321	who had participated in a research program on cognitive variables in complicated grief	CFA	3	CG, Depression, Anxiety
Dillen	2009	245	who had participated in a broader research project on grief and who lost their grandfather	EFA	3	CG, Depression,

							Anxiety
Jacobsen	2010	123	who were recruited from as part of an ongoing multi-site investigation of advanced cancer patients and their caregivers called the Coping with Cancer (CWC) study	EFA	2	CG, Depression	
Golden	2010	223	who recruited from the community in Croatia in response to advertisements of a larger research examining grief, trauma, and grief	EFA	4	CG, Depression, Anxiety, PTSD	
Schaal	2012	400	who experienced the Rwandan genocide in 1994 and lost their husbands and who were recruited by the nongovernmental organization, African Evangelistic Enterprise (AEE)	EFA	4	CG, Depression, Anxiety, PTSD	
<i>Treatment Response</i>							
Author	Year	N	Sample	Method		Findings	
Jacobs	1987	19	who were screened by death certificates registered in the city's Office of Vital Statistics. The bereaved spouses was called and screened for depression with CESD and SCID. If criteria for depression were met on the assessments, the participant was invited for the treatment.	ANOVA		Depression but not CG improved	
Pasternak	1991	13	Part of a larger group of elderly volunteers with spousal bereavement participating in an investigation of electroencephalographic (EEG) sleep	ANOVA		Depression but not CG improved	

			changes associated with bereavement-related depression.		
Pasternak	1993	33	Part of a larger group of elderly volunteers with spousal bereavement participating in an investigation of electroencephalographic (EEG) sleep changes associated with bereavement-related depression.	R- ANOVA	CG more stable than depression
Reynolds	1999	80	who self-referred in response to print advertisements sent from the investigators to surviving spouses identified in obituaries, and few who were clinically referred.	R- ANOVA	Depression but not CG improved

Note. EFA – Exploratory Factor Analysis, CFA – Confirmatory Factor Analysis

Based on the evidence examined above, studies that examined a distinction of complicated grief from depression support that complicated grief has distinctive clinical and conceptual features from depression. This evidence suggest a critical basis for distinguishing complicated grief from depression that can provide a base for development of a specific treatment for complicated grief. Based on this rationale for examination of a distinction of complicated grief from depression among dementia caregiver population, this dissertation examines the distinctiveness between complicated grief and depression among this population. This dissertation study is the first empirical study to examine a distinction of complicated grief from depression that can allow to address the unique features of complicated grief symptoms from depression among bereaved caregiver population and the development of an intervention for this population.

A-3. Prevalence of Complicated Grief

Recent examinations have reported that the prevalence of complicated grief is approximately 10-20% of bereaved individuals, despite varied measures and sampling techniques. As can be seen in Table 2, studies that used a large sample (i.e., > 200) found 10-20% of bereaved individuals met the criteria of complicated grief.²

Examination of the prevalence of complicated grief among caregiver population found that 10-20% of bereaved caregivers experience complicated grief. Using the REACH data that this dissertation will analyze, Schulz et al. (2006) followed a group of 217 bereaved dementia caregivers and found that 19.8% met the criteria of complicated grief according to the ICG total score 30 or above.

The studies of treatment trials present a higher prevalence of complicated grief. Simon et al. (2011) studied 782 bereaved individuals who recruited through public advertisement or

² Twenty eight studies examining prevalence of complicated grief are shown in Table 2.

clinical referral to participate in research studies. Complicated grief cases were defined as individuals bereaved at least 6 months who were seeking care for complicated grief, had an ICG ≥ 30 , and received a structured clinical interview for complicated grief by a certified clinician confirming complicated grief as their primary illness. They found 36.8% met the criteria of complicated grief.

Those who experienced traumatic events show a higher prevalence of complicated grief. Neria et al. (2007), in a web-based study of 704 family members of the September 11 victims, recruited adult participants over the time period of 2.5-3.5 years after the September 11 using a convenience sampling technique and they found 23% met the criteria of complicated grief assessed by the Prigerson's nine item measures which consider positive when a participant rates 4 or 5 (*often* or *always*) at least five symptoms.

There is also evidence regarding the prevalence of complicated grief examined at non-US area. Fujisawa et al., in a study of 969 who were nationwide randomly selected Japanese bereaved individuals within the past five years, found 25.1% of study participants met the criteria of complicated grief according to the Brief Grief Questionnaire total score 8 or above (Shear et al., 2006). Newson et al. (2011) followed 5,741 bereaved individuals in the Netherlands and they found 25.4% met the criteria of complicated grief assessed by the ICG. They defined individuals scored 25 or above at the ICG total as complicated grief case. Kersting et al. (2011), in a study of 2,520 bereaved individuals in Germany, found 6.7% of study participants met the consensus criteria of complicated grief (Prigerson et al., 1999) using German version of ICG-R. Despite varied measures and sampling techniques, evidence appears strong that between 10 and 20% of people who are bereaved will experience complicated grief meriting clinical attention and social work should address complicated grief.

Table 2.

Prevalence of Complicated Grief

Author	Year	N	Sampling	% of CG Cases	CG Measure
<i>Bereaved Caregiver Sample</i>					
Schulz	2006	217	REACH study (described in details in next Chapter)	19.8%	ICG
Barry	2002	122	who were recruited through AARP Widowed Persons Service contact list that provided recently widowed people.	13%	ICG-R
Keesee	2008	157	who were in response to the advertisement to two AU southeast chapters of a support group network for family caregivers (The Compassionate Friends)	27.4%	ICG
Chiu	2010	668	who were recruited from a contact list of terminal cancer patients who had previously been treated in a hospital	24.6%	ICG
Meert	2010	261	who were recruited from a contact list of parents who had participated in a study project in parental bereavement from The National Institute of Child Health and Human Development Collaborative Pediatric Critical Care Research Network (CPCCRN)	29%	ICG
Holtlander	2011	280	who recruited from a contract list of primary caregivers of patients with advanced	23.9%	ICG

			cancer who previously resided two hospice programs		
Meert	2011	138	Parents of children who died in a ICU at a hospital, and who were asked to complete a survey 6 months after the death	38%	ICG
<i>Natural Death (U.S.)</i>					
Latham	2004	306	who were recruited through AARP Widowed Persons Service contact list that provided recently widowed people.	11.3%	ICG-R
Johnson	2007	192	who were recruited through a community outreach program	8.9%	ICG-R
Sung	2011	196	whose data was collected from a larger study on chronic depression and stress	12.8%	ICG
Gupta	2011	64	who were recruited through Internet and newspaper advertisement, fliers, support group referrals in the New York City	37.5%	11 CG associated questions
Wagner	2011	85	Immediate family members whose family member died by assisted suicide	4.7%	ICG-SF
<i>Natural Death (Non U.S.)</i>					
Boelen	2010	160	who were recruited from professional and lay mental health care workers (e.g., grief counselors, therapists, clergy)	13.8%	11 modified ICG-R
Fujisawa	2010	969	who were randomly identified 5,000 subjects in four areas of Japan.	25.1%	Brief Grief Questionnaire
Kersting	2011	2520	who were randomly selected general population in Germany	6.7%	German version of ICG-R

Newson	2011	5,741	data were collected from an ongoing study of older adults in the Netherlands	25.4%	ICG
<i>Traumatic Death Sample</i>					
Dyregnov	2003	232	who had participated in a study of parents who bereaved by suicide their children	24.6%	ICG
Melhem	2004	146	Friends of 26 of suicide victims whose families agreed to participate in a psychological autopsy in Pittsburgh	25%	ICG
Shear	2011	160	who were randomly selected families applying for American Red Cross assistance, and who were affected by Hurricane Katrina	16.3%	Brief Grief Questionnaire
Neria	2007	704	who were invited to participate in the study through websites of 9/11 family organizations	43%	ICG-SF (9 items)
<i>Treatment Trials</i>					
Simon	2005	103	who sought clinical care who were willing to participate in Systematic Treatment Enhancement Program for Bipolar Disorder	24.3%	ICG
Shear	2006	72	who had participated in a counseling program for 9/11 victims (Project Liberty)	43.1%	Brief Grief Questionnaire
Maytal	2007	106	who were recruited for a larger investigation of suicidality in individuals with bipolar disorder, participating in a Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD), and who lost their family members.	22.6%	ICG
Kersting	2009	70	who were diagnosed unipolar disorder inpatients in the department of psychiatry,	18.6%	ICG

			Univ. of Muenster, and who lost their family members		
Simon	2010	782	who recruited through advertisement or clinical referral to participate in research studies at Columbia University, the University of Pittsburgh, or Massachusetts General Hospital who reported the death of a loved one	36.8%	ICG

Note. ICG – Inventory of Complicated Grief; ICG-R – Inventory of Complicated Grief Revised; ICG-SF – Inventory of Complicated Grief Short Form

A-4. Theoretical Framework

Because complicated grief is recently defined, a theoretical framework describing it has not yet been comprehensively defined. However, it seems clear that as for many mental and physical disorders, stress is an important risk factor for the development of this disorder. The stress-diathesis model clearly connects stress to mental illness by positing that vulnerability and stressful life events can trigger a mental disorder. This section provides an explanation of the stress-diathesis models and psychosocial stress models of mental disorders in order to provide a theoretical framework for the relationship between contributing factors and complicated grief.

The Stress-Diathesis Model. The stress-diathesis model of mental disorder proposes a preexisting disposition or “vulnerability” for an illness. This model hypothesizes that the illness becomes manifest when a vulnerable individual is exposed to a particular type of “triggering” event or stressor. In the following segments of this section, evolving psychosocial conceptualizations of the interaction of vulnerability, stressors, and mental disorder are addressed.

Vulnerability. An individual’s vulnerability to develop a mental disorder is likely to be a function of a variety of factors. Genetics almost certainly play a role in determining vulnerability to most major mental disorders. Recent studies show evidence of number of biological factors, including G72/G30, catechol-o-methyl transferase, and brain-derived neurotrophic factor (Farmer, Elkin, & McGuffin, 2007; Hamilton, 2009; Hettema, Neale, & Kendler, 2001; Schulze, & McMahon, 2009; Siever, & Davis, 2004; Tienari et al., 2003). Nongenetic factors operating via physiological mechanisms, such as viral infection (Wender et al., 1986), or drug use (Bowers et al., 1990; Cohen, Solowij, & Carr, 2008), may also create vulnerability to illness later in life. Evidence of such nongenetic factors may include radionucleotide studies of cerebral blood flow

in monozygotic twins discordant for schizophrenia, which have found relative hypofrontality in affected twins (Kubicki et al., 2007; Liu et al., 2001).

It has been hypothesized that early psychological trauma may induce chronic biological vulnerability to certain illnesses. For instance, Breier et al. (1988) pointed out that early loss has been associated with neurobiological alterations in animal studies. Their findings in humans indicate that neuroendocrine alterations in the hypothalamix-pituitary-adrenal (HPA) axis were associated with poorer quality of life and adaptation after parental loss in those with psychopathology compared with those without mental illness who also experienced early loss. Occurrence of illness also may make an individual more susceptible to recurrence of illness. Post (1992) suggested that sensitization to episode occurrence affects physiology at the level of gene expression, making individuals more vulnerable to subsequent stressors and episodes of illness. Finally, vulnerability has also been hypothesized to be a function of the absence of protective psychosocial buffers, such as cognitive strategies for coping (Safford, Alloy, Abramson, & Crossfield, 2007). The next section provides models that are compatible with the stress diathesis model. The models include the importance of stress, implicitly or explicitly, in that stress can cause a mental illness.

Psychosocial Stress Models of Mental Disorders. Stressful events have played a significant role in most psychological theories on the evolution of disturbed mood or behavior. Sigmund Freud (1856-1939) discussed the effects of stressful events on an individual. For instance, He viewed the role of early “traumatic moments” in producing anxiety in later life, which cannot be dealt with by the rules of the pleasure principle.

Subsequent psychological models continue to explicate that stressful events play a critical role in predicting a mental illness. For instance, cognitive therapy emphasizes cognitive patterns

used by individuals to interpret life events (Haaga et al., 1991). Most psychological treatment models highlight that it is important to understand the perceived meaning of an occurrence. Within that tradition, Lazarus proposed a “transactional” model of life events. This theory holds that psychological stress is determined by the person’s appraisal of a specific encounter with the environment; this appraisal is shaped by factors that include vulnerabilities, beliefs, commitments, and resources (Lazarus & Folkman, 1984, p. 289). This conceptualization provides a framework that links vulnerability and stressors with mental disorders. Research has found that there are certain individual traits that increase vulnerability to complicated grief and that some stressors affect complicated grief. Scientific evidence on the stressors for complicated grief is reviewed with next section.

A-5. Known Risk Factors for Complicated Grief

The stress-diathesis model predicts that complicated grief can be caused by the presence of individual vulnerabilities triggered by stress that the individual may face. For complicated grief, there is no study for the causal effect of predisposition, such as gene expression (i.e., diathesis) on the symptom level of the mental syndrome. However, studies have begun to find stressors for complicated grief that the bereaved individuals face. This section summarizes evidence on known stressors for complicated grief (e.g., factors that make the individual vulnerable and factors that affect complicated grief). One of the aims of this research is to test whether an unknown stressor, economic hardship, predicts complicated grief. An examination of known stressors for complicated grief will provide a basis for examination of the relationship between economic hardship and complicated grief by discussing limits of complicated grief literature and a lack of study on the role of economic stress is followed.

Approximately fifty studies have examined stressors for complicated grief. Stressors have emerged two categories, individual and contextual factors.

A-5-1. Individual Risk Factors

Individual risk factors that have been examined include mental health state, demographic factors, individual trait of the bereaved individuals, and relationship with the deceased. A comprehensive review of previous studies that have examined individual factors affecting complicated grief is shown in Table 3. This section provides a review of two individual factors that this dissertation study analyzes: depression and gender of bereaved individuals.

Depression. Approximately ten studies have addressed depression as a risk factor for complicated grief and all studies found that having depression or higher depression levels is the strong predictor of complicated grief.

Using the REACH study that this dissertation study analyzes, Schulz and his colleagues (2006) assessed predictors of complicated grief among family caregivers of patients with dementia who experience the death of their care recipient. They found post-loss depression measured by CES-D was significantly associated with having complicated grief (OR: 1.16, 95% CI: 1.08-1.25, $p < .001$). Preloss depression level was also significantly associated with complicated grief (OR: 1.13, 95% CI 1.04-1.23, $p < .01$), whereas pre and postloss anxiety were not significantly associated complicated grief status.

Evidence from clinical studies also supports the relationship between depression and complicated grief. Shear and her colleagues (2011), in a study of a sample of Project Liberty crisis counseling recipients 1.5 years after the terrorist attacks on the September 11, 2001, found positive screen for complicated grief was associated with meeting criteria for depressive disorder. In a study of adolescents exposed to a peer's suicide, the presence of a previous history of

depression was associated with an 81% risk of complicated grief (Melhem, Day, Shear, Reynolds, & Brent, 2004). However, previous history of anxiety disorders was not significantly associated with complicated grief.

In a randomized controlled treatment trial study to compare complicated grief and interpersonal psychotherapy (Simon et al., 2007), more than half of the sample who had had concurrent depression (55.34%) met criteria for complicated grief and approximately 72% of sample who had experienced depression in their lifetime met the criteria for complicated grief. Mean comparison of the ICG score between depression and no depression group resulted in significant difference. Based on this evidence, this dissertation posits that depression in bereaved individuals can be a risk factor for complicated grief and hypothesizes that complicated grief is associated with the increased levels of depression that can be caused by economic hardship.

Table 3.

Summary of Studies on Risk Factors for Complicated Grief

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
<i>Bereaved Caregiver Sample</i>							
2006	Schulz	217	REACH study	No	Yes	Higher levels of preloss Depression, caregiving burden, benefits, REACH intervention assignment	Yes
1997	Beery	70	Whose spouses of terminally ill residing in Pittsburgh area	No	Yes	Higher levels of caregiving burden, shorter duration of caregiving	
2002	Barry	122	Who were recruited through the AARP Widowed Persons Service	No	No	Lack of preparation	Yes
2008	Keesee	157	who were in response to the advertisement to two AU	No	No	Violent death, benefit-finding	No

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			southeast chapters of a support group network for family caregivers (The Compassionate Friends)				
2010	Chiu	668	who were recruited from a contact list of terminal cancer patients who had previously been treated in a hospital	No	Yes	History of mood co-morbidity, Female, lack of religious belief, unavailable family support, and	No
2011	Meert	138	Parents of children who died in a ICU at a hospital, and who were asked to complete a survey 6 months after the death	No	Yes	Having more responsive caregiving, Being the biological parent	No
2010	Kramer	152	whose family members of persons who died with lung	No	No	Caregivers who were caring for patients with greater fear of	Yes

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			cancer, part of a larger Assessment of Cancer Care and Satisfaction (ACCESS) study conducted in the state of Wisconsin.			death, Less education, more difficulty accepting the illness	
			<i>Traumatic Death Sample</i>				
2003	Dyregrov	232	who had participated in a study of parents who bereaved by suicide their children	No	No	More self-isolation, female (suicide, SIDS), suicide vs. accident or accidents (n.s.)	No
2004	Melhem	146	Friends of 26 of suicide victims whose families agreed to participate in a psychological autopsy in Pittsburgh	No	Yes	History of depression, family history of psychiatric disorders, closeness of the relationship with the deceased	Yes

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
2011	Shear	160	who were randomly selected families applying for American Red Cross assistance, and who were affected by Hurricane Katrina	No	No	Pre-loss history of depression, social competence, ethnic minority status, social support	Yes
2005	Hardison	508	Were recruited from undergraduate introductory psychology courses at the University of Memphis over a 3-year period.	No	No	Violent death, Sleep variables, Younger, Less frequency of contact, shorter time since loss, higher intimacy level, Female	No
2006	Hebert	222	REACH study	No	Yes	Unprepared	Yes
2007	Ott	141	who were recruited from support groups sponsored by the Alzheimer's Association,	No	No	More sudden deaths, low self-esteem, higher marital dependency	No

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			memory loss clinics, community caregiver support networks, and extended care facilities				
2007	Hebert	224	REACH study	No	Yes	Less frequent attendance at religious services, meetings and/or activities	Yes
<i>Non-Traumatic Death (U.S. Sample)</i>							
1998	Van Doorn	59	whose spouses of terminally ill residing in Pittsburgh area	No	No	Preloss attachment style summary (compulsive, excessive, and defensive style), security-increasing marital quality	No
1999	Chen	150	whose spouses were admitted with life-threatening illnesses	No	Yes	Female	No

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			at the Yale-New Haven Hospital				
2004	Latham	306	who were recruited through AARP Widowed Persons Service contact list that provided recently widowed people.	No	No	Higher levels of depression, Female, less income before loss, PTSD, less education	Yes
2011	Sung	196	whose data was collected from a larger study on chronic depression and stress	No	No	Among those with MDD, CG was associated with a higher prevalence of lifetime alcohol dependence, greater exposure to traumatic events, and lower perceived social support	Yes
2006	Vanderwerker	283	Were recruited through the AARP Widowed Persons	No	No	Higher (retrospective) childhood separation anxiety	No

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			Service			levels	
2006	Neimeyer	506	Were recruited from undergraduate introductory psychology courses at the University of Memphis over a 3-year period.	No	No	An interaction; continuing bond predicted greater CG, but only when the survivor was unable to make sense of the loss in person, practical, existential or spiritual terms.	No
2006	Holland	1,022	Were recruited from undergraduate introductory psychology courses at the University of Memphis over a 3-year period.	No	No	Low sense-making, los benefit-finding	No
2006	Currier	1,056	Were recruited from undergraduate introductory psychology courses at the	No	No	A low capacity for sense-making	No

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			University of Memphis over a 3-year period.				
2007	Riley	35	Bereaved mothers participating in group counseling sessions in two community grief centers.	No	No	Less optimistic view, less habitually coped using positive reframing	No
2007	Johnson	192	whose spouses were admitted with life-threatening illnesses at the Yale-New Haven Hospital	No	Yes	A high level of perceived parental control during childhood	No
2004	Mitchell	60	Survivors of suicide who completed baseline measures as part of a larger crisis intervention study	No	No	More close relationship	No
2008	Metzger	60	Were recruited from online	No	No	More closed relationship,	No

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			bereavement support groups. The advertisements were posted in several randomly selected online bereavement support groups			shorter time since loss, less acceptance, less expectedness	
2008	Metzger	60	Were recruited from online bereavement support groups. The advertisements were posted in several randomly selected online bereavement support groups	No	No	Higher level of interaction with the dying person, More Expression of feelings of love and affection and continued affiliation and closeness, greater degree of communication, less pre-loss acceptance	No
2008	Laurie	1,581	Were recruited from undergraduate introductory	No	No	African americans reported higher levels of g than	No

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			psychology courses at the University of Memphis over a 3-year period.			Caucasians, especially when they spent less time speaking to others about their loss experience	
2008	OConnor	23	who were recruited through advertisements	No	No	Higher levels in reward-related activity in the nucleus accumbens (NA)	No
2011	Kersting	2,520	who were randomly selected from general population in Germany	No	No	Female, lower income, older age, having lost a child or a spouse, cancer as the cause of death	No
2005	Drew	56	Families whose child had died from a cancer-related illness in the past five years	No	No	Parents of a child who had a stem cell transplant > non-transplant	No
2003	Jones	148	who were recruited through a	No	No	Euthanasia compared to natural	No

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			larger study of a randomized evaluation of mental health service effectiveness			death	
2010	Burke	54	who were diagnosed unipolar disorder inpatients in the department of psychiatry, Univ. of Muenster, and who lost their family members	No	No	Bigger size of available network, higher levels of negative relationships, levels of grief-specific support	No
2009	Johnson	135	whose spouses were admitted with life-threatening illnesses at the Yale-New Haven Hospital	No	Yes	More negative reactions from friends and family members	No
2011	Wagner	85	Immediate family members whose family member died by assisted suicide	No	No	High levels of general disapproval, family disapproval	No

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
<i>Non-Traumatic Death (Non U.S. Sample)</i>							
2003	Boelen	329	who were recruited from a contact list of the Dutch National Association for Grief Counselling	No	No	Negative beliefs about life and future, threatening interpretations of grief reactions, Older age, Less number of years of education, Closer time since loss	Yes
2004	Goodenough	25	Families whose child had died from a cancer-related illness in the past five years	No	No	Shorter time since loss, higher depression scores, higher levels of family friction, Female(mothers), death in hospital	Yes
2003	Boelen	234	were recruited through an advertisement on a much-visited Dutch	No	No	More negative interpretation of grief, Behavioral and cognitive avoidance grief strategies	Yes

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			Internet site with general information about grief and bereavement, including the research program.				
2006	Boelen	97	were recruited through grief counsellors, therapists and others who came in contact with bereaved individuals through their work-related or voluntary activities, who handed out questionnaire packets to mourners	No	Yes	Negative belief about self, life, and the future, and threatening interpretation of grief reactions	Yes
2006	Boelen	57	were recruited through an advertisement on an Internet site with information about	No	Yes	Continuing bond with the deceased through recovering memories	No

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			grief				
2010	Boelen	160	Who were recruited via mental health-care workers conducting an ongoing research program on grief.	No	Yes	Lower specificity of goals, a reduced sense of control over achieving goals, more goals that were associated with loss, less goals related to work/education and close relationships	No
2009	Boelen	254	Who were recruited through announcements on Dutch Internet sites about loss and grief that solicited people who lost a close relative to participate	No	No	More centrality of events, higher education level, more experiences unrealness, negative cognitions (negative life, negative future, avoidance), higher levels of depression, PTSD.	Yes
2011	Gana	72	who were recruited from	No	No	More self-directedness, more	No

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			senior citizens clubs and support associations for widows and widowers in the east of France			self-transcendence Female, more close kinship relation to the deceased, longer time since loss	
2005	Wijngaard-de Meij	219	Who lost a child and were contacted via obituary notices in local and national newspapers	No	No	Unexpectedness, the number of remaining children, Older child	No
2010	Fujisawa	969	who were randomly identified 5,000 subjects in four areas of Japan.	No	No	Unexpected death	No
<i>Treatment Trials</i>							
2005	Simon	103	who sought clinical care who were willing to participate in Systematic Treatment	Yes	No	Having panic disorder, alcohol abuse, lifetime suicide attempts, greater functional impairment,	No

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
			Enhancement Program for Bipolar Disorder			poorer social support	
2007	Simon	206	who were recruited through professional referral, self-referral, and media announcements	Yes	No	Psychiatric comorbidity, greater work and social impairment	Yes
2007	Maytal	67	who were recruited for a larger investigation of suicidality in individuals with bipolar disorder, participating in a Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD), and who lost their family members.	Yes	No	Poorer sleep quality	Yes

Year	Author	N	Sampling	Treatment Trial?	Prospective Data?	Findings on Risk Factor Predicting CG	Depression As A Predictor?
2009	Kersting	70	who were diagnosed unipolar disorder inpatients in the department of psychiatry, Univ. of Muenster, and who lost their family members	Yes	Yes	Higher levels in depression, higher traumatic stress, close family membership	Yes
2001	Melhem	23	Referred patients for a pilot study of an exposure-based psychotherapy for complicated grief at the Western Psychiatric Institute and Clinic, Pittsburgh	Yes	No	Axis I diagnosis	No

Gender. In existing research on gender differences in bereavement outcome, most studies have focused on normal grief symptoms (c.f., Gilbar & Dagan, 1995). Only few studies have explored gender differences in complicated grief. Two studies that focused on gender differences in complicated grief were conducted by Bierhals et al. (1996) and Chen et al. (1999). Bierhals et al. (1996) investigated gender differences in levels of complicated grief symptomatology with data derived from 97 elderly bereaved spouses. The authors found no main effect for gender or time since loss for the Inventory of Complicated Grief (ICG, Prigerson et al., 1995) summary score. A significant gender-by-time interaction effect was found for the ICG summary score. Post hoc analyses revealed that widows and widowers who were in the first three years after their spouse's death did not differ in mean levels of complicated grief symptomatology. After the third year, the ICG summary score decreased in widows while staying stable in widowers.

Chen et al. (1999) conducted a longitudinal study with 150 bereaved spouses, one of the aims of which was to examine gender differences in the resolution of symptoms of bereavement-related psychological distress (depression, anxiety, and complicated grief) throughout the first two years of bereavement. It was found that widows had higher mean symptom levels of complicated grief, depression and anxiety at 6, 13, and 25 months after the loss of their spouse as compared to widowers. Although the authors conclude that widows rather than widowers are at greater risk for developing psychiatric symptoms after bereavement, this conclusion should be viewed with some caution.

Despite that these two studies showed mixed results regarding gender differences in complicated grief, there were also few studies that included gender as a covariate in the analyses.

The studies showed females had higher levels of complicated grief than males in bereavement (Currier et al., 2006; Hardison, Neimeyer, & Lichstein, 2005; Meert et al., 2011).

A-5-2. Contextual Risk Factors

As shown in Table 3, known contextual factors affecting complicated grief include caregiving-related factors, death-related situations, and social environments of the bereaved individuals. This section provides a review of caregiving-related factors and preparedness for the death that is investigated in this dissertation.

Caregiving. Four studies have examined complicated grief of caregivers and some very important works on caregivers have been done, and important findings have already emerged from the study whose data this dissertation study will be using. The studies found that caregiving burden and benefit that precede the death are disruptive and painful life experiences marked by years of intense psychological and existential suffering (Schulz et al., 2006) and advance preparedness for the loss is associated with lower risk for complicated grief. These factors will be controlled for in the dissertation analysis in order to examine the unique effect of economic hardship on complicated grief.

In examining complicated grief of bereaved caregivers ($n=217$) of individuals with dementia, Schulz and his colleagues found some factors that increase the likelihood of having complicated grief. For example, pre and post-loss depression level and patient's level of cognitive impairment increased the likelihood of having complicated grief. Interestingly, having more benefits from caregiving, measured by questions about the caregiver's mental/affective state in relation to the caregiving experience (e.g., "Providing help to care-recipient has made me feel useful," "Providing help to care-recipient has enabled me to appreciate life more"), was significantly associated with having complicated grief. Two possible explanations for this results

were made by the researchers: 1) losing their loved one deprives the caregivers of a meaningful role; and 2) a positive view of caregiving may be a reflection of high levels of attachment or excessive dependency, supporting the attachment perspective framework of complicated grief which postulates great importance of relationship with the deceased person in the etiology of complicated grief. In a study that examined the effects of caregiving tasks, caregiver burden, and gratification on symptoms of complicated grief found that caregiver burden was significantly associated with the spouse's level of complicated grief (Beery et al., 1997).

Preparedness for Death. Some studies found that advance preparations for the loss have been associated with lower risk for complicated grief in caregivers (Barry et al., 2002; Hebert et al., 2006). A study by Barry, Kasl, and Prigerson (2002) evaluated the association between a bereaved person's advance preparedness for the death, and found that lack of preparedness for the death was associated with complicated grief at baseline, at 4 months, and at 9 months, suggesting that persons who perceive themselves as unprepared for the death may be at risk of complicated grief. Similarly, a study in a large cohort of caregivers of persons with dementia found that caregivers who were not at all prepared for the death had worse mental health, exhibited more depressive, complicated grief, and anxiety symptoms at the first and subsequent assessment after the death even when controlling for multiple factors such as the caregiver's physical and mental health before the death (Hebert, Dang, & Schulz, 2006). This dissertation study takes this evidence into consideration and control for caregiving burden and benefits, and preparedness for the death when modeling the effect of economic stress on complicated grief.

A-5-3. Summary

Among the studies that have been conducted, the promising risk factors for complicated grief are as follows: depression, caregiving burden and benefits, and preparedness for the death. The extant literature on risk factors for complicated grief suggests that bereaved persons who experienced more burden and more benefits from pre-loss caregiving work are more likely to have complicated grief or experience higher levels of complicated grief. Further, some evidence suggests that bereaved individuals with more depressive symptoms have higher likelihood of having complicated grief as well.

Using the stress-diathesis framework, this dissertation study adds economic hardship of caregivers as a risk factor for complicated grief to Schulz et al.'s previous study (2006) that examined risk factors for complicated grief among bereaved caregivers. As the literature review provides preliminary evidence on predictors of complicated grief, the known contributors such as depression, caregiving burden and benefits, some demographic factors are included in the analysis.

In addition, as reviewed above (Table 3), most complicated grief studies have examined retrospective data that stressful conditions that retrospectively or cross-sectionally assessed can be affected by grief symptoms. The REACH study allows this dissertation study to use prospective data that can examine the pre-loss conditions of the bereaved individuals and can evaluate the effect of economic hardship on complicated grief by adjusting for the information assessed before the loss. The next section examines a discussion on economic stress as a potential risk factor for complicated grief.

B. Economic Stress As a Potential Risk Factor for Complicated Grief

Economic stress is only recently coming to be recognized as an important source of stress, and tends to be understudied. According to Khan and Pearlin (2006) “among the array of chronic stressors that people may confront in their daily lives, there is probably none more pivotal than economic hardship” (p. 18). Recent studies have linked economic hardship with negative mental health outcomes including depression throughout the life course (Drentea & Goldner, 2006; Hanratty, Holland, Jacoby, & Whitehead, 2007; Pinqart & Sorenson, 2007; Vellone, Piras, Talucci, & Cohen, 2007). Economic stress may be of special importance in bereavement, which is time of potentially significant economic changes. As can be seen in the theoretical framework section, stressful life events can trigger mental illness. Evidence that will be reviewed in this section will support the conceptual framework and this dissertation extends the framework to complicated grief.

This section examines previous studies on economic stress that bereaved individuals suffer. Additionally, discussion about issues related to the measurement of economic stress follows. The review then proceeds to examine the relationship between economic stress and depression in bereavement.

B-1. Economic Declines in Bereavement

Recent examination of declines in economic conditions in bereavement reported that the death of a partner often contributes to a change in economic status of bereaved individuals, as poverty rate of bereaved individuals increases and income decreases from every source.

In the first year post-loss, the percentage of widows living in poverty rises to 22% from 10% (Hungerford, 2001). Economic status prior to the loss is an important predictor of poverty after the loss. Declines in income post-loss are substantial (Hungerford, 2001) and occur over a

5-year period (Zick & Smith, 1991). Using data from the 2002 and 2004 waves of the Health and Retirement Study, a study of 5,799 widow(er)s to investigate the effect of change in income sources by recent spousal loss on poverty transition, Gillen and Kim (2009) found that a widow(er)'s income greatly decreases from every source (i.e., social security, earnings, pensions, assets, and annuities). Specifically, a \$10 increase in social security benefits decreased the probability of poverty transition for recently widowed older women by 67.2%, suggesting important implications for social security survivor benefit rules and women's education with regard to financial security in retirement.

Additionally, pre-loss economic circumstances appear to predict the economic hardship in bereavement. Life-threatening illness can have a major impact on family economic circumstances. Conversely, a family's economic resources will influence stress levels, availability of medical care and support in the home, access to medications, etc. (Block, 2006). Researchers have demonstrated that serious illness often results in a decline in family economic well-being (Woolhandler & Himmelstein, 2004). In the Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatment (SUPPORT) study, Covinsky et al. (1994) found that 20% of family members of seriously ill adult patients had to make a major life change (including quitting work) to provide care for their loved one, and that 31% of families lost all or most of their savings in the process of caring for their ill relative. These unfavorable economic circumstances can exacerbate stress among bereaved individuals and cause psychological distress in bereavement, particularly complicated grief. Therefore, it is important to examine the effect of economic stress on complicated grief.

B-2. Measure of Economic Hardship

The measurement of economic hardship has been consistently controversial. There have been two major approaches: objective and subjective indicators for economic hardship construct. Researchers have recently noted that economic hardship may be represented better with subjective measures than objective measures (Kahn & Pearlin, 2006).

Objective indicators are described monetary constructs that may be quantifiable by an observer. One of the frequently used objective measures of economic hardship is household income. This measure may also capture aspects of economic hardship; yet measurements of household income may fail to capture other important economic indicators such as assets, debt, and other indicators of wealth. In addition, older adults who tend to experience a loss of a loved one more often, have changes in spending and taxation, paid-off mortgages, postretirement earnings, increased reliance on savings, employer benefits, and other aspects of finances that can be difficult to quantify (e.g., Cutler & Gregg, 1991). Likewise, a particular or pieces of objective indicators may ignore some economic conditions that can account for economic hardship that bereaved individuals face. Consequently, it has been recognized that the perception of stress may be more valid measure of economic stress than exposure to stress (e.g., Lazarus & Folkman, 1984).

Subjective indicators often refer to constructs relating to the perception of strain or hardships felt as a result of the underlying economic situation. Importantly, perceptions of economic hardship are meaningful in their own right because increased levels of perceived hardship may exacerbate stress or create a sense of economic uncertainty among bereaved persons. Research has suggested that financial strain is related to, but independent of, household income (Kahn & Pearlin, 2006). In other words, people who have similar incomes may

experience significantly different levels of financial strain. Chan, Ofstedal, and Hermalin (2002) further this argument by suggesting that the reason there is a low correlation between objective financial circumstances and subjective well-being is because people may tend to adjust their situation as their material conditions improve or may adapt to misfortunes.

Additionally, perceived economic hardship also captures important non-pecuniary dimensions of economic life, such as reliance on others for financial management tasks. For example, if the bereaved partner was responsible for the major financial and legal decisions for the household, the surviving partner may report higher levels of economic hardship given that person's lack of confidence in performing these types of tasks (Corden, Hirst, & Nice, 2008). Thus, perceived economic hardship may be important predictor of psychological well-being in bereavement.

This dissertation study takes this discussion on the construct of economic hardship into consideration of the analysis, and focuses more on a subjective measure of economic hardship that allows this study to evaluate the role of economic stress in bereavement by using economic hardship measure as a predictor in building the relationship among economic hardship, depression, and complicated grief. Moreover, this study tests the effects of both subjective and objective measures of economic hardship on complicated grief in order to support the superiority of subjective measure of economic hardship for testing its effect on psychological distress. The next section provides evidence relating to the effects of economic hardship on depression.

B-3. Effects of Economic Hardship on Depression in Bereavement

Economic hardship may significantly affect bereaved individual's psychological distress, as economic struggles can make psychological adjustments stressful for bereaved individuals (Norris & Murrell, 1990). It has been suggested that financial hardship and change in monthly income coinciding with or following death of a partner may impede coping responses, increase likelihood of depressive symptoms to bereavement (Kissane, Bloch, & McKenzie, 1997; Keene & Prokos, 2008; Wyatt, 1999).

Using longitudinal data (Changing Lives of Older Couples), Keene and Prokos (2008) examined how several aspects of the caregiving situation, including economic hardship, affected bereaved individuals' depressive symptomatology, as measured by the Center for Epidemiology Study for Depression (CES-D) 11 item scale. The authors used a multiple regression analysis to examine the effects of key variables, including economic hardship on depressive symptoms six months after the death, controlling for various demographic characteristics and personal circumstances. While income level was not significantly associated with depressive symptoms across several regression models in which demographic characteristics, personal circumstances, and caregiving situations were hierarchically entered, greater economic hardship demonstrated positively significant associations with depressive symptoms in all regression models.

Norris and Murrell (1990), in a study of persons who had recently lost a spouse, examined the effect of financial hardship, as measured by five-item subscales of the Louisville Older Person Event Scale (e.g., less money to live on, large loan), on depressive symptoms measured by CES-D 20 item scale. Using a multiple regression analysis, they found economic hardship was significantly associated with depressive symptoms controlling for other variables

such as preloss depressive symptoms, global stress. They did not include other covariates regarding financial circumstances of study participants in the model.

Studies reviewed above demonstrate greater economic hardship may be associated with depression in bereavement, suggesting importance of dealing with economic hardship for bereaved individual's emotional adjustment to bereavement. This evidence provides a base for investigating the mediator role of depression in the relationship between economic hardship and complicated grief.

B-4. Summary

The review examined previous studies on economic hardship in bereavement. Bereaved individuals are likely to have economic hardship, as the death of a partner can contribute to a change in economic status of bereaved individual. Studies indicate economic hardship can be a risk factor for adjustment to bereavement and lead to depression. It has been reported that economic hardship of bereaved individuals is associated with their depressive symptoms. Given the evidence that economic stress can heighten risk of depression and depression is a clear risk factor for complicated grief, it is reasonable that economic stress can cause depression and, in turn, can increase the likelihood of having complicated grief (i.e., indirect effect of economic hardship on complicated grief through depression). Also, it remains unclear whether economic hardship may exacerbate the effect of depression on complicated grief.

This dissertation study examines the role of economic hardship in complicated grief among bereaved dementia caregivers. What follow are limitations of previous studies, and aims and hypotheses this dissertation study proposes.

C. Limitations of Previous Studies

C-1. Issues in Distinguishing Complicated Grief from Depression

Given recent evidence that those who had had depressive symptoms are more likely to have complicated grief than those without a history of depression, this study utilizes data about depressive symptoms as a key role in mediating the relationship between increased economic hardship and complicated grief. In order to examine the roles of depression in the relationship noted above, complicated grief should appear to be distinct from depression. First, despite the importance of distinguishing complicated grief from depression, no study has examined if the two constructs are distinctive constructs among bereaved caregiver population.

C-2. Few Investigations on Role of Economic Stress in Bereavement

While there has been research investigating contributors to complicated grief, such research continues suffer from several substantial limitations. Second, despite the important role social workers can play in working with bereaved clients who experience economic hardship, no study which is mainly focused on the role of economic hardship in complicated grief has been conducted.

C-3. Few Investigations on Specified Paths to Complicated Grief

Third, to date examinations of complicated grief have employed—almost exclusively—non-hypothesis-based approach. Thus, there is a strong need for investigation to elucidate the specified paths based on the evidence extant research provides. For example, while some studies on complicated grief have reported the effects of household income level on complicated grief (Latham & Prigerson, 2004; van der Houwen et al., 2010), the direct effect does not provide a unique path for complicated grief and offer an explanation for the relationship.

C-4. Few Investigations of Changing Nature of Pre- and Post-Loss State of Economic Circumstances and Mental Health by Using Prospective Data

Fourth, evidence regarding the effect of economic hardship with prospective data that can account for change in economic hardship and change in mental health state from pre- to post-loss is lacking. This study is the first investigation on the effect of change in economic hardship and change in depression in complicated grief using a unique prospective dataset including pre- and post-loss economic conditions and depression.

Building on the limitations, this research proposes an economic risk factor model for complicated grief. The main purpose of this modeling is to link two relationships: (1) economic hardship and depression of bereaved persons, and (2) depression of bereaved persons and their complicated grief.

D. Proposed Study

To add to the growing understanding of complicated grief, this dissertation study seeks to conduct an investigation of the relationship between change in economic hardship and complicated grief, as measured by the ICG, using data from the Resources for Enhancing Alzheimer's Caregiver's Health (REACH: Schulz et al., 2001) for dementia caregivers and lost individuals with Alzheimer's disease who they cared ($n=221$).

D-1. Study Context

The REACH study was an intervention study for caregivers of individuals with Alzheimer's disease on caregiving challenges which was conducted from 1999 to 2001 (REACH; Schulz et al., 2003). Study participants were assigned to receive either an active intervention or control condition of which are described in detail in Chapter 3, and treated for 2 years. The initial number of caregivers participated in this study was 1,222. Of the study participants, 221 caregivers lost the patients with Alzheimer's disease they cared for during the study. The analysis proposed here makes use of the last assessment before the death and the first assessment after the death ($n=221$) from the REACH project to examine the relationship between economic hardship, depression, and complicated grief among caregivers.

D-2. Distinguishing Complicated Grief from Depression

Given no study has examined a distinction of complicated grief from depression among this population, this study confirms that complicated grief is a distinct from depression with 221 bereaved dementia caregivers.

D-3. An Economic Risk Factor Model for Complicated Grief

In line with the stress-diathesis framework and previous findings on risk factors for complicated grief, there are three possibilities of examining the relationship between economic hardship and complicated grief. First, this model argues that economic hardship (i.e., stressor) predicts complicated grief (i.e., outcome). Second, economic hardship to which bereaved persons are exposed (i.e., stressor) predicts depression of the bereaved persons (i.e., outcome and mediator), and depression predicts complicated grief bereaved persons in the present (i.e., outcome). Third, economic hardship moderates the relationship between depression and complicated grief.

D-4. Study Aims

Using data from the REACH project, this research aims to examine the direct effect of economic hardship on complicated grief, the indirect effect of economic hardship on complicated grief through depression, and the moderating effect of economic hardship on depression-complicated grief relationship. The specific aims and concomitant hypotheses of this research are to:

Aim #1: Examine if complicated grief is a distinct construct among the bereaved dementia caregiver population.

Aim #2-1: Examine whether increases in economic hardship positively predict complicated grief.

Aim #2-2: Examine whether increases in economic hardship have an indirect effect on complicated grief through increases in depressive symptoms.

Aim #2-3: Examine whether increases in economic hardship moderate on the relationship between increases in depressive symptoms and complicated grief.

Taken together, the results of these aims are used to derive implications for future development in conceptualization of complicated grief of bereaved dementia caregivers. The analytic aim #1 takes an important step in distinguishing complicated grief from depression among bereaved dementia caregivers. In the presence of a distinction of complicated grief from depression, finding can provide a critical basis for development of a specific treatment for complicated grief for bereaved dementia caregivers. The analytic aim #2 also takes a critical step in identifying the significance of economic hardship as a target for social work intervention. In the presence of significant relationship between economic stress and poor mental health in bereavement, findings from this research can be directed toward existing treatment efforts to enhance their effects in an effort to reduce complicated grief among bereaved dementia caregivers.

CHAPTER III. Method

A. Study Design and Participants

A-1. Overview of the REACH Study

The Resources for Enhancing Alzheimer Caregivers Health (REACH) study was established in 1995 as a unique multisite research program, which was funded by the National Institute of Aging and the National Institute on Nursing Research. This dissertation uses a subset of the REACH data to examine the effect of economic hardship on complicated grief among individuals who were bereaved during the REACH study. The entire REACH study is briefly described below, followed by a description of the subset of REACH study participants whose data is used in the analysis presented here. This overview of the REACH study is based on a study of Schulz and colleagues (2003), and Wisniewski and colleagues (2003).

The primary purpose of the REACH study was to test the effectiveness of various psychosocial interventions for caregivers of older adults with Alzheimer's disease on their caregiving challenges. The analysis presented here does not directly address intervention effects.

The REACH study tested nine interventions at six sites. Sites were located in six cities near major universities (Birmingham, Boston, Memphis, Miami, Palo Alto, and Philadelphia). All sites compared intervention conditions to control conditions using random assignment to condition. Interventions varied across sites. Three sites compared one intervention to the control condition, and three sites compared two intervention conditions to the control condition (see Table 4).

Table 4.

Different Intervention Components Across Study Sites (N=1,222)

Site	N	Intervention	N	Control	N
Birmingham	140	Skills training	70	Minimal support	70
Boston	100	Telephone-linked care	49	Usual care	51
Memphis	225	Behavioral intervention + Information and referral care	85 78	Enhanced care	82
Miami	225	Family-based structural multisystems in-home + Computer telephone integration system	77 75	Minimal support	73
Palo Alto	257	Coping with caregiving + Enhanced support group	105 108	Minimal support	44
Philadelphia	225	Environmental skill building	129	Usual care	126
Total	1,222		776		446

All REACH interventions were guided by detailed treatment manuals and certification procedures to ensure that interventions were delivered over the study period at each site. All procedures were approved by the Institutional Review Board for Human Subjects at each site. Though the active intervention conditions differed, all participants completed a common assessment battery at baseline, and at 6, 12, and 18 month follow ups. Assessments comprising the REACH core battery can be separated into four categories: caregiving activity/burden, caregiver's mental health, caregiver's socioeconomic status, and caregiver's social environment (Table 5).

Evaluations were carried out to examine the intervention effect on caregiver's mental health across sites using meta-analysis (Gitlin et al., 2003). The pooled treatment effect across sites for the meta-analysis for depressive symptoms measured by the CESD was not statistically significant ($p = .095$). Only one site, Miami reported a significant reduction in depressive symptoms ($p = .034$) in the combined family therapy plus technology treatment condition compared with the control condition. This research group suggests that the small intervention effect may be the complex pattern of significant outcomes observed for various subgroups. Across the study sites, caregivers in active interventions who were Hispanic, those who were nonspouses, and those who had less education reported lower CESD total scores than those with the same characteristics who were in the control group conditions. Interestingly, however, a recent study examined predictors of complicated grief among bereaved REACH participants during the study and reported an unexpected result for complicated grief response that being enrolled in a caregiver intervention is significantly associated with having complicated grief ($p = .02$) (Schulz et al., 2006). Additionally, a recent study that examines the effect of the REACH intervention found a statistically significant effect on normal grief symptoms ($d = .28$) and a

trend toward improvement on complicated grief symptoms ($d=.25$), but little impact on depressive symptoms ($d=.09$). Thus this dissertation study uses this evidence by including the intervention assignment as a covariate in the analytic model of predicting complicated grief.

Table 5.

Measures of the REACH Project

Category	Measures
Caregiving	Revised Memory and Behavior Problems Checklist, (Teri et al., 1992); Positive aspects of caregiving (Lawton et al., 1995)
Activity/Burden	
Caregiver's Mental Health	Center for Epidemiologic Studies—Depression (Radloff, 1977); Inventory of Complicated Grief (Prigerson et al., 1995)
Caregiver's Socioeconomic Status	Education Level, Income Level, Race, Gender
Caregiver's Social Environment	Social Support (Krause, 1995); Negative Interaction (Krause, 1995); Social Interaction (Lubben, 1988)

A-2. Study Participants

This dissertation study examines 221 participants recruited from the REACH project who lost their loved one during the course of the study and who provided data before and after the death of their care recipient. The number of study participants bereaved following each measurement time point (i.e., baseline, 6 month, and 12 month) is provided in Table 6.

Table 6.

Number of Study Participants

Baseline	6 month	12 month	18 month	Total
78	63	80	No new subjects	221

Demographic information on these 221 bereaved caregivers is provided in Table 7. With the exception of three care recipients who died due to falls, all participants lost their care-recipients to illness, including heart problems (19.6%), pneumonia (15.2%), Alzheimer's-related problems (12.9%), and a host of other natural causes. As can be seen in Table 7, the majority of participants in the study sample were female, white and in their mid-sixties. Most participants' annual income level is from \$15,000 to \$20,000, and about 80 percent of participants graduate high school. Overall, approximately 63 percent of the study sample participated in the REACH intervention.

Table 7.

Participant Demographics

Variable	M(SD) / %(N)
	(N=221)
Age	64.62(13.54)
Female	84.3%(183)
Race	
White	66.4%(144)
Black	19.8%(43)
Hispanic	13.8%(30)
Education	12.25(2.97)
Income	
Preloss	4.19(2.23)
Postloss	3.66(2.38)
REACH Intervention	
Yes	62.7%(140)
No	37.3%(81)

B. Measures

The first aim of this dissertation is to confirm whether depression and complicated grief are distinct constructs in this population. The second aim is to explore whether economic stress contributes to the prediction of complicated grief, and whether depression plays a role in this relationship. This analysis addresses the effect of economic hardship on complicated grief, and the role of depression in this relationship. Other variables known to predict complicated grief and depression are also included in the analyses. Preliminary analyses examine the psychometric properties of complicated grief and depression. This section details the measures used to address these aims and implement these analyses. All the instruments detailed below are also included in appendices.

B-1. Complicated Grief

Complicated grief is assessed using the Inventory of Complicated Grief (ICG; Prigerson et al., 1995). The ICG is a self-reported measure for complicated grief that assesses 19 symptoms of pathological grief (e.g., the bereaved person's preoccupation with thoughts of the deceased, severe yearning/longing for the lost relationship, emptiness, and avoidance behaviors). Each symptom is rated on a 5-point Likert-type scale describing the frequency, ranging from 0 (never) to 4 (always). Responses to items are summed to create a summary score ranging from 0 to 76.

B-2. Depression

Symptoms. Depression symptoms were measured by the Center for Epidemiological Study for Depression (Radloff, 1977) which is one of the most frequently used self-report instruments of depressive symptoms in caregiver research. This measure consists of 20 declarative statements regarding one's depressive symptoms to which the frequency of symptoms in the past week are indicated on a 4-point Likert-type scale ranging from 0 (rarely or

none of the time) to 3 (most or almost all the time). Responses to items are summed to create a summary score ranging from 0 to 76.

Change in depression. Change score for depression is calculated by regressing the last assessment of economic hardship before the death on the first assessment of economic hardship after the death.

B-3. Subjective and Objective Measures of Economic Hardship

As examined above, studies on the economic hardship on mental health have used both subjective and objective measures of economic hardship. Although the main focus of this study is on the effect of the subjective measure of economic hardship, this study also tests the effect of objective measure of economic hardship on mental health.

B-3-1. Subjective Measure of Economic Hardship

Subjective economic hardship was assessed using one question: “How hard is it for you to pay for the very basics like food, housing, medical care, and heating?” This question was rated on a 4-point scale ranging from 0 (not difficult at all) to 3 (very difficult).

Change in Economic Hardship. Change scores for economic hardship are calculated by regressing the last assessment of economic hardship before the death on the first assessment of economic hardship after the death.

B-3-2. Objective Measure of Economic Hardship.

For an objective measure of economic hardship, caregiver household income is used, defined by ten categories of income ranging from 0 = less than \$5,000 to 9 = more than \$70,000 based on a response to the question: “Which category best describes your yearly household income before taxes?” Caregiver education was measured with one item, with possible responses ranging from 0 = no formal education to 17 = doctoral degree.

Change in Household Income. Change scores for household income are calculated by regressing the last assessment of household income before the death on the first assessment of household income after the death.

B-4. Covariates and Control Variables

The previous analyses of the REACH data have identified these important predictors of complicated grief. These will be accounted for in models before exploring the role of economic hardship in predicting complicated grief.

REACH Intervention. This study uses intervention assignment as a dichotomous variable. Those who were assigned to any of the nine REACH interventions are coded as “Yes” and those who were assigned to any control conditions are coded as “No.”

Preparedness for the death. Participants were asked one question for preparedness for the death after bereavement, “To what extent were you prepared for the care recipient’s death?” Responses were: “not at all,” “somewhat,” or “very much.” Responses of “not at all” were coded as “unprepared for the death” and responses of “somewhat” and “very much” were coded as “prepared for the death.” This choice was made because very few participants ($n = 28$) responded with “very much.”

Caregiving Burden. Caregiving burden was measured by the Revised Memory and Behavioral Problem Checklist (RMBPC; Teri, 1992), that assesses the type and frequency of care recipient’s disruptive behaviors and the caregiver’s appraisal of distress generated by those behaviors. Caregivers were asked whether their care recipients manifested any one of 24 problem behaviors, during the past week (e.g., “Within the past week, has care-recipient been asking the same question over and over?” “Within the past week, has care-recipient had trouble

remembering recent events [e.g., items in the newspaper or on TV]?”), and the extent to which potential disruptive behaviors might bother the caregiver for each problem behavior. The 24 items used a 5-point scale ranging from 0 (not at all) to 4 (extremely bothersome). Responses to items are summed to create a summary score ranging from 0 to 96.

Caregiving Benefit. This scale includes 9 items, phrased as statements about the caregiver’s affective state in relation to the caregiving experience. Each item began with the stem “Providing help to (care recipient) has...,” followed with specific items such as “made me feel useful” and “enabled me to appreciate life more.” Each measured on a 5-point scale ranging from 1 (disagree a lot) to 5 (agree a lot). Responses to items are summed to create a summary score ranging from 9 to 45.

Demographic variables. Study participants’ age, gender, race, and education level are included in the analysis.

C. Data Analysis

The analytic plan for this research achieves the aims outlined above by (1) examining the psychometric properties of complicated grief and depression to see if they are two distinctive constructs, and (2) exploring the relationship of economic hardship, depression, and complicated grief. The second aim is accomplished by examining (a) the direct effect of economic hardship and depression; (b) the indirect effect of economic hardship on complicated grief through depression; and (c) the moderating effect of economic hardship on the relationship between increased depression and complicated grief. This section provides a detailed description of the analyses to test these aims. The overall analytic model is presented in Figure 1. The specific tests for the significance of each path in the model are examined using structural equation modeling technique.

C-1. Distinguishing Complicated Grief From Depression (Aim #1)

First, the combined 39 items of the ICG (19 items) and the CESD (20 items) measures at post-loss provided by 221 study participants are subjected to an exploratory factor analysis with oblique rotation. The exploratory factor analysis is conducted to identify the factors underlying the complicated grief and depression items. Kaiser Meyer Olkin measure test and Barrett's sphericity tests are used to confirm the appropriateness of the factor models.

Cattell's (1966) scree test is used to ascertain the number of dimensions to extract. Items are assigned to factors based on their highest loading (minimum acceptable loading of .40). Items that overlapped and/or cross-loaded on the two constructs (i.e., complicated grief factor and depression factor) are removed and then a series of exploratory factor analyses are rerun without the removed items. Each factor model that fixes the number of factor suggested from the scree

plot (e.g., 2 and 3) is examined to select the final model by examining pattern matrix and theoretical validation.

Second, confirmatory factor analysis techniques are used to compare model fits for competing models suggested from the exploratory factor analysis using MPlus 5.2 (Muthen & Muthen, 2004). In particular, chi-square difference tests are conducted to assess the relative advantage of the “distinctive” model (i.e., complicated grief vs. depression) over the unidimensional model (i.e., i.e., the pool of 39 items from the ICG and the CESD are loaded on) or other suggested multidimensional model from exploratory factor analysis. The model fit dices for each factor model are also reported. It includes (1) the comparative fit index (CFI), (2) the root mean square error of approximation (RMSEA), and (3) the standardized root mean square residual (SRMR)³. The internal consistency for the total score of the items of each complicated grief and depression factor are reported (i.e., Cronbach’s alpha score).

C-2. Exploring the Relationship Between Economic Hardship and Complicated Grief

C-2-1. Preliminary Data Analysis

Preliminary data analysis includes checking internal consistency of the instruments for main study variables; checking skewness of the study variables; and a series of bivariate analyses for potential covariate selection main analysis, and partial correlation tests of main study variables.

C-2-1-1. Internal Consistency and Skewness Test

Internal consistencies of the instruments for the main two study variables are examined. Cronbach alpha scores for the instruments are reported. Skewness tests are conducted for the predicted variables (i.e., complicated grief, depressive symptoms). Mardia’s coefficients are

³ For RMSEA and SRMR, values less than .05 represent good fit. For CFI, value greater than .95 is considered consistent with a good model (Bentler, 1990; Stevens, 1996).

reported for normality check. If there is evidence that the data depart from normality, Satorra & Bentler's correction for non-normality is used and robust statistics are reported for the relationship among the hypothesized relationship.

C-2-1-2. Bivariate Analysis: Potential Covariates Selection

Prior to investigating the second aim of this research, preliminary analyses are conducted to examine the relationship between complicated grief, the predictor variables of interest (e.g., changes in economic hardship, changes in depressive symptoms), and covariates known to predict complicated grief, such as preparedness to the death and positive aspects of caregiving. If any of the demographic variables are significantly related to either changes in depression or complicated grief, they are included in model testing.

C-2-1-3. Correlation Tests on Main Study Variables

Zero-order correlation tests on main study variables (i.e., complicated grief scores, change in economic hardship, change in depression) were conducted. Partial correlation tests are also conducted with the covariates that found to have significant relationships with complicated grief.

C-2-2. Test of Direct Effect of Economic Hardship on Complicated Grief (Aim #2-1)

Mplus 6.2 is used to analyze the hypothesized relationships. The significance of the relationship is analyzed to determine the size of their relationships within the model.

The standardized, unstandardized coefficients and z-score with p-value are reported for the relationship between changes in economic hardship and complicated grief. These coefficients measure the degree of change by which economic hardship is associated with complicated grief.

C-2-3. Test of Indirect Effect of Economic Hardship on Complicated Grief through Depressive Symptoms (Aim #2-2)

A bootstrapping method is used to compute the indirect effect of increased economic hardship on complicated grief through depressive symptoms. Bootstrapping is a way of circumventing the power problems by conducting a series of models, and addressing non-normality in the sampling distribution of the indirect effect (Bollen & Stine, 1992; Shrout & Bolger, 2002). Significance of the indirect effect is tested with the bootstrapped 95 percent confidence intervals (MacKinnon, Lockwood, & Williams, 2004).

C-2-4. The Moderating Effect of Changes in Economic Hardship on the Relationship Between Changes in Depressive Symptoms and Complicated Grief [Aim # 2-3].

In order to test the hypothesized moderating effect of increased economic hardship on the depression-complicated grief relationship, the interaction term of changes in economic hardship with changes in depressive symptoms is included in the previously analyzed model for the aim #2-1. The standardized, unstandardized coefficients and z-score with p-value are reported for the relationship between changes in economic hardship and complicated grief. These coefficients measure the degree of change by which economic hardship is associated with complicated grief. If the interaction term is positively predictive of complicated grief, it presents that changes in economic hardship moderate the relationship between changes in depression and complicated grief.

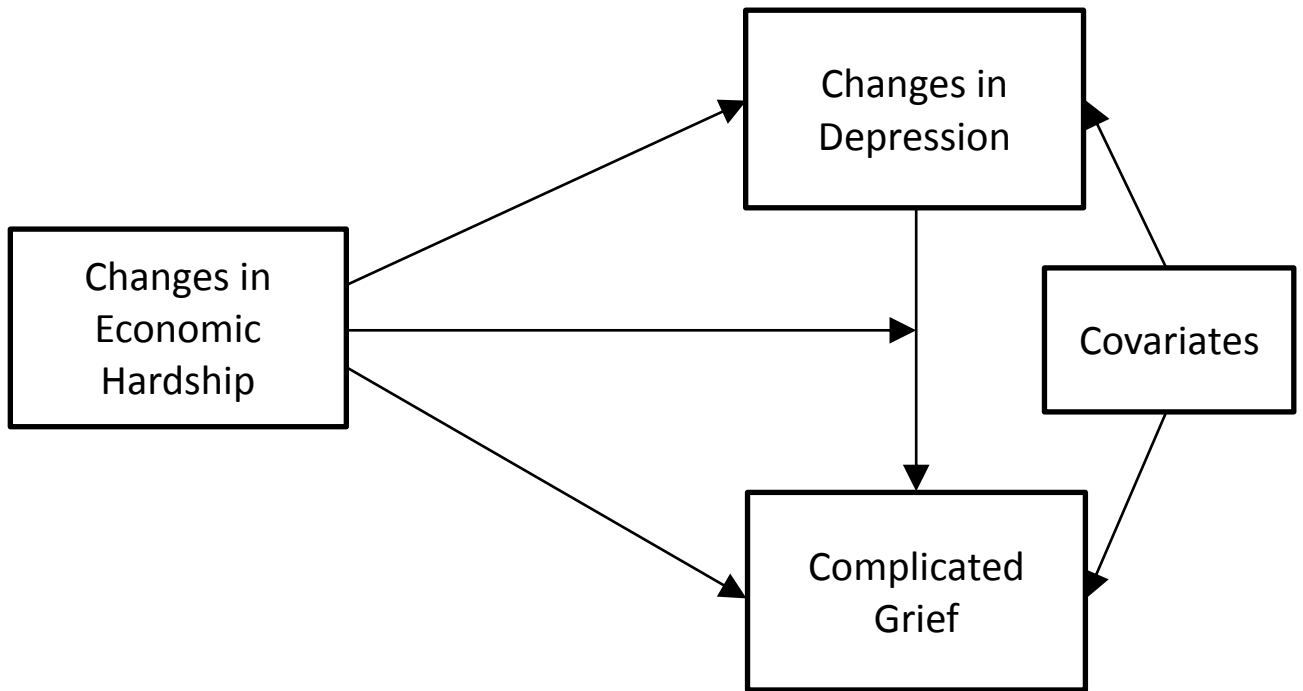


Figure 1. *Analytic Model*

CHAPTER IV. RESULT

This chapter presents a series of statistical analyses designed to answer the primary analytic questions of this research. These questions focus on achieving Aim #1 by examining if complicated grief is a distinguished construct from depression; and achieving Aim #2 by exploring the relationships between economic hardship and complicated grief (e.g., direct and indirect of economic hardship on complicated grief; and moderating effect of economic hardship in the relationship between economic hardship and complicated grief).

A. Distinguishing Complicated Grief from Depression (Aim #1)

This section examines psychometrics for the two instruments of complicated grief and depression to confirm for this population that complicated grief is distinct from depression. Exploratory factor analysis and confirmatory factor analysis were used to examine the research aim #1: Complicated grief is a distinct construct from depression. Evidence for the examination of aim #1 is provided below.

A-1. Exploratory Factor Analysis

An exploratory factor analysis was conducted with thirty nine items of complicated grief and depression (19 items from the ICG and 20 items from the CESD). The Kaiser–Meyer–Olkin measure of sampling adequacy (KMO; Kaiser, 1970) was .911 and Bartlett’s test of sphericity (Bartlett, 1950) showed chi-square 3978.837(df=630)($p < .000$), indicating that they confirmed the appropriateness of the factor models. Principal axis factor extraction was conducted with oblique rotation because of the likelihood of interrelation between depression and complicated grief (e.g., Prigerson et al, 2001). The Scree plot suggested that two-factor (Total Eigen Value = 3.543) or three-factor solution (Total Eigen Value = 2.003) were extracted from the thirty nine items (Figure 2).

Factor analysis clearly supports a two-factor solution that differentiates complicated grief from depression. For the 2-factor solution, the first factor comprised 20 CESD items and 3 ICG items, whereas the second factor comprised 16 ICG items. After removing the three items, a two factor model was rerun with the fixed number of factors set to two. There were no cross-loaded items. For the 3-factor solution, it didn't appear to have a theoretically clear factor structures (Table 8).

Figure 2.

Screeplot of Eigen Values for the ICG and CESD

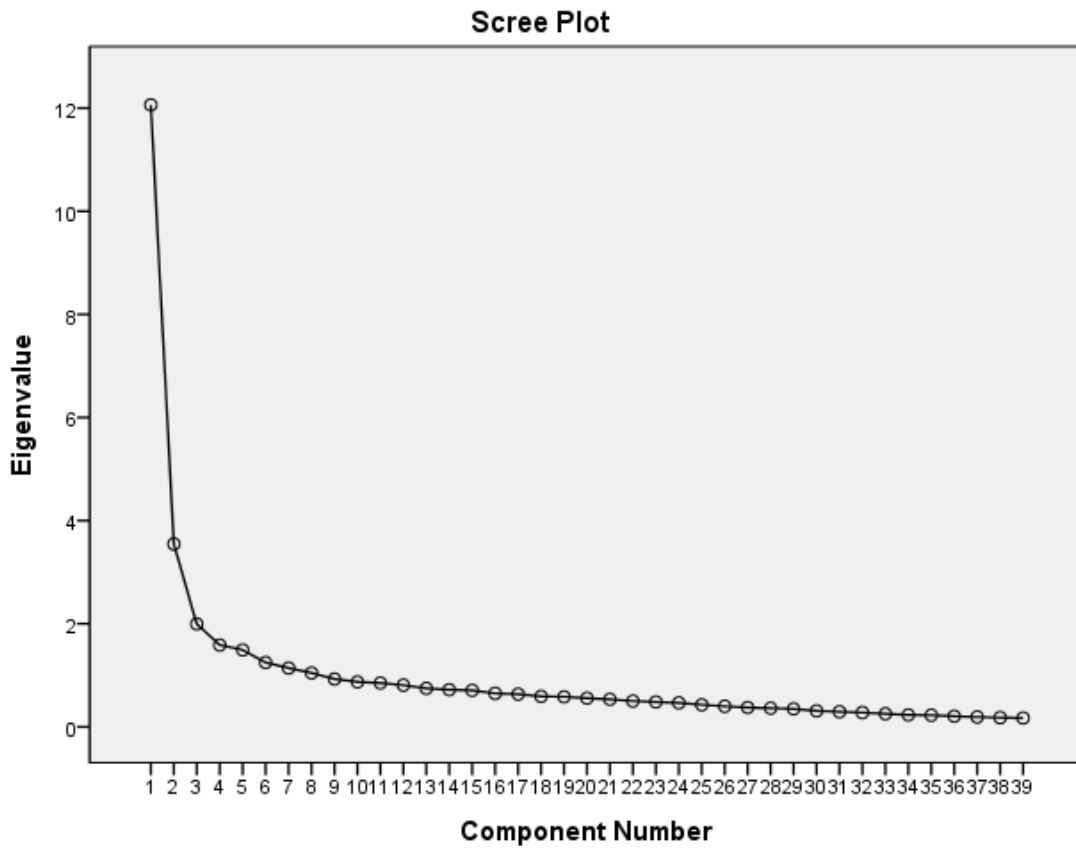


Table 8.

Pattern Matrix for the Two- and Three-Factor Solution

Items	Two-Factor		Three-Factor			Two-Factor (2)	
	CG	DEP	CG	DEP	F3	CG	DEP
CG – Think about too much	.595	.284	.506	.419	.081	.600	.290
CG – Memories of [] upset me	.606	.061	.583	.016	.051	.606	.050
CG – Cannot accept []'s death	.720	.058	.701	.096	.027	.717	.065
CG – Longing for []	.661	.079	.546	.321	.248	.670	.092
CG – Drawn to places associated with []	.716	.112	.674	.020	.122	.712	.104
CG – Feel angry about []'s death	.780	.081	.754	.009	.055	.772	.075
CG – Feel disbelief over death	.758	.130	.732	.029	.079	.750	.122
CG – Feel stunned over death	.676	.027	.668	.049	.041	.669	.033
CG – Hard to trust people	.202	.313	.448	.079	.597	-	-
CG – Lost ability to care	.204	.363	.431	.002	.562	-	-
CG – Pain in same area	.112	.244	.112	.190	.228	-	-
CG – Avoid reminders of []	.234	.176	.246	.160	.220	.373	.136
CG – Life is empty without []	.538	.262	.447	.406	.103	.546	.269
CG – Hear voice of []	.488	.006	.533	.085	.170	.479	.006
CG – See [] stand before me	.467	.060	.465	.032	.000	.459	.059
CG – Feel unfair that I live	.586	.066	.593	.045	.096	.581	.068
CG – Feel bitter over []'s death	.635	.061	.670	.021	.180	.626	.064
CG – Feel envious over others	.319	.126	.342	.051	.149	.319	.127
CG – Feel lonely after []'s death	.527	.317	.346	.232	.276	.536	.324
DEP – Bothered by things	.021	.626	.011	.600	.137	.058	.631
DEP – Appetite poor	.004	.702	.074	.682	.126	.011	.700
DEP – Can't shake the blues	.202	.620	.112	.670	.041	.217	.621
DEP – Feel as good as others	.269	.532	.204	.256	.417	.266	.521
DEP – Trouble keeping mind	.078	.565	.027	.541	.119	.089	.563
DEP – Felt depressed	.208	.647	.064	.808	.103	.227	.649
DEP – Everything is an effort	.061	.725	.001	.684	.162	.074	.721
DEP – Hopeful for the future	.005	.597	.174	.547	.142	.113	.600
DEP – Life is failure	.009	.656	.079	.341	.514	.012	.647
DEP – Felt fearful	.065	.645	.093	.426	.389	.072	.639
DEP – Sleep restless	.020	.567	.061	.606	.030	.032	.564
DEP – Talked less than usual	.168	.578	.008	.443	.290	.014	.592
DEP – Felt lonely	.322	.454	.399	.528	.185	.243	.464
DEP – People were unfriendly	.063	.570	.069	.142	.645	.067	.557
DEP – Enjoyed life	.021	.626	.069	.671	.031	.035	.623
DEP – Had crying spells	.402	.434	.261	.643	.179	.314	.438
DEP – Felt sad	.321	.571	.157	.796	.188	.241	.578
DEP – Felt happy	.080	.670	.012	.709	.050	.095	.669
DEP – People dislike	.168	.578	.045	.165	.617	.168	.566
DEP – Could not get going	.103	.641	.053	.595	.162	.117	.641

A-2. Confirmatory Factor Analysis

CFA were conducted to compare the competing factor models. Using chi-square difference tests two comparisons of the factor models were examined: (1): a vs. b & (2) b vs. c. (a) a one-factor model, with 39 items of ICG and CESD vs. (b) a two-factor model, with ICG original nineteen items loadings on a factor (Complicated Grief) and CESD twenty items loadings on a factor (Depression); (c) an alternative two-factor model based on the EFA, with ICG sixteen items that were removed three cross-loaded items and CESD twenty items.

As can be seen Table 9, the one-factor model that thirty-nine items of ICG and CESD were loaded on one factor did not fit the data well. The first two-factor model with thirty-nine items showed a moderate fit and provided significantly stronger fit over the one-factor model, indicating the two-factor model is superior to the one-factor model. The alternative two-factor model provided a significantly stronger fit, indicating the alternative two-factor model is superior to the two-factor model using original items of ICG.

In short, ICG items and CESD items were distinctively loaded on two different factors. Model fit was improved when ICG 16 items were used to test the two-factor model, comparing to the original nineteen items. Consequently, this study uses a total of sixteen items from the ICG for complicated grief and twenty items from the CESD for depression. Additionally, this study also uses the original nineteen item version of ICG total score to see if there is difference between the sixteen- and nineteen- item versions in in terms of predicting depression.

Table 9.

Confirmatory Factor Models

	χ^2	df	p	CFI	RMSEA	SRMR	Comparison	$\Delta\chi^2$	P
1. One-factor (39 items)	1203.042	702	< .001	.541	.826	.426			
2. Two-factor (CG-19, DEP-20 items)	846.698	701	< .001	.925	.041	.068	1 – 2	341.28	< .001
3. Alternative two-factor (CG-16, DEP-20 items)	548.381	559	.009	.973	.027	.061	2 – 3	201.01	< .001

B. Exploring the Relationship between Economic Hardship and Complicated Grief (Aim #2)

This section examines the relationship between economic hardship and complicated grief by testing (1) the direct effect of economic hardship on complicated grief; (2) the indirect effect of economic hardship on complicated grief through depression; and (3) the moderating effect of economic hardship on the relationship between economic hardship and complicated grief.

As proposed above, before beginning to investigate the hypothesis for study Aim #2, preliminary analyses were examined. They include (1) checking the internal consistency of the instruments of the main study outcomes such as complicated grief and depression; (2) checking skewness of the main study variables; and (3) evaluation of the covariates for inclusion in the main analysis. What follow are the results of preliminary analyses and the main analyses for testing study aim #2.

B-1. Preliminary Analysis

B-1-1. Internal Consistency of the ICG and CESD

Preliminary analysis of study data began by first performing a series of analyses to check the internal consistency of the primary study measures. These analyses were conducted to estimate the reliability of the ICG 16 and 19 item versions as previously suggested in factor analyses (see page 79), and the CESD 20 item version. Cronbach's α was used as the measure of internal consistency, with estimates of $\alpha > .80$ considered to be indicative of a highly internally consistent scale, and estimates $\alpha > .70$ considered to be indicative of a minimally adequate internally consistent scale (Nunnally, 1978). Internal consistency estimates for scales with missing data were calculated using the expectation-maximization algorithm, which has been

shown to be more accurate than listwise or pairwise deletion when computing Cronbach's α (Enders, 2003).

ICG. Table 10 presents internal consistency estimates of the total scale of 19 items. The internal consistency of this measure is considered highly internally consistent ($\alpha = .89$). All 19 items demonstrated moderate to high item-total correlation with the overall scale. The internal consistency estimates of the reduced 16 item version is also considered highly internally consistent ($\alpha = .89$). All the items demonstrated moderate to high item-total correlation with the overall scale.

CESD. Internal consistency estimates for the CESD at pre-loss and post-loss are presented in Table 11. As can be seen in Table 11, the internal consistency of the CESD was within the excellent range (.91-.92), with all items displaying high item-total correlations.

B-1-2. Skewness Tests of Main Study Variables

After checking the internal consistency of the main study measures, a series of analyses was conducted to examine the distributions of these measures and ensure they met the assumptions for parametric testing. Skewness statistics greater than .75 were considered indicative of skewed distributions (McAweeney & Klockar, 1998).

Table 12 presents descriptive statistics and skewness information for the main study variables. As can be seen, the skewness statistics of complicated grief and depression demonstrated significant skewness. Consequently, the main analyses use Satorra & Bentler's correction for non-normally skewed data is used and robust statistics are reported for the relationship among the hypothesized relationship.

Table 10.

Inventory of Complicated Grief Internal Consistency

Items	19 Item Version		16 Item Version	
	Alpha = .89		Alpha = .89	
	Item-Total Correlation	Alpha Without	Item-Total Correlation	Alpha Without
I think about this person so much that it's hard for me to do the things I normally do.	.682	.889	.68	.88
Memories of the person who died upset me.	.501	.895	.52	.89
I feel I cannot accept the death of the person who died.	.688	.889	.70	.88
I feel myself longing for the person who died.	.610	.891	.64	.88
I feel drawn to places and things associated with the person who died.	.571	.893	.58	.89
I can't help feeling angry about his/her death.	.645	.890	.64	.88
I feel disbelief over what happened.	.599	.892	.61	.89
I feel stunned or dazed over what happened.	.622	.891	.62	.88
Ever since he/she died, it is hard for me to trust people.	.462	.898	-	-
Ever since he/she died, I feel as if I have lost the ability to care about other people or I feel distant from people I care about.	.388	.897	-	-
I have pain in the same area of my body or have some of the same symptoms as the person who died.	.316	.899	-	-
I go out of my way to avoid reminders of the person who died.	.424	.879	.30	.90
I feel that life is empty without the person who died.	.606	.891	.61	.89
I hear the voice of the person who died speak to me.	.443	.896	.43	.89
I see the person who died stand before me.	.378	.898	.37	.89
I have feelings that it is unfair this person died.	.566	.893	.58	.89
I feel bitter over this person's death.	.589	.892	.58	.89
I feel envious of others who have not lost someone close.	.354	.898	.35	.89
I feel lonely a great deal of the time ever since he/she died.	.625	.891	.62	.88

Note. Analysis was conducted on the first assessments after the loss.

Table 11.

Center for Epidemiological Studies for Depression Scale Internal Consistency

	Preloss		Postloss	
	Alpha = .911		Alpha = .923	
	Item-Total Correlation	Alpha Without	Item-Total Correlation	Alpha Without
I was bothered by things that usually don't bother me.	.531	.906	.606	.919
I did not feel like eating; my appetite was poor.	.461	.907	.660	.918
I felt that I could not shake off the blues.	.760	.900	.691	.917
I felt I was just as good as other people.	.327	.911	.319	.924
I had trouble keeping my mind on what I was doing.	.393	.910	.567	.920
I felt depressed.	.786	.899	.735	.916
I felt that everything I did was an effort.	.708	.901	.714	.916
I felt hopeful about the future.	.431	.909	.476	.922
I thought my life had been a failure.	.628	.905	.576	.920
I felt fearful.	.593	.905	.606	.919
My sleep was restless.	.457	.908	.529	.921
I was happy.	.637	.903	.683	.917
I talked less than usual.	.422	.909	.543	.920
I felt lonely.	.699	.901	.596	.919
People were unfriendly.	.375	.909	.441	.922
I enjoyed life.	.621	.904	.597	.919
I had crying spells.	.657	.903	.609	.919
I felt sad.	.713	.901	.715	.916
I felt that people dislike me.	.284	.910	.408	.923
I could not get "going."	.534	.906	.657	.918

Table 12.

Skewness and Descriptive Values of Main Study Variable

Variable	Skew	M	SD	Min	Max
Complicated Grief	.93	18.15	12.08	0	67
CES-D Total					
Preloss	.76	14.47	10.52	0	45
Postloss	.64	16.84	11.17	0	48
Economic Hardship					
Preloss	.17	2.41	1.03	1	4
Postloss	.25	2.10	1.08	1	4

B-1-3. Identifying Potential Covariates

After examining the internal consistency and skewness of the study variables, a series of correlation analyses was conducted to examine the associations between primary study variables (i.e., complicated grief, depression, and economic hardship) and potential covariates.

As can be seen by the correlation matrix (Table 13), education level exhibited significant association with a number of the primary study variables (i.e., complicated grief, changes in depression, and changes in material hardship). In addition, preparation for death of the care recipient was associated with complicated grief and depression, such that caregivers who prepared for death of the care recipient are more likely to show higher scores in complicated grief and increases in depression. Positive aspects of caregiving were positively associated with complicated grief, not with changes in depression. Time since loss was significantly associated with increased depressive symptoms, indicating longer time since loss was associated with

reduction in depression over time. However, time since loss was not associated with complicated grief. As a consequence, subsequent analyses adjust for education level, time since loss, preparation to the death, caregiving burden, the REACH intervention assignment, and positive aspects of caregiving when examining the relationship between changes in economic hardship, complicated grief, and changes in depressive symptoms. Table 13 presents correlation matrix for all variables in the analysis.

B-1-4. Patial Correlation Tests of Main Study Variables

As can be see Table 14, there were significant relationships between complicated grief and covariates such as education level, preparation to the death, and positive aspects of caregiving. For changes in depressive symptoms, education level, time since loss, REACH intervention assignment, and preparation to the death showed significant relationships. These covariates that revealed significant relationships with complicated grief and depressive symptoms are included in the analysis as covariates. Partial correlation test revealed that there were significant relationships among the three main study variables, adjusting for the demographic variables (Table 14).

Table 13.

Association Between Main Study Variables and Potential Covariates

Primary Study Variable	Age	Sex	Education Level	Time Since Loss	Preparation	Antidepressant Use	REACH Intervention Assignment	Caregiving Burden	Positive Aspects of Caregiving
ICG19	-.06	-.12	-.21**	-.05	-.27***	.06	-.14*	.07	.20**
ICG16	-.02	-.12	-.19**	-.06	-.27***	.07	-.16*	.07	.20**
Δ _CESD	-.02	-.07	-.22**	-.28***	-.32***	-.04	-.08	-.10	.14
Pre_CESD	-.18*	.09	-.11	.17*	-.08	.30***	-.07	.32***	-.17**
Post_CESD	-.12	-.01	-.24**	-.13	-.31***	.14*	-.10	.10	.01
Δ _EH	-.04	.02	-.20**	-.03	-.13	-.10	.07	-.03	.01
Pre_EH	-.19*	.11	-.15*	.05	-.14	-.06	-.02	.06	.21**
Post_EH	-.13	.07	-.24*	-.004	-.18*	-.12	.05	-.0004	.10
Δ _Income	-.02	-.01	.08	-.08	-.09	-.04	.09	-.16*	-.08
Pre_Income	-.12	.01	.38***	.04	.18**	.01	-.09	.08	-.06
Post_Income	-.11	.00	.35***	-.02	.09	-.02	-.02	-.03	-.09

Note. Δ - Change Score, EH – Economic Hardship

Table 14.

Partial Correlations of Primary Study Variables

	CG 19	CG16	Changes in Depression
Change in Economic Hardship	.18*	.18*	.28***
Change in Household Income	-.05	-.04	-.09
Change in Depression	.39***	.36***	-

***p < .001 *p < .05

Control variables include: age, sex, education level, and time since loss

C. Test of Direct Effect of Increased Economic Hardship on Complicated Grief (Aim #2-1)

The variables that were found out to be significantly related to complicated grief in the bivariate analyses above were included in modeling the relationship between increased economic hardship and complicated grief.

Table 15 presents the fit indices from the path models that indicate good fits to the observed data. Figure 3-4 presents the results of a path model examining the relationship between changes in economic hardship and complicated grief. As can be seen in Figure 3-4, significant relationship was not observed between changes in economic hardship and complicated grief, indicating the absence of a substantive direct effect of changes in economic hardship on complicated grief. As such, the hypothesis that increased economic hardship positively predicts complicated grief (Study Aim #2-1) was not supported. There was also no significant relationship between changes in household income and complicated grief, indicating the absence of a substantive direct effect of changes in household income on complicated grief.

There was a significant prediction of education level for changes in economic hardship. The correlation relationship between changes in economic hardship and changes in household income was found to be significant.

Table 15 shows that the predictors of complicated grief in this dissertation study are different from those found in the Schulz study. This dissertation study found changes in depressive symptoms to be a significant predictor of complicated grief, whereas the Schulz's study found pre and post-loss depression, caregiving-burden, and positive aspects of caregiving to be significant with complicated grief. When the Schulz study fitted the model for complicated grief with pre-loss information, they found caregiver burden and positive aspects of caregiving to be significant predictors of complicated grief.. In this dissertation study that predicts complicated

grief with pre- and post-loss information together, changes in depressive symptoms is the only significant predictor of complicated grief.

Table 15.

Comparison of the Results of Dissertation Study with the Schulz (2006) study results

	Significant Predictors of Complicated Grief	
	Dissertation Study	Schulz Study
Pre-loss	Changes in depressive symptoms	Depressive symptoms, Caregiver burden, Positive aspects of caregiving
Post-loss		Depressive symptoms

Table 16.

Fit Indices of Path Models of the Direct Effect of Economic Hardship on Complicated Grief

Outcome	Fit Index			
	$\chi^2(df) / p$	CFI	RMSEA	SRMR
ICG19	15.74(11) / .15	.97	.05	.04
ICG16	15.23(11) / .17	.97	.04	.04

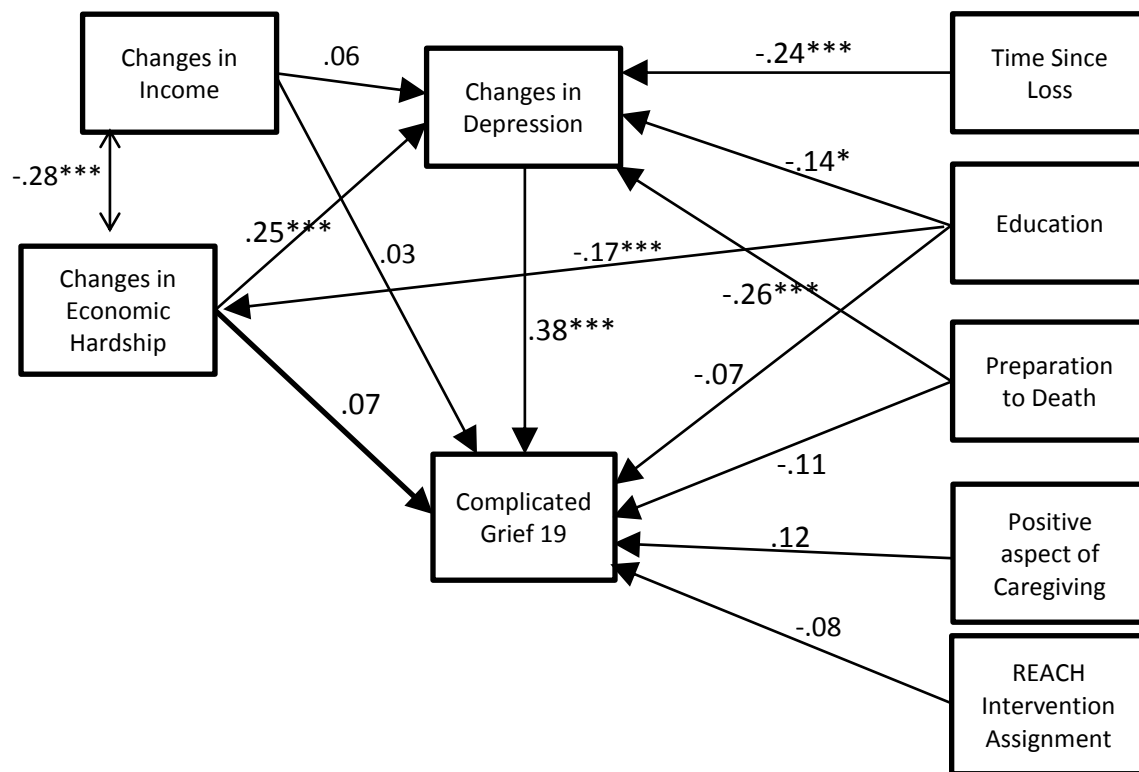


Figure 3.

Path Models of the Direct Effect of Economic Hardship on Complicated Grief (ICG 19)

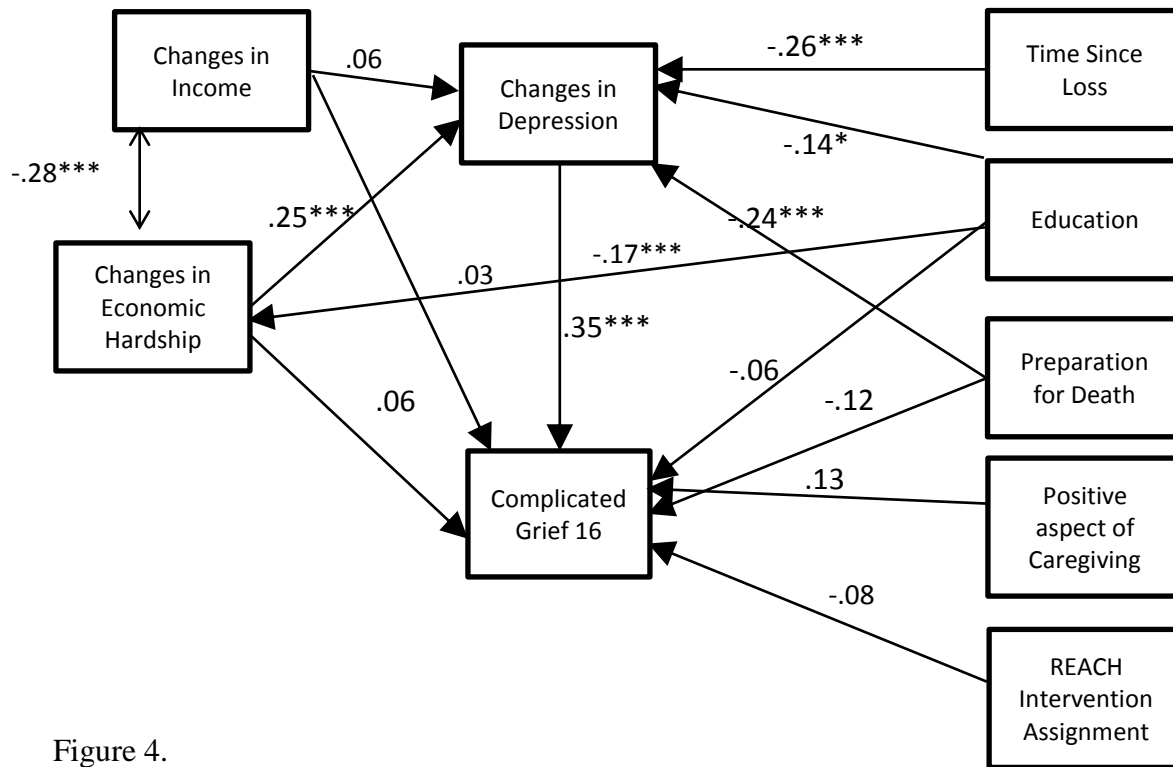


Figure 4.

Path Models of the Direct Effect of Economic Hardship on Complicated Grief (ICG 16)

D. Test of Indirect Effect of Economic Hardship on Complicated Grief through Depression

(Aim #2-2)

The indirect effect of increased economic hardship on complicated grief through increased depressive symptoms was examined. Mackinnon, Fritz, Williams, and Lockwood's (2007) asymmetric test of indirect effect of changes in economic hardship on complicated grief was conducted with 2,000 bootstrapping replications. As can be seen in Table 16, there was a significant indirect effect of increased economic hardship on complicated grief through increased depressive symptoms for both ICG 16 and 19 versions. Such findings suggest bereaved caregivers with larger increases in economic hardship positively predict depressive symptoms and in turn increased depressive symptoms positively predict complicated grief, whereas there was no significant indirect effect of change in household income through depression.

Given that the significant relationship between changes in economic hardship and complicated grief as can be seen above became not significant after controlling for changes in depressive symptoms, changes in economic hardship is likely acting as a full mediator in the relationship between changes in economic hardship and complicated grief.

Given the possibility of negativity bias that those with depressive symptoms may affect the subjective measure of economic hardship, a reverse mediation model was tested—the indirect effect of depressive symptoms on complicated grief through economic hardship. There was no significant indirect effect ($z=.897$, $p=.37$).

Table 17.

Indirect Effects of Economic Hardship on Complicated Grief through Depression

Outcome of Indirect Path	β	z	p	Bootstrapped 95% CI (L/U)
ICG19	1.13	2.41	.02	.46 / 1.81
ICG16	.92	2.29	.02	.37 / 1.48

E. Test of Moderating Effect of Economic Hardship on the Relationship between Depression and Complicated Grief (Aim #2-3)

The moderating effect of increased economic hardship on the relationship between increased depressive symptoms and complicated grief was tested by including the interaction term of changes in economic hardship and changes in depression in the analytic model.

Figure 5-6 presents the results of a path model examining the moderating effect of changes in economic hardship on the relationship between changes in depressive symptoms and complicated grief. As can be seen in Figure 5-6, the interaction terms were not significant, indicating the absence of a substantive moderating effect of changes in economic hardship on complicated grief. As such, the hypothesis that increased economic hardship moderates the relationship between changes in depressive symptoms and complicated grief was not supported.

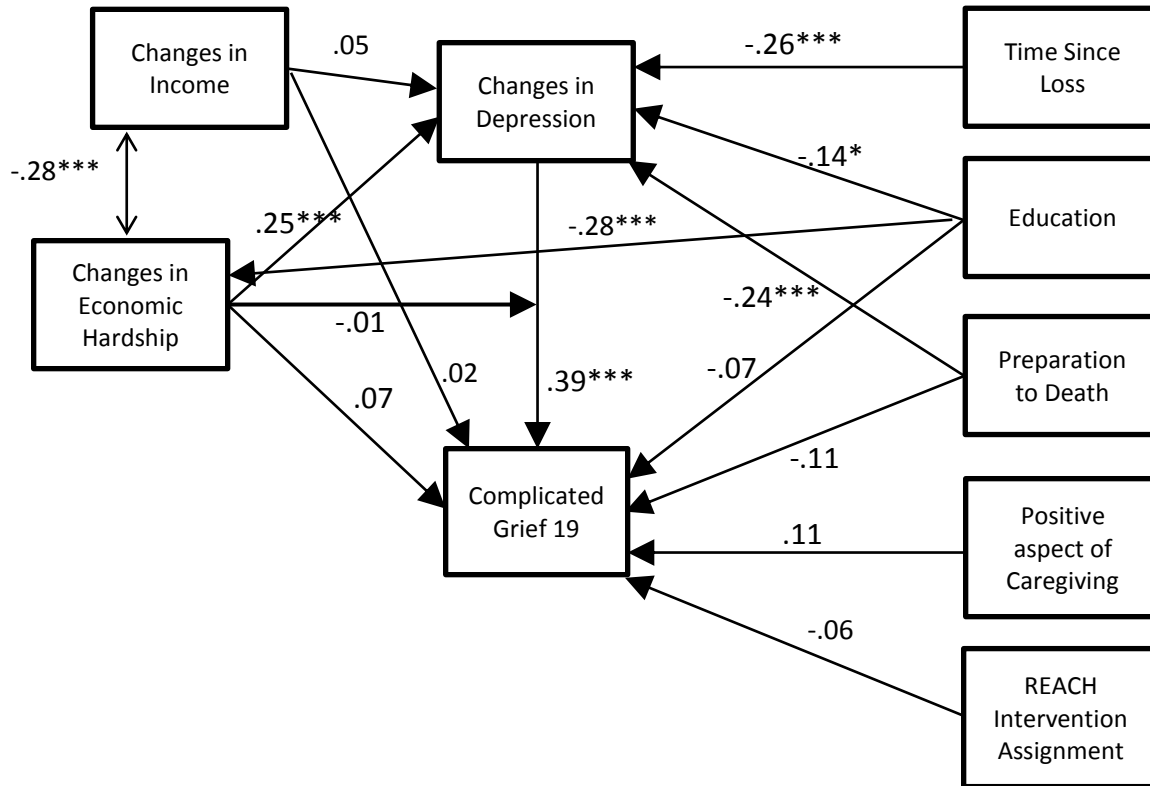


Figure 5.

Moderation Model of Economic Hardship on the Relationship between Depression and Complicated Grief (ICG 19)

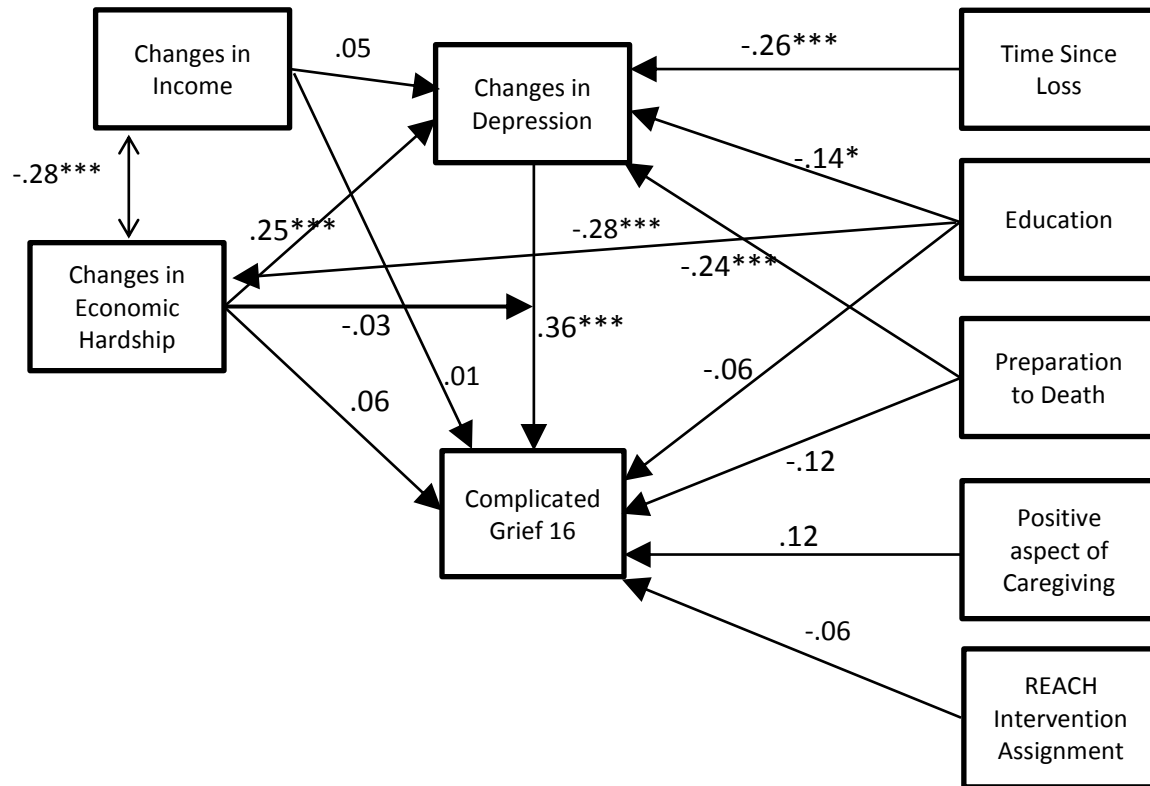


Figure 6.

Moderation Model of Economic Hardship on the Relationship between Depression and Complicated Grief (ICG 16)

Chapter V. Discussion

Complicated grief is an intense and persistent type of grief which appears to be distinct from depression. Despite the importance of this recently defined syndrome, we are only beginning to learn what factors make people vulnerable to it. Various stressors have been found to be associated with complicated grief, however, to date, studies have focused on individual stressors, such as negative cognition and attachment style. Contextual stressors, such as economic hardship, are probably important, and have been understudied. Additionally, depression may itself be a risk factor for complicated grief, as recent evidence supports that individuals with depression are more likely to have complicated grief symptoms. Using the REACH data which was prospectively collected from caregivers of Alzheimer's patients, this study extends knowledge about complicated grief in two ways. First, the study advances knowledge about the separate nature of complicated grief and depression by confirming the two-factor structure (i.e., Complicated Grief vs. Depression); and second, it tests whether economic hardship predicts complicated grief, and if so, whether it exerts its influence independently, or through depression. This chapter provides a summary of the results of this research designed to address these aims, as well as a discussion of study limitations and implications for future research and practice.

A. Discussion of Findings

A-1. Summary of Findings

This study provides two important advances to the field of complicated grief research. First, the constructs of complicated grief and depression have been examined if they can be distinct in a sample of bereaved dementia caregivers. Evidence was found supporting that complicated grief can be a distinct construct from depression, and findings support the reduced

item version of ICG (i.e., 16 items) is superior to the original version of ICG (i.e., 19 items) in distinguishing complicated grief from depressive symptoms. As the readers can see, these results were compelling enough to inform the subsequent analytic approach used for examining the relations between complicated grief and depressive symptoms, resulting in a significant positive relationship. These findings are discussed in detail below.

The second major contribution of this study comes from the elucidation of the effect of economic hardship on complicated grief, which was never examined in the past research on complicated grief. Evidence was found only supporting the indirect effect of economic hardship on complicated grief through depressive symptoms. No evidence was found for the direct effect of economic hardship on complicated grief. In particular, the significant association between changes in economic hardship and complicated grief became non-significant after adding the variable of changes in depressive symptoms. This finding provides a support for a mediating role of changes in depressive symptoms in the relationship between changes in economic hardship and complicated grief. No support for the moderating effect of changes in economic hardship on the relationship between changes in depressive symptoms and complicated grief was observed indicating that changes in economic hardship might not exacerbate the effect of changes in depressive symptoms on complicated grief. Consequently, economic hardship has the indirect effect on complicated grief through depressive symptoms, and investigation of broader economic hardship constructs relevant to their effects on mental state in bereavement will be needed.

The broader implications of the two major contributions of this study are discussed below in detail within the study context, along with a discussion of study implications, which require replication of these results before firm conclusions can be drawn regarding the construct validity of complicated grief and depressive symptoms and the effects of economic hardship on

complicated grief and depressive symptoms. First, a detailed discussion of the findings of the first research aim of this research is provided.

A-2. Complicated Grief Symptoms are Distinct from Depressive Symptoms

This study found that complicated grief emerged as a discrete set of symptoms that were relatively independent of the symptoms of depression. The result of exploratory factor analysis revealed that symptoms of bereavement-related distress clustered into two separate factors, rather than clustering on a single factor. In general, the symptoms that loaded strongly on the complicated grief factor loaded weakly on the depression factor. Thus, the symptoms of complicated grief most clearly constituted a unique component of distress from depression. Additionally, confirmatory factor analyses confirmed that the two-factor solution (Complicated Grief vs. Depression) is superior over one-factor (Complicated Grief + Depression), and that the removed item version of two-factor solution [CG (ICG 16 items) vs. Depression] is superior to the original two-factor solution [CG (ICG 19 items) vs. Depression]. These tests support that symptoms of complicated grief are distinct from that of depression.

Since 1995 when ICG has been introduced by Prigerson et al., nine psychometric studies have examined its distinction from depressive symptoms, and they have reported the two-factor solution has better fit to the data than one-factor solution, indicating complicated grief is a unique construct from depressive symptoms. However, no study, to date, has examined a distinction between the two constructs among bereaved caregiver population. Building on this limitation, this study adds this evidence of the psychometric distinction of complicated grief and depression to complicated grief literature.

Distinguishing symptoms of complicated grief from that of depression is critical in the need of the development of treatment for complicated grief because it has been shown that the

symptoms of complicated grief have been mainly unresponsive with treatment for depression (Jacobs et al., 1987; Paternak et al., 1991; Pasternak et al., 1994; Reynolds et al., 1999).

Evidence concerning psychometric distinction of complicated grief from depression that this study found support a rationale for the development of a specifically designed intervention for bereaved dementia caregivers with both complicated grief and depressive symptoms, such that bereaved caregivers with complicated grief and depressive symptoms need to treat for both distinct two symptoms. The next section provides a detailed discussion of the findings of the second aim of this study.

A-3. Economic Hardship Predicts Complicated Grief

The second aim of this research was to examine the relationship between economic hardship and complicated grief. In the light of previous findings that those with a higher level of economic hardship are more vulnerable to experiencing depressive symptoms than those with a lower level of economic hardship, and that those with a higher level of depressive symptoms are more likely to have complicated grief than those with a lower level of depressive symptoms (Norris & Murrell, 1995; Wyatt, 2000). As the first study that combines these two relationships, this dissertation study found that economic hardship has an indirect effect on complicated grief. The proposed indirect effect of a contextual stressor (i.e., changes in economic hardship) on complicated grief through changes in depressive symptoms was confirmed, suggesting an intervention for reduction of economic hardship in bereavement may help to improve complicated grief symptoms by reducing changes in depressive symptoms.

No significant direct effect of increased economic hardship on complicated grief was observed, adjusting for changes in depressive symptoms as well as confounding the covariates. Of the covariates that analytic adjustments made for the relationship between economic hardship

and complicated grief, no significant relationship was present. The sole factor that remained significant was changes in depression, when being including together into the model. In addition, no moderating effect of changes in economic hardship on the relationship between changes in depressive symptoms and complicated grief. Consequently, no support was found for the study aim #2-1 and #2-3, indicating the absence of the direct effect and moderating effect of changes in economic hardship on complicated grief.

No direct effect of changes in economic hardship on complicated grief may be explained by mediating effect of changes in depressive symptoms, that is, the shared variances of changes in economic hardship with complicated grief may be eliminated by adjusting for changes in depressive symptoms into the model. This result is consistent with the parent study of this dissertation research examined by Schulz and colleagues (2006) that also reported that when post-loss depression level was adjusted for there was no significant relationship with complicated grief. This dissertation study found change scores of depressive symptoms is also the risk factor for complicated grief that remains significant with other variables. No moderating effect of changes in economic hardship on the depression-complicated grief relationship can be said that changes in economic hardship may not have an exacerbating effect for those with relatively higher increases in depressive symptoms for their complicated grief.

Consistent with previous findings (Keene & Prokos, 2008; Norris & Murrell, 1990; Wyatt et al, 1999), those who presented greater increases in economic hardship from pre- to post-loss are more likely to present greater increases in the total scores of depressive symptoms than those with smaller increases in economic hardship, that laid the framework for the indirect effect of changes in economic hardship on complicated grief through changes in depressive symptoms. Furthermore, evidence was found indicating that individuals who did not prepare to

the death, who have lower education level, and who reported shorter time since loss are more like to present a higher score of changes in depressive symptoms. As suggested by stress researchers, objective measure of economic hardship (e.g., changes in household income) did not predict changes in depressive symptoms, whereas the subjective measure of economic hardship predicted changes in depressive symptoms, supporting the researchers' argument of a superiority of subjective measure over objective measure in evaluating the effect of economic hardship on psychological distress (Khan & Pearlin, 2006). Although objective measure of economic hardship was not significantly associated with depressive symptoms, those with higher education levels presented higher increases in depressive symptoms, supporting that a high prevalence of depression has been repeatedly shown among those who have low socioeconomic status (Kessler, Foster, Saunders, & Stang, 1995; Melchior et al., 2011). Additionally, bereaved caregivers who prepared well for the death presented higher increases in depressive symptoms, pointing to the importance of helping those bereaved caregivers perceive as unprepared for the death to become economically and emotionally prepared before the death.

In summary, the results of this research point that complicated grief is distinct from depression, suggesting that a specifically designed for complicated grief is needed. Economic hardship has an indirect effect on complicated grief through changes in depressive symptoms, suggesting an intervention for reduction of economic hardship in bereavement may help to improve complicated grief symptoms by reducing changes in depressive symptoms. No evidence was found for a direct and moderating effect of changes in economic hardship on complicated grief.

B. Limitations

Prior to discussions of the implications of this research, it is important to note a number of limitations, which should both highlight the need for future research in this area and serve to temper substantive interpretations of this work and its implications for social work practice.

B-1. Limitations on Analysis of Aim #1

This study is limited by its somewhat modest sample size for the psychometric examination with thirty-nine items. Psychometric researchers have suggested the general recommendations of subjects-to-variables ratio: a ratio of 20:1 (Hair, Anderson, Tatham, and Black, 1995), or ratio of 10:1 (Marascuilo & Levin, 1983) That ratio requires that this study use a sample of 390; however the sample size of 221 that this study used did not meet even the ratio of 10:1. The confirmation of two-factor solution on complicated grief and depression should be replicated with a larger sample size.

Another limitation with this analysis stems from the nature of the sample, in that the participants are caregivers who tend to be mainly women (Arno, 2002). In fact, approximately 85% of the sample in this study were female. The two-factor solution of complicated grief and depression is needed to examine with heterogeneous sample, as recent reports reveal that grief symptoms may be different for a particular gender (Chen et al., 1999; Doka, 2008; Boelen et al., 2010).

In sum, while this study provides promising evidence of the two-factor solution of complicated grief and depression, this result should be replicated with a larger size and more heterogeneous samples.

B-2. Limitations on Analysis of Aim #2

The subjective measure of economic hardship was only one item. There is a need to construct a more comprehensive and more reliable tool to assess the multidimensional aspects of economic hardship. For example, high credit debt or loss of assets may affect mental health (Drentea, 2000). Additional research on developing a more comprehensive construct to assess economic hardship is warranted.

This study is limited to one follow-up time point participants after death. While the longitudinal nature of this research is a significant strength, using more than three follow-ups allows estimating a growth-curve modeling approach that can examine a trajectory of bereaved samples for economic hardship and mental health over time or trajectories of sub-samples (e.g. male vs., female) for economic hardship and mental health.⁴ As longevity continues to expand, many older adults who were retired or will retire soon will live on fixed incomes. Research is needed to examine the inter-relationship between changes in economic hardship and symptoms of depression and complicated grief over time after the death.

C. Implications for Research and Practice

The results of this investigation have a number of important implications for future research, despite the extant limitations of this study. In fact, study limitations can be seen as one of the major motivating factors for future investigations in this area and provide fertile ground for a number of new research directions. This section provides implications of this dissertation study for research and practice.

⁴ There are 62 cases that were followed-up after the death during the REACH project.

C-1. Distinguishing Complicated Grief Symptoms from Depression

The first main finding of this research was that the symptoms of complicated grief are distinct from those of depression. As noted in the limitations section, these results should be replicated with larger and more heterogeneous samples. Such research will address whether complicated grief needs to be dealt with differently from depression with a specific treatment for complicated grief. Additionally, the two-factor solution of complicated grief and depression should be tested if the factor structure is invariant across various subsamples (e.g., gender, race). Future studies on invariance of the two-factor solution across the subsamples will provide promising evidence as to whether different treatment approach should be developed for a specific population.

Understanding that complicated grief is distinct from depression could help social workers recognize that complicated grief needs special attention. Death of a loved one may create considerable uncertainty about the emotional state of bereaved individuals, and social workers could provide psychoeducation to individuals to inform them about complicated grief in order to demystify the process and empower clients to seek interventions that target symptoms of complicated grief that are distinct from symptoms of depression. In fact, a recently developed treatment for complicated grief (i.e., Complicated Grief Therapy) includes the provision of such information about complicated grief, and has found that psychoeducation on the aspects of the grieving process to be critical in the course of treatment (Shear, Frank, Houck, & Reynolds, 2005).

C-2. Understanding the Importance of Preventing Depression

The results of the significant indirect effect of economic hardship on complicated grief through depression point to the importance of a preventive intervention for depressive symptoms

for individuals whose loved ones go through end-of-life stage and thus who are exposed to the high risk of depression. Understanding that having depressive symptoms can increase complicated grief helps social work research to address the importance of monitoring pre-loss depressive symptoms of the individuals who are at the end-of-life stage. Additionally, understanding that having depressive symptoms can increase complicated grief facilitates the development of an intervention to prevent complicated grief symptoms that targets individuals who are at the end-of-life stage.

C-3. An Ecological Framework for Risk Factors for Complicated Grief

The second main finding of this research was that economic circumstances that bereaved individuals face may be a critical factor that deteriorates depressive symptoms, and in turn, complicated grief. While various individual stressors have been found to be associated with complicated grief, this dissertation study examines the effect of a contextual stressor, economic hardship on complicated grief. This study encourages understanding the risk factors for complicated grief in a broader sense than was previously understood. Most importantly, if various levels of stressors can deteriorate symptoms of complicated grief and depression, it is important that social workers involved in practice and research be aware of how these stressors can be alleviated.

C-4. Hollistic Models of Care for Bereaved Individuals

In addition to the ecological framework for understanding the risk factors for complicated grief, care for bereaved individuals with complicated grief can be understood at different levels. Stroebe and Schut (2005) note that one important step in conceptualizing the grieving process beyond the loss-related stressors is to explore the context in which complicated grief may be derived. To meet this aim, they suggest “restoration-related” stressors which disturb restoration

from the loss and move on to new life without the deceased person. This dual process modeling indicates that the non-complicated grieving process can be understood as a good working “oscillation” between the loss-related and restoration-related stressors. According to this conceptualization, interventions for bereaved individuals should target life stressors as well as emotional challenges. For example, interventions should target bereaved client’s economic hardship that can obstruct the oscillation pattern and hinder the bereaved from moving on to new life without the deceased person. As such, a holistic approach for care for bereaved individuals can suggest for a treatment component that can deal with challenges that contextual stressors can cause. With such research, it is hoped that studies will help develop a best intervention.

D. Conclusions

This research sought to distinguish the psychometric properties of complicated grief from those of depression among bereaved caregivers, and examine the relationship between economic hardship and complicated grief. Psychometric findings revealed that complicated grief is distinct from depression. Evidence was found for an indirect effect of economic hardship on complicated grief through depression. Future research will need to replicate the two-factor solution of complicated grief and depression with larger size and more heterogeneous samples, and focus on the development of a comprehensive measure of economic hardship. The results of this investigation make two important contributions to the field by providing empirically-based information on the distinction of symptoms of complicated grief from those of depression, and elucidating the indirect effect of economic hardship on complicated grief through depression. By identifying these results, it is hoped that continued progress will be made by social work researchers and practitioners to identify additional contributors to complicated grief, and

ultimately develop and disseminate effective treatment to improve the lives of the many bereaved individuals who suffer from complicated grief.

Appendix

Appendix A

Inventory of Complicated Grief

This appendix includes the Inventory of Complicated Grief developed by Prigerson et al., (1995).

Appendix: Inventory of Complicated Grief

Inventory of Complicated Grief (ICG)
 Holly Prigerson, Ph.D., Mark Miller, M.D., Charles F. Reynolds, III, M.D., Ellen Frank, Ph.D.

Subject Name: _____

ID Number: _____ Today's Date: 19 / /
(To be completed by office personnel) Year / Month / Day

PLEASE fill in the circle next to the answer which best describes how you feel right now:

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

Appendix B

Center for Epidemiologic Studies Depression Scale (CES-D)

This appendix includes the Center for Epidemiologic Studies Depression Scale (CES-D) developed by Radloff, (1977).

Center for Epidemiologic Studies Depression Scale (CES-D), NIMH

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

Week	During the Past			
	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I did not feel like eating; my appetite was poor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I felt that I could not shake off the blues even with help from my family or friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I felt I was just as good as other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I had trouble keeping my mind on what I was doing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I felt depressed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I felt that everything I did was an effort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I felt hopeful about the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I thought my life had been a failure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I felt fearful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. My sleep was restless.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I was happy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I talked less than usual.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I felt lonely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. People were unfriendly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I enjoyed life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I had crying spells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I felt sad.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I felt that people dislike me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I could not get "going."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCORING: zero for answers in the first column, 1 for answers in the second column, 2 for answers in the third column, 3 for answers in the fourth column. The scoring of positive items is reversed. Possible range of scores is zero to 60, with the higher scores indicating the presence of more symptomatology.

References

- Barnett, P. A., & Gotlib, I. H. (1988). Psychosocial functioning and depression: Distinguishing among antecedents, concomitants, and consequences. *Psychological Bulletin*, *104*(1), 97-126.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173-1182.
- Barry, L. C., Kasl, S. V., & Prigerson, H. G. (2002). Psychiatric disorders among bereaved persons: The role of perceived circumstances of death and preparedness for death. *American Journal of Geriatric Psychiatry*, *10*(4), 447-457.
- Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Statistical Psychology*, *3*(2), 77-85.
- Beery, L. C., Prigerson, H. G., Bierhals, A. J., Santucci, L. M., Newcom, J. T., Maciejewski, P. K., . . . Reynolds, C. F. (1997). Traumatic grief, depression and caregiving in elderly spouses of the terminally ill. *Journal of Death and Dying*, *35*(3), 261-279.
- Bentler, P. M. (2007). On tests and indices for evaluating structural models. *Personality and Individual Differences*, *42*(5), 825-829.
- Bierhals, A. J., Frank, E., Prigerson, H. G., Miller, M., Fasiczka, A., & Reynolds, C. F. r. (1995-1996). Gender differences in complicated grief among the elderly. *Journal of Death and Dying*, *32*(4), 303-317.
- Block, S. D. (2006). Psychological Issues in end-of-life care. *Journal of Palliative Medicine*, *9*(3), 751-772.
- Boelen, P. A. (2003). Reliability and validity of the Dutch version of the inventory of traumatic

- grief (ITG). *Death Studies*, 27, 227-247.
- Boelen, P. A. (2009). The centrality of a loss and its role in emotional problems among bereaved people. *Behaviour Research and Therapy*, 47(7), 616-622.
- Boelen, P. A., & van den Bout, J. (2005). Complicated grief, depression, and anxiety as distinct postloss syndromes: A confirmatory factor analysis study. *The American Journal of Psychiatry*, 162(11), 2175-2177.
- Boelen, P. A., van den Bout, J., & de Keijser, J. (2003). Traumatic grief as a disorder distinct from bereavement-related depression and anxiety: A replication study with bereaved mental health care patients. *The American Journal of Psychiatry*, 160(7), 1339-1341.
- Boelen, P. A., van den Bout, J., & van den Hout, M. A. (2003). The role of negative interpretations of grief reactions in emotional problems after bereavement. *Journal of Behavior Therapy and Experimental Psychiatry*, 34(3-4), 225-238.
- Boelen, P. A., van den Hout, M. A., & van den Bout, J. (2006). A Cognitive-Behavioral conceptualization of complicated grief. *Clinical Psychology: Science and Practice*, 13(2), 109-128.
- Bonnano, G. A., & Kaltman, S. (2001). The varieties of grief experience. *Clinical Psychology Review*, 21(5), 705-734.
- Bowers, M. B., Jr., Mazure, C. M., Nelson, J. C., & Jatlow, P. I. (1990). Psychotogenic drug use and neuroleptic response. *Schizophrenia Bulletin*, 16(1), 81-85.
- Bowlby, J. (1969). *Attachment and Loss I: Attachment*. NY: Basic Books.
- Bowlby, J. (1980). *Attachment and Loss III: Loss*. NY: Basic Books.
- Bowlby, J. (1982). Attachment and Loss: Retrospect and Prospect. *American Journal of Orthopsychiatry*, 52, 664-678.

- Breier, A., Kelsoe, J. R., Jr, Kirwin, P. D., Beller, S. A., Wolkowitz, O. M., & Pickar, D. (1988). Early parental loss and development of adult psychopathology. *Archives of General Psychiatry*, 45(11), 987-993.
- Brown, G. W. (2002). Social roles, context and evolution in the origins of depression. *Journal of Health and Social Behavior*, 43(3), 255-276.
- Brown, G. W., & Morgan, P. M. (1997). Single mothers, poverty and depression. *Psychological Medicine*, 27(01), 21-33. doi: doi:null
- Burke, L. A., Neimeyer, R. A., & Meghan, E. M. (2010). African American homicide bereavement: Aspects of social support that predict complicated grief, PTSD, and depression. *61, 1*, 1-24.
- Cannon, W. B. (1939). *The Wisdom of the Body* (2nd ed.). Oxford: England: Norton & Co.
- Chan, A., Ofstedal, M. B., & Hermalin, A. I. (2002). Changes in subjective and objective measures of economic well-being and their interrelationship among the elderly in Singapore and Taiwan. *Social Indicators Research*, 57(3), 263-300.
- Chandola, T., & Marmot, M. (2008). Health and Socioeconomic Status. In G. Fink (Ed.), *Stress Consequences: Mental, Neuropsychological and Socioeconomic* (pp. 591-597). NY: Wilsey.
- Chen, J. H., Bierhals, A. J., Prigerson, H. G., Kasl, S. V., Mazure, C. M., & Jacobs, S. (1999). Gender differences in the effects of bereavement-related psychological distress in health outcomes. *Psychological Medicine*, 29(02), 367-380.
- Chiu, Y.-W., Huang, C.-T., Yin, S.-M., Huang, Y.-C., Chien, C.-h., & Chuang, H.-Y. (2010). Determinants of complicated grief in caregivers who cared for terminal cancer patients. *Supportive Care in Cancer*, 18(10), 1321-1327.

- Cohen, M., Solowij, N., & Carr, V. (2008). Cannabis, cannabinoids and schizophrenia: integration of the evidence. *Australian and New Zealand Journal of Psychiatry*, 42(5), 357-368.
- Cole, M. G., & Dendukuri, N. (2003). Risk factors for depression among elderly community subjects: A systematic review and meta-analysis. *The American Journal of Psychiatry*, 160(6), 1147-1156.
- Corden, A., Hirst, M., & Nice, K. (2010). Death of a partner: Financial implications and experience of loss. *Bereavement Care*, 29(1), 23-28.
- Corden, A., & Hrst, M. (2008). Implementing a mixed methods approach to explore the financial implications of death of a life partner. *Journal of Mixed Methods Research*, 2(3), 208-220.
- Covinsky, K. E., Goldman, L., Cook, E. F., Oye, R., Desbiens, N., Reding, D., . . . Murphy, D. J. (1994). The impact of serious illness on patients' families. *JAMA: The Journal of the American Medical Association*, 272(23), 1839-1844.
- Currier, J. M., Holland, J. M., & Neimeyer, R. (2006). Sense-Making, Grief, and the Experience of Violent Loss: Toward a Mediational Model. *Death Studies*, 30, 403-428.
- Cutler, N. E., & Gregg, D. W. (1991). The human "wealth span" and financial well-being in older age. *Generations*, 15, 45-49.
- Dalgleish, T., & Power, M. J. (2004). Emotion-specific and emotion-non-specific components of posttraumatic stress disorder (PTSD): implications for a taxonomy of related psychopathology. *Behaviour Research and Therapy*, 42(9), 1069-1088.
- Davidson, G. C., Neale, J. M., & Kring, A. M. (2004). *Abnormal Psychology*. NY: John Wiley and Sons.
- de Ridder, D. (1999). Social Status and Stress. In G. Fink (Ed.), *Encyclopedia of Stress* (Vol. 2).

Edinburgh, UK: ACADEMIC PRESS.

- Desjarlais, R., Eisenberg, L., Good, B., & Kleinman, A. (1995). *World Mental Health: Problems and Priorities in Low-income Countries*. NY: Oxford University Press.
- Dillen, L., Fontaine, J. R. J., & Verhofstadt-Denève, L. (2009). Confirming the distinctiveness of complicated grief from depression and anxiety among adolescents. *Death Studies, 33*(5), 437-461.
- Donelan, K., Hill, C. A., Hoffman, C., Scoles, K., Feldman, P. H., Levine, C., & Gould, D. (2002). Challenged to care: Informal caregivers in a changing health system. *Health Affairs, 21*(4), 222-231.
- Dooley, D., Prause, J., & Kathleen, A. H. (2000). Underemployment and Depression: Longitudinal Relationships. *Journal of Health and Social Behavior, 41*(4), 421-436.
- Drentea, P., & Goldner, M. (2006). Caregiving outside of the home: The effects of race on depression. *Ethnicity and Health, 11*(1), 41-57.
- Drew, D., Goodenough, B., Maurice, L., Foreman, T., & Willis, L. (2005). Parental grieving after a child dies from cancer: is stress from stem cell transplant a factor. *International Journal of Palliative Nursing, 11*(6), 266-273.
- Du Plessix Gray, F. (2000). At large and at small: The work of mourning. *The American Scholar, 69*(7-13).
- Dyregrov, K., Nordanger, D. A. G., & Dyregrov, A. (2003). Predictors of psychosocial distress after suicide, SIDS and accidents. *Death Studies, 27*(2), 143-165.
- Enders, C. K. (2003). Using the Expectation Maximization Algorithm to Estimate Coefficient Alpha for Scales With Item-Level Missing Dat. *Psychological Methods, 8*(3), 322-337.
- Engel, G. L. (1961). Is grief a disease? A challenge for medical research. *Psychosomatic*

- Medicine*, 23, 114-120.
- Enright, B. P., & Marwit, S. J. (2002). Diagnosing complicated grief: A closer look. *Journal of Clinical Psychology*, 58(7), 747-757.
- Farmer, A., Elkin, A., & McGuffin, P. (2007). The genetics of bipolar affective disorder. *Current Opinion in Psychiatry*, 20(1), 8-12
- Ferrie, J. E., & Martikainen, P. (2007). Job Insecurity: The Health Effects of a Psychosocial Work Stressor. In G. Fink (Ed.), *Stress Consequences: Mental, Neuropsychological and Socioeconomic* (pp. 603-609). NY: Wiley.
- Freud, S. (1917/1957). *Mourning and Melancholia* (J. Strachey, Trans.). London: Hogarth Press.
- Freud, S. (1957). Mourning and melancholia. In J. Strachey (Ed.), *The Standard Edition of the Complete Psychological Works of Sigmund Freud* (pp. 239-258). London: Hogarth Press.
- Fujisawa, D., Miyashita, M., Nakajima, S., Ito, M., Kato, M., & Kim, Y. (2010). Prevalence and determinants of complicated grief in general population. *Journal of affective disorders*, 127(1-3), 352-358.
- Gana, K., & K'Delant, P. (2011). The effects of temperament, character, and defense mechanisms on grief severity among the elderly. *Journal of affective disorders*, 128(1-2), 128-134.
- Germain, A., Caroff, K., Buysse, D. J., & Shear, M. K. (2005). Sleep quality in complicated grief. *Journal of Traumatic Stress*, 18(4), 343-346.
- Gilbar, O. (1995). Coping with loss: Differences between widows and widowers of deceased cancer patients. *Journal of Death and Dying*, 31(3), 207-220.
- Gillen, M., & Kim, H. (2009). Older women and poverty transition. *Journal of Applied Gerontology*, 28(3), 320-341.

- Gitlin, L. N., Belle, S. H., Burgio, L., Czaja, S. J., Mahoney, D. F., Gallagher-Thompson, D., . . . Investigators, R. (2003). Effect of Multicomponent Interventions on Caregiver Burden and Depression: The REACH Multisite Initiative at 6-Month Follow-Up. *Psychology and Aging, 18*(3), 361-374.
- Glass, R. M. (2005). Is grief a disease? Sometimes. *JAMA: The Journal of the American Medical Association, 293*(21), 2658-2660.
- Golding, J. M., & Aneshensel, C. S. (1989). Factor structure of the Center for Epidemiologic Studies Depression Scale among Mexican Americans and non-Hispanic Whites. *Psychological Assessment, 1*(3), 163-168.
- Goodenough, B., Drew, D., Higgins, S., & Trethewie, S. (2004). Bereavement outcomes for parents who lose a child to cancer: Are place of death and sex of parent associated with differences in psychological functioning? *Psycho-Oncology, 13*(11), 779-791. doi: 10.1002/pon.795
- Goodkin, K., Lee, D., Molina, R., Zheng, W., Frasca, A., & O'Mellan, S. (2005). Complicated bereavement: Disease state or state of being. *Journal of Death and Dying, 52*, 21-26.
- Gove, W. R. (2010). Mental illness and psychiatric treatment among women. *Psychology of Women Quarterly, 34*(3), 345-362.
- Griesinger, W. (1867/1882). *Mental Pathology and Therapeutics*. NY: William Wood.
- Gupta, S., & Bonnano, G. A. (2011). Complicated grief and deficits in emotional expressive flexibility. *Journal of Abnormal Psychology, 120*(3), 635-643.
- Haaga, D. A. F., Dyck, M. J., & Ernst, D. (1991). Empirical status of cognitive theory of depression. *Psychological Bulletin, 110*(2), 215-236.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate Data Analyses*.

New York: Saddle River.

- Hamilton, S. P. (2009). The Genetics of Anxiety Disorders. In D. B. Wildenauer (Ed.), *Molecular Biology of Neuropsychiatric Disorders* (Vol. 23, pp. 165-185): Springer Berlin Heidelberg.
- Hanratty, B., Holland, P., Jacoby, A., & Whitehead, M. (2007). Financial stress and strain associated with terminal cancer—a review of the evidence. *Palliative Medicine*, *21*(7), 595-607.
- Hardison, H. G., Neimeyer, R. A., & Lichstein, K. L. (2005). Insomnia and complicated grief symptoms in bereaved college students. *Behavioral Sleep Medicine*, *3*(2), 99-111.
- Hebert, R. S., Arnold, R. M., & Schulz, R. (2007). Improving well-being in caregivers of terminally ill patients. *Journal of Pain and Symptom Management*, *34*(5), 539-546.
- Hebert, R. S., Dang, Q., & Schulz, R. (2006). Preparedness for the death of a loved one and mental health in bereaved caregivers of patients with dementia: Findings from the REACH study. *Journal of Palliative Medicine*, *2006*(9), 3.
- Heilbronner, U., van Kampen, M., & Flügge, G. (2004). The Alpha-2B Adrenoceptor in the Paraventricular Thalamic Nucleus is Persistently Upregulated by Chronic Psychosocial Stress. *Cellular and Molecular Neurobiology*, *24*(6), 815-831.
- Heim, C., Owens, M. J., Plotsky, P. M., & Nemeroff, C. B. (1997). Persistent changes in corticotropin-releasing factor systems due to early life stress: Relationship to the pathophysiology of major depression and post-traumatic stress disorder. *Psychopharmacology Bulletin*, *33*(2), 185-192.
- Herman, J. P., Figueiredo, H., Mueller, N. K., Ulrich-Lai, Y., Ostrander, M. M., Choi, D. C., & Cullinan, W. E. (2003). Central mechanisms of stress integration: hierarchical circuitry

- controlling hypothalamo–pituitary–adrenocortical responsiveness. *Frontiers in Neuroendocrinology*, 24(3), 151-180.
- Hertzog, C., Van Alstine, J., Usala, P. D., Hultsch, D. F., & Dixon, R. (1990). Measurement properties of the Center for Epidemiological Studies Depression Scale (CES-D) in older populations. *Psychological Assessment*, 2(1), 64-72.
- Hettema, J. M., Neale, M. C., & Kendler, K. S. (2001). A review and meta-analysis of the genetic epidemiology of anxiety disorders. *American Journal of Psychiatry*, 158(10), 1568-1578.
- Holahan, C. J., & Moos, R. H. (1991). Life stressors, personal and social resources, and depression: A 4-year structural model. *Journal of Abnormal Psychology*, 100(1), 31-38.
- Holden, K. C., & Zick, C. (2002). Distributional changes in income and wealth upon widowhood: Implications for private insurance and public policy. *Retirement Needs Framework*, 69-79.
- Holland, J. M., Currier, J. M., & Gallagher-Thompson, D. (2009). Outcomes from the Resources for Enhancing Alzheimer's Caregiver Health (REACH) program for bereaved caregivers. *Psychology and Aging*, 24(1), 190-202.
- Holmes, A. (2008). Genetic variation in cortico-amygdala serotonin function and risk for stress-related disease. *Neuroscience & Biobehavioral Reviews*, 32(7), 1293-1314.
- Holtzlander, L. (2008). Caring for bereaved family caregivers: Analyzing the context of care. *Clinical Journal of Oncology Nursing*, 12(3), 501-506.
- Holtzlander, L., & McMillan, S. (2011). Depressive symptoms, grief, and complicated grief among family caregivers of patients with advanced cancer three months into bereavement. *Oncology Nursing Forum*, 38(1), 60-65.

- Horowitz, M. J., Siegel, B., Holen, A., Bonanno, G. A., Milbrath, C., & Stinson, C. H. (2003).
Diagnostic criteria for complicated grief disorder. *American Journal of Psychiatry, 154*,
904-910.
- Horowitz, M. J., Siegel, B., Holen, A., Bonanno, G. A., Milbrath, C., & Stinson, C. H. (2003).
Diagnostic criteria for complicated grief disorder. *Focus, 1*(3), 290-298.
- Hungerford, T. L. (2001). The economic consequences of widowhood on elderly women in the
United States and Germany. *The Gerontologist, 41*(1), 103-110.
- Jacobs, S., Kosten, T. R., Kasl, S. V., Ostfeld, A. M., Berkman, L., & Charpentier, P. (1987).
Attachment theory and multiple dimensions of grief. *Journal of Death and Dying, 18*(1),
41-52.
- Johnson, J., First, M., Block, S., Vanderwerker, L., Zivin, K., Zhang, B., & Prigerson, H. (2009).
Stigmatization and Receptivity to Mental Health Services Among Recently Bereaved
Adults. *Death Studies, 33*(8), 691-711.
- Johnson, J. G., Zhang, B., Greer, J. A., & Prigerson, H. G. (2007). Parental control, partner
dependency, and complicated grief among widowed adults in the community. *The
Journal of Nervous and Mental Disease, 195*(1), 26-30.
- Jones, D., Harvey, J., Giza, D., Rodican, C., Barreira, P. J., & Macias, C. (2003). Parental death
in the lives of people with serious mental illness. *Journal of Loss and Trauma, 8*(4), 307-
322.
- Kaiser, H. (1970). A second generation little jiffy. *Psychometrika, 35*(4), 401-415.
- Keene, J. R., & Prokos, A. H. (2008). Widowhood and the end of spousal care-giving: relief or
wear and tear? *Ageing & Society, 28*(04), 551-570.
- Keesee, N. J., Currier, J. M., & Neimeyer, R. A. (2008). Predictors of grief following the death

- of one's child: the contribution of finding meaning. *Journal of Clinical Psychology*, 64(10), 1145-1163.
- Kersting, A., Brähler, E., Glaesmer, H., & Wagner, B. (2011). Prevalence of complicated grief in a representative population-based sample. *Journal of affective disorders*, 131(1-3), 339-343.
- Kessler, R. C., Turner, J. B., & House, J. S. (1987). Intervening processes in the relationship between unemployment and health. *Psychological Medicine*, 17(4), 949-961.
- Khan, J. R., & Pearlin, L. I. (2006). Financial strain over the life course and health among older adults. *Journal of Health and Social Behavior*, 47(1), 17-31.
- Kirst-Ashman, K., & Hull, G. (2006). *Understanding Generalist Practice*. CA: Brooks/Cole Publishers.
- Kissane, D. W., Bloch, S., & McKenzie, D. P. (1997). Family coping and bereavement outcome. *Palliative Medicine*, 11(3), 191-201.
- Klein, M. (1999). Mourning and its relation to manic-depressive states. In D. Bassin (Ed.), *Female Sexuality: Contemporary Engagements*. North Bergen, NJ: Book-mart Press, Inc.
- Knight, R. G., Williams, S., McGee, R., & Olaman, S. (1997). Psychometric properties of the Centre for Epidemiologic Studies Depression Scale (CES-D) in a sample of women in middle life. *Behaviour Research and Therapy*, 35(4), 373-380.
- Kramer, B. J., Kavanaugh, M., Trentham-dietz, A., Walsh, M., & Yonker, J. A. (2010-2011). Complicated grief symptoms in caregivers of persons with lung cancer: The role of family conflict, intrapsychic strains, and hospice utilization. *Journal of Death and Dying*, 62(3), 201-220.
- Kubicki, M., McCarley, R., Westin, C.-F., Park, H.-J., Maier, S., Kikinis, R., . . . Shenton, M. E.

- (2007). A review of diffusion tensor imaging studies in schizophrenia. *Journal of Psychiatric Research*, 41(1), 15-30.
- Latham, A. E., & Prigerson, H. G. (2004). Suicidality and bereavement: Complicated grief as psychiatric disorder presenting greatest risk for suicidality. *Suicidal and Life-Threatening Behavior*, 34(4), 350-362.
- Laurie, A., & Neimeyer, R. (2006). African Americans in bereavement: Grief as a function of ethnicity. *Journal of Death and Dying*, 57(2), 173-193.
- Lawton, M. P., & Brody, E. M. (1969). Assessment of older people: Self-maintaining and instrumental activities of daily living. *The Gerontologist*, 9(3), 179-186.
- Lazarus. (1984). *Stress, Appraisal, and Coping*. NY: Springer Publishing Company.
- Lee, G. R., Willetts, M. C., & Seccombe, K. (1998). Widowhood and depression. *Research on Aging*, 20(5), 611-630.
- Levinson, D. S., & Prigerson, H. G. (2000). Traumatic grief and the spousal loss model. *Illness, Crisis, & Loss*, 8(1), 32-46.
- Lewis, G., Bebbington, P., Brugha, T., Farrell, M., Gill, B., Jenkins, R., & Meltzer, H. (1998). Socioeconomic status, standard of living, and neurotic disorder. *The Lancet*, 352(9128), 605-609.
- Lichtenthal, W. G., Cruess, D. G., & Prigerson, H. G. (2004). A case for establishing complicated grief as a distinct mental disorder in DSM-V. *Clinical Psychology Review*, 24(6), 637-662.
- Lindemann, E. (1944). The symptomatology and management of acute grief. *The American Journal of Psychiatry*, 101, 141-148.
- Liu, Z., Tam, W.-C. C., Xie, Y., & Zhao, J. (2002). The relationship between regional cerebral

- blood flow and the Wisconsin Card Sorting Test in negative schizophrenia. *Psychiatry and Clinical Neurosciences*, 56(1), 3-7.
- Lopata, H. Z. (1996). *Current Widowhood: Myths and realities*. Thousand Oaks, CA: Sage Publications.
- Lukoff, D., Snyder, K., Ventura, J., & Nuechterlein, K. H. (1984). Life Events, familial stress, and coping in the developmental course of schizophrenia. *Schizophrenia Bulletin*, 10(2), 258-292.
- Lynch, J. W., Kaplan, G. A., & Shema, S. J. (1997). Cumulative impact of sustained economic hardship on physical, cognitive, psychological, and social functioning. *The New England Journal of Medicine*, 337(26), 1889-1895.
- Mackinnon, D. P., & Dwyer, J. H. (1993). Estimating mediated effects in prevention studies. *Evaluation Review*, 17(2), 144-158.
- Marasculio, A., & Levin, J. R. (1983). *Multivariate Statistics in the Social Sciences*. Monterey, CA: Brooks/Cole.
- Matthews, K. (1999). Depression Models. In G. Fink (Ed.), *Encyclopedia of Stress* (Vol. 1). Edinburgh, UK: ACADEMIC PRESS.
- Maytal, G., Zalta, A. K., Thompson, E., Chow, C. W., Perlman, C., Ostacher, M. J., . . . Simon, N. M. (2007). Complicated grief and impaired sleep in patients with bipolar disorder. *Bipolar Disorders*, 9(8), 913-917.
- McAweeney, M. J., & Klockars, A. J. (1998). Maximizing power in skewed distributions: Analysis and assignment. *Psychological Methods*, 3(1), 117-122.
- McEwen, B. S., & Stellar, E. (1993). Stress and the Individual: Mechanisms Leading to Disease. *Archives of Internal Medicine*, 153(18), 2093-2101.

- Meehl, P. E. (1962). Schizotaxia, schizotypy, schizophrenia. *American Psychologist*, 17(12), 827-838.
- Meert, K. L., Donaldson, A. E., Newth, C. J. L., Harrison, R., Berger, J., Zimmerman, J., . . . Shear, K. (2010). Complicated Grief and Associated Risk Factors Among Parents Following a Child's Death in the Pediatric Intensive Care Unit. *Archives of Pediatrics and Adolescent Medicine*, 164(11), 1045-1051.
- Meert, K. L., Shear, K., Newth, C. J. L., Harrison, R., Berger, J., Zimmerman, J., . . . Human Development Collaborative Pediatric Critical Care Research Network, C. (2011). Follow-up study of complicated grief among parents eighteen months after a child's death in the pediatric intensive care unit. *Journal of Palliative Medicine*, 14(2), 207-214.
- Melhem, N. M., Day, N., Shear, K., Day, R., Reynolds, C., III, & Brent, D. (2004). Predictors of complicated grief among adolescents exposed to a peer's suicide. *Journal of Loss and Trauma*, 9, 21-34.
- Melhem, N. M., Moritz, G., Walker, M., Shear, M. K., & Brent, D. (2007). Phenomenology and correlates of complicated grief in children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46(4), 493-499.
- Mendes de leon, C. F., Kasl, S. V., & Jacobs, S. (1994). A prospective study of widowhood and changes in symptoms of depression in a community sample of the elderly. *Psychological Medicine*, 24, 613-624.
- Metzger, P. L., & Gray, M. J. (2008). End-of-life communication and adjustment: Pre-loss communication as a predictor of bereavement-related outcomes. *Death Studies*, 32(4), 301-325.
- Mino, I., Profit, W. E., & Pierce, C. M. (2000). Minorities and Stress. In G. Fink (Ed.), *Stress*

- Consequences: Mental, Neuropsychological and Socioeconomic* (pp. 673-679). NY: Wilsey.
- Mirowsky, J., & Ross, C. E. (2000). Education Levels and Stress. In G. Fink (Ed.), *Stress Consequences: Mental, Neuropsychological and Socioeconomic* (pp. 654-659). NY: Wilsey.
- Mirowsky, J., & Ross, C. E. (2001). Age and the effect of economic hardship on depression. *Journal of Health and Social Behavior*, 42(2), 132-150.
- Mitchell, A. M., Kim, Y., Prigerson, H. G., & Mortimer, M. K. (2005). Complicated grief and suicidal ideation in adult survivors of suicide. *Suicide and Life-Threatening Behavior*, 35(5), 498-506.
- Mitchell, A. M., Kim, Y., Prigerson, H. G., & Mortimer-Stephens, M. (2004). Complicated grief in survivors of suicide. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*, 25(1), 12-18.
- Monroe, S. M., & Simons, A. D. (1991). Diathesis–stress theories in the context of life stress research: Implications for the depressive disorders. *Psychological Bulletin*, 110(3), 406-425.
- Neimeyer, R., Baldwin, S., & Gillies, J. (2006). Continuing bonds and reconstructing meaning: Mitigating complications in bereavement. *Death Studies*, 30(8), 715-738.
- Neria, Y., Gross, R., Litz, B., Maguen, S., Insel, B., Seirmarco, G., . . . Marshall, R. D. (2007). Prevalence and psychological correlates of complicated grief among bereaved adults 2.5–3.5 years after September 11th attacks. *Journal of Traumatic Stress*, 20(3), 251-262.
- Neria, Y., & Litz, B. T. (2004). Bereavement by traumatic means: The complex synergy of traumatic grief. *Journal of Loss and Trauma*, 9, 73-87.

- Newby, J. M., & Moulds, M. L. (2010). Negative intrusive memories in depression: The role of maladaptive appraisals and safety behaviours. *Journal of affective disorders, 126*(1), 147-154.
- Newson, R. S., Boelen, P. A., Hek, K., Hofman, A., & Tiemeier, H. (2011). The prevalence and characteristics of complicated grief in older adults. *Journal of affective disorders, 132*(1-2), 231-238.
- Nguyen, H. T., Kitner-Triolo, M., Evans, M. K., & Zonderman, A. B. (2004). Factorial invariance of the CES-D in low socioeconomic status African Americans compared with a nationally representative sample. *Psychiatry Research, 126*(2), 177-187.
- Norris, F. H., & Murrell, S. A. (1990). Social support, life events, and stress as modifiers of adjustment to bereavement by older adults. *Psychology and Aging, 5*(3), 429-436.
- Nunnally, J. (1978). *Psychometric Theory*. New York: McGraw-Hill.
- O'Connor, M. (2005). Bereavement and the Brain: Invitation to a Conversation between Bereavement Researchers and Neuroscientists. *Death Studies, 29*(10), 905-922.
- O'Connor, M.-F., Allen, J. J. B., & Kaszniak, A. W. (2002). Autonomic and emotion regulation in bereavement and depression. *Journal of Psychosomatic Research, 52*(4), 183-185.
- O'Connor, M.-F., Wellisch, D. K., Stanton, A. L., Eisenberger, N. I., Irwin, M. R., & Lieberman, M. D. (2008). Craving love? Enduring grief activates brain's reward center. *NeuroImage, 42*(2), 969-972.
- Ogrodniczuk, J. S., Piper, W. E., Joyce, A. S., Weideman, R., McCallum, M., Azim, H. F., & Rosie, J. S. (2003). Differentiating symptoms of complicated grief and depression among psychiatric outpatients. *The Canadian Journal of Psychiatry, 48*(2), 87-93.
- Organization, W. H. (2001). The world health report 2001: Mental health: New understanding,

- new hope. Geneva: World Health Organization.
- Orpana, H., & Lemyre, L. (2004). Explaining the social gradient in health in Canada: Using the national population health survey to examine the role of stressors. *International Journal of Behavioral Medicine, 11*(3), 143-151.
- Ostrove, J. M., Adler, N. E., Kuppermann, M., & Washington, A. E. (2000). Objective and subjective assessments of socioeconomic status and their relationship to self-rated health in an ethnically diverse sample of pregnant women. *Health Psychology, 19*(6), 613-618.
- Ott, C. H. (2003). The impact of complicated grief on mental health and physical health at various points in the bereavement process. *Death Studies, 27*(3), 249 - 272.
- Pasternak, R. E., Reynolds, C. F., Houck, P. R., Schlernitzauer, M., Buysse, D. J., Hoch, C. C., & Kupfer, D. J. (1994). Brief Report: Sleep in Bereavement-Related Depression During and After Pharmacotherapy With Nortriptyline. *Journal of Geriatric Psychiatry and Neurology, 7*(2), 69-73.
- Pasternak, R. E., Reynolds, C. F., Houck, P. R., Schlernitzauer, M., Buysse, D. J., Hoch, C. C., & Kupfer, D. J. (1994). Brief Report: Sleep in Bereavement-Related Depression During and After Pharmacotherapy With Nortriptyline. *Journal of Geriatric Psychiatry and Neurology, 7*(2), 69-73.
- Pasternak, R. E., Reynolds, C. F., Schlernitzauer, M., & Hoch, C. C. (1991). Acute open-trial nortriptyline therapy of bereavement-related depression in late life. *Journal of Clinical Psychiatry, 52*(7), 307-310.
- Paykel, E. S., & Hollyman, J. A. (1984). Life events and depression -- a psychiatric view. *Trends in Neurosciences, 7*(12), 478-481.
- Pearlin, L. I. (1999). Stress Process Revisited. In C. S. Aneshensel & J. C. Phelan (Eds.),

- Handbook of the Sociology of Mental Health*. NY: Plenum Publishers.
- Pearlin, L. I., Menaghan, M. A., Lieberman, M. A., & Mullan, J. T. (1981). The Stress Process. *Journal of Health and Social Behavior*, 22(4), 337-356.
- Pearlin, L. I., & Schooler, C. (1978). The Structure of Coping. *Journal of Health and Social Behavior*, 19(2), 2-21.
- Pinquart, M., & Sörensen, S. (2003). Associations of stressors and uplifts of caregiving with caregiver burden and depressive mood: A meta-analysis. *Journals of Gerontology*, 58(2), 112-128.
- Pinquart, M., & Sörensen, S. (2007). Correlates of physical health of informal caregivers: A meta-analysis. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 62(2), 126-137.
- Piper, W. E., Ogradniczuk, J. S., Azim, H. F., & Weideman, R. (2001). Prevalence of loss and complicated grief among psychiatric outpatients. *Psychiatric Services*, 52(8), 1069-1074.
- Post, R. (1992). Transduction of psychosocial stress into the neurobiology of recurrent affective disorder. *American Journal of Psychiatry*, 149(8), 999-1010.
- Prause, J., Dooley, D., & Huh, J. (2009). Income Volatility and Psychological Depression. *American Journal of Community Psychology*, 43(1), 57-70.
- Prigerson, H., Bierhals, A., Kasl, S., Reynolds, C., 3rd, Shear, M., Day, N., . . . Jacobs, S. (1997). Traumatic grief as a risk factor for mental and physical morbidity. *American Journal of Psychiatry*, 154(5), 616-623.
- Prigerson, H., Bierhals, A., Kasl, S., Reynolds, C., 3rd, Shear, M., Newsom, J., & Jacobs, S. (1996). Complicated grief as a disorder distinct from bereavement-related depression and anxiety: a replication study. *American Journal of Psychiatry*, 153(11), 1484-1486.

- Prigerson, H., Frank, E., Kasl, S., Reynolds, C., 3rd, Anderson, B., Zubenko, G., . . . Kupfer, D. (1995). Complicated grief and bereavement-related depression as distinct disorders: preliminary empirical validation in elderly bereaved spouses. *The American Journal of Psychiatry*, *152*(1), 22-30.
- Prigerson, H., Shear, M., Jacobs, S., Reynolds, C., 3rd, Maciejewski, P., Davidson, J., . . . Zisook, S. (1999). Consensus criteria for traumatic grief. A preliminary empirical test. *The British Journal of Psychiatry*, *174*(1), 67-73.
- Prigerson, H. G., Ahmed, I., Silverman, G. K., Saxena, A. K., Maciejewski, P. K., Jacobs, S. C., . . . Hamirani, M. (2002). Rates and risks of complicated grief among psychiatric clinic patients in Karachi, Pakistan. *Death Studies*, *26*, 781-792.
- Prigerson, H. G., Cherlin, E., Chen, J. H., Kasl, S. V., Hurzeler, R., & Bradley, E. H. (2003). The Stressful Caregiving Adult Reactions to Experiences of Dying (SCARED) scale: A measure for assessing caregiver exposure to distress in terminal care. *American Journal of Geriatric Psychiatry*, *11*(3), 309-319.
- Prigerson, H. G., Horowitz, M. J., Jacobs, S. C., Parkes, C. M., Aslan, M., Goodkin, K., . . . Maciejewski, P. K. (2009). Prolonged grief disorder: psychometric validation of criteria proposed for DSM-V and ICD-11. *PLoS Medicine*, *6*(8), 1-11.
- Prigerson, H. G., & Jacobs, S. (2001). Traumatic grief a a distinct disorder: A rationale, consensus criteria, and a preliminary empirical test. In M. S. Stroebe, R. O. Hansson, H. A. Stroebe & W. Schut (Eds.), *Handbook of Bereavement Research: Consequences, Coping, and Care*. Washington DC: American Psychological Association.
- Prigerson, H. G., & Maciejewski, P. K. (2005). A call for sound empirical testing and evaluations of criteria for Complicated Grief proposed for DSM-V. *The Journal of Death*

and Dying, 52, 9-19.

- Prigerson, H. G., Maciejewski, P. K., Reynolds, C. F., Bierhals, A. J., Newsom, J. T., Fasiczka, A., . . . Miller, M. (1995). Inventory of complicated grief: A scale to measure maladaptive symptoms of loss. *Psychiatry Research*, 59(1-2), 65-79.
- Prigerson, H. G., Silverman, G. K., Jacobs, S. C., Maciejewski, P. K., Kasl, S. V., & Rosenheck, R. A. (2001). Traumatic grief, disability, and the underutilization of health services: A preliminary examination. *Primary Psychiatry*, 8(5), 61-66.
- Prigerson, H. G., Vanderwerker, L., & Maciejewski, P. K. (2008). A case for inclusion of prolonged grief in DSM-V. In M. S. Stroebe, R. O. Hansson, H. Schut & W. Stroebe (Eds.), *Handbook of bereavement, research, and practice* (pp. 165-186). Washington DC: American Psychological Association.
- Radloff, L. S. (1977). The CES-D scale: A self-reported depression scale for research in the general population. *Applied Psychological Measurement*, 1(3), 385-401.
- Reading, R., & Reynolds, S. (2001). Debt, social disadvantage and maternal depression. *Social Science & Medicine*, 53(4), 441-453.
- Reynolds, C. F., III, Miller, M. D., Pasternak, R. E., Frank, E., Perel, J. M., Cornes, C., . . . Kupfer, D. J. (1999). Treatment of bereavement-related Major Depressive Episodes in later life: A controlled study of acute and continuation treatment with nortriptyline and interpersonal psychotherapy. *The American Journal of Psychiatry*, 156(2), 202-208.
- Rodgers, B. (1991). Socio-economic status, employment and neurosis. *Social Psychiatry and Psychiatric Epidemiology*, 26(3), 104-114.
- Roth, D. L., Ackerman, M. L., Okonkwo, O. C., & Burgio, L. D. (2008). The four-factor model of depressive symptoms in dementia caregivers: A structural equation model of ethnic

- differences. *Psychology and Aging*, 23(3), 567-576.
- Safford, S. M., Alloy, L. B., Abramson, L. Y., & Crossfield, A. G. (2007). Negative cognitive style as a predictor of negative life events in depression-prone individuals: A test of the stress generation hypothesis. *Journal of affective disorders*, 99(1), 147-154.
- Schulz, R., Boerner, K., Shear, K., Zhang, S., & Gitlin, L. N. (2006). Predictors of complicated grief among dementia caregivers: A prospective study of bereavement. *American Journal of Geriatric Psychiatry*, 14(8), 650-658.
- Schulz, R., Burgio, L., Burns, R., Eisdorfer, C., Gallagher-Thompson, D., Gitlin, L. N., & Mahoney, D. F. (2003). Resources for Enhancing Alzheimer's Caregiver Health (REACH): Overview, site-specific outcomes, and future directions. *The Gerontologist*, 43(4), 514-520.
- Schulze, T. G., & McMahon, F. J. (2009). The genetic basis of bipolar disorder. In C. A. Zarate & H. K. Manji (Eds.), *Bipolar Depression: Molecular Neurobiology, Clinical Diagnosis and Pharmacotherapy* (pp. 59-76): Birkhäuser Basel.
- Selye, H. (1956). *The Stress of Life*. NY: McGraw-Hill.
- Shear, K., Frank, E., Houck, P. R., & Reynolds, C. F. (2005). Treatment of Complicated Grief. *JAMA: The Journal of the American Medical Association*, 293(21), 2601-2608.
- Shear, K., & Mulhare, E. (2008). Complicated grief. *Psychiatric Annals*, 38(10), 662-670.
- Shear, K., & Shair, H. (2005). Attachment, loss, and complicated grief. *Developmental Psychobiology*, 47(3), 253-267.
- Shear, K. M., Jackson, C. T., Essock, S. M., Donahue, S. A., & Felton, C. J. (2006). Screening for complicated grief among Project Liberty Service recipients 18 months after September 11, 2001. *Psychiatric Services*, 57(9), 1291-1297.

- Shear, M. K., Frank, E., Foa, E., Cherry, C., Reynolds, C. F., III, Vander Bilt, J., & Masters, S. (2001). Traumatic grief treatment: A pilot study. *The American Journal of Psychiatry*, *158*(9), 1506-1508.
- Shear, M. K., Simon, N., Wall, M., Zisook, S., Neimeyer, R., Duan, N., . . . Keshaviah, A. (2011). Complicated grief and related bereavement issues for DSM-5. *Depression and Anxiety*, *28*(2), 103-117.
- Siever, L. J., & Davis, K. L. (2004). The pathophysiology of schizophrenia disorders: Perspectives from the spectrum. *American Journal of Psychiatry*, *161*(3), 398-413.
- Silverman, G. K., Jacobs, S. C., Kasl, S. V., Shear, M. K., Maciejewski, P. K., Noaghiul, F. S., & Prigerson, H. G. (2000). Quality of life impairments associated with diagnostic criteria for traumatic grief. *Psychological Medicine*, *30*(04), 857-862. doi: doi:null
- Simon, N., Pollack, M. H., Fischmann, D., Perlman, C., Muriel, A. C., Moore, C. W., . . . Shear, K. M. (2005). Complicated grief and its correlates in patients with bipolar disorder. *Journal of Clinical Psychiatry*, *66*(9), 1105-1110.
- Simon, N. M., Shear, K. M., Thompson, E. H., Zalta, A. K., Perlman, C., Reynolds, C. F., . . . Silowash, R. (2007). The prevalence and correlates of psychiatric comorbidity in individuals with complicated grief. *Comprehensive psychiatry*, *48*(5), 395-399.
- Simon, N. M., Wall, M. M., Keshaviah, A., Dryman, M. T., LeBlanc, N. J., & Shear, M. K. (2011). Informing the symptom profile of complicated grief. *Depression and Anxiety*, *28*(2), 118-126.
- Skapinakis, P., Weich, S., Lewis, G., Singleton, N., & Araya, R. (2006). Socio-economic position and common mental disorders: Longitudinal study in the general population in the UK. *The British Journal of Psychiatry*, *189*(2), 109-117.

- Skinner, M. A., Zautra, A. J., & Reich, J. W. (2004). Financial Stress Predictors and the Emotional and Physical Health of Chronic Pain Patients. *Cognitive Therapy and Research*, 28(5), 695-713.
- Skinner, M. A., Zautra, A. J., & Reich, J. W. (2004). Financial stress predictors and the emotional and physical health of chronic pain patients. *Cognitive Therapy and Research*, 28(5), 695-713.
- Spring, B., & Coons, H. (1982). Stress as a precursor of schizophrenia. In R. Neufeld (Ed.), *Psychological stress and Psychopathology* (pp. 13-54).
- Stroebe, M., Schut, H., & Stroebe, W. (2007). Health outcomes of bereavement. *The Lancet*, 370(9603), 1960-1973.
- Stroebe, M. S., & Schut, H. (1999). The dual process model of coping with bereavement: Rationale and description. *Death Studies*, 23, 197-224.
- Stroebe, M. S., & Schut, H. (2005). Complicated grief: A conceptual analysis of the field. *Journal of Death and Dying*, 52(1), 53-70.
- Stroebe, M. S., Stroebe, W., & Hansson, R. O. (1993). *Handbook of Bereavement: theory, research, and intervention*. NY: Cambridge University Press.
- Subramanian, S. V., & Kawachi, I. (2007). Income Levels and Stress. In G. Fink (Ed.), *Stress Consequences: Mental, Neuropsychological and Socioeconomic* (pp. 598-602). NY: Wilsey.
- Sudak, H., Maxim, K., & Carpenter, M. (2008). Suicide and Stigma: A Review of the Literature and Personal Reflections. *Academic Psychiatry*, 32(2), 136-142.
- Sun, F., Hilgeman, M. M., Durkin, D. W., Allen, R. S., & Burgio, L. D. (2009). Perceived income inadequacy as a predictor of psychological distress in Alzheimer's caregivers.

- Psychology and Aging*, 24(1), 177-183.
- Sung, S. C., Dryman, M. T., Marks, E., Shear, K. M., Ghesquiere, A., Fava, M., & Simon, N. (2011). Complicated grief among individuals with major depression: Prevalence, comorbidity, and associated features. *Journal of Affective Disorders*, 134(1-3), 453-458.
- Swindle Jr, R. W., Cronkite, R. C., & Moos, R. H. (1989). Life stressors, social resources, coping, and the 4-Year course of unipolar depression. *Journal of Abnormal Psychology*, 98(4), 468-477.
- Szanto, K., Prigerson, H., Houck, P., Ehrenpreis, L., & Reynolds, C. F. (1997). Suicidal Ideation in Elderly Bereaved: The Role of Complicated Grief. *Suicide and Life-Threatening Behavior*, 27(2), 194-207. doi: 10.1111/j.1943-278X.1997.tb00291.x
- Szanto, K., Shear, K. M., Houck, P. R., Reynolds, C. F. r., Frank, E., Caroff, K., & Silowash, R. (2006). Indirect self-destructive behavior and overt suicidality in patients with complicated grief. *Journal of Clinical Psychiatry*, 67(2), 7.
- Tarlow, B. J., Wisniewski, S. R., Belle, S. H., Rubert, M., Ory, M. G., & Gallagher-Thompson, D. (2004). Positive aspects of caregiving. *Research on Aging*, 26(4), 429-453.
- Tarlow, B. J., Wisniewski, S. R., Belle, S. H., Rubert, M., Ory, M. G., & Gallagher-Thompson, D. (2004). Positive aspects of caregiving: Contributions of the REACH project to the development of the new measures for Alzheimer's caregiving. *Research on Aging*, 26(4), 429-453.
- Thomas, C., Benzeval, M., & Stansfeld, S. (2007). Psychological distress after employment transitions: the role of subjective financial position as a mediator. *Journal of Epidemiology and Community Health*, 61(1), 48-52.
- Tienari, P., Wynne, L. C., Laksy, K., Moring, J., Nieminen, P., Sorri, A., . . . Wahlberg, K.-E.

- (2003). Genetic boundaries of the schizophrenia spectrum: Evidence from the Finnish adoptive family study of schizophrenia. *American Journal of Psychiatry*, *160*(9), 1587-1594.
- Tomarken, A., Holland, J., Schachter, S., Vanderwerker, L., Zuckerman, E., Nelson, C., . . . Prigerson, H. (2008). Factors of complicated grief pre-death in caregivers of cancer patients. *Psycho-Oncology*, *17*(2), 105-111.
- Uchino, B. (2006). Social support and health: A review of physiological processes potentially underlying links to disease outcomes. *Journal of Behavioral Medicine*, *29*(4), 377-387.
- Umberson, D., Wortman, C., & Kessler, R. C. (1992). Widowhood and depression: Explaining long-term gender differences in vulnerability. *Journal of Health and Social Behavior*, *33*(1), 10-24.
- Utz, R. L. (2006). Economic and practical adjustments to late life spousal loss. In D. S. Carr, R. M. Nesse & C. Wortman (Eds.), *Spousal bereavement in late life* (pp. 167-192). NY: Springer Pub. Co.
- van den Houwen, K., Stroebe, M. S., Stroebe, W., Schut, H., van den Bout, J., & Wijngaards-De Meij, L. (2010). Risk factors for bereavement outcome: A multivariate approach. *Death Studies*, *34*(3), 195-220.
- Van Doorn, C., Kasl, S. V., Beery, L. C., Jacobs, S. C., & Prigerson, H. G. (1998). The Influence of marital quality and attachment styles on traumatic grief and depressive symptoms. *The Journal of Nervous and Mental Disease*, *186*(9), 566-573.
- Vanderwerker, L. C., Jacobs, S. C., Parkes, C. M., & Prigerson, H. G. (2006). An exploration of associations between separation anxiety in childhood and complicated grief in later life. *The Journal of Nervous and Mental Disease*, *194*(2), 121-123.

- Vellone, E., Piras, G., Talucci, C., & Cohen, M. Z. (2008). Quality of life for caregivers of people with Alzheimer's disease. *Journal of Advanced Nursing*, *61*(2), 222-231.
- Wagner, B., Keller, V., Knaevelsrud, C., & Maercker, A. (2011). Social acknowledgement as a predictor of post-traumatic stress and complicated grief after witnessing assisted suicide. *International Journal of Social Psychiatry*, *1*(1-5). doi: 10.1177/0020764011400791
- Waytt, G. K. (1999). A profile of bereaved caregivers following provision of terminal care. *Journal of Palliative Care*, *15*(1), 13-25.
- Weich, S., & Lewis, G. (1998). Material standard of living, social class, and the prevalence of the common mental disorders in Great Britain. *Journal of Epidemiology and Community Health*, *52*(1), 8-14.
- Wender, P. H., Kety, S. S., Rosenthal, D., Schulsinger, F., & et al. (1986). Psychiatric disorders in the biological and adoptive families of adopted individuals with affective disorders. *Archives of General Psychiatry*, *43*(10), 923-929.
- Wijngaards-de Meij, L., Stroebe, M., Schut, H., Stroebe, W., van den Bout, J., van der Heijden, P., & Dijkstra, I. (2005). Couples at risk following the death of their child: Predictors of grief versus depression. *Journal of Consulting and Clinical Psychology*, *73*(4), 617-623.
- Williamson, D. L. (2000). Health behaviors and health: Evidence that the relationship is not conditional on income adequacy. *Social Science & Medicine*, *51*, 1741-1754.
- Willner, P. (1984). The validity of animal models of depression. *Psychopharmacology*, *83*, 1-16.
- Wisniewski, S. R., Stephen, R., Belle, S. H., Coon, D. W., Marcus, S. M., Ory, M. G., . . . Schulz, R. (2003). The Resources for Enhancing Alzheimer's Caregiver Health (REACH): Project design and baseline characteristics. *Psychology and Aging*, *18*(3), 375-384.
- Wong, Y.-L. I. (2000). Measurement properties of the Center for Epidemiologic Studies--

- Depression Scale in a homeless population. *Psychological Assessment*, 12(1), 69-76.
- Woodhandler, S., & Himmelstein, D. U. (2004). National health insurance: Falling expectations and the safety net. *Medical Care*, 42(5), 403-405.
- Zick, C. D., & Smith, K. R. (1991). Patterns of economic change surrounding the death of a spouse. *Journal of Gerontology*, 46(6), S310-320.