UU IR Author Manuscript

Grief, Depressive-Symptoms, and Physical Health Among Recently Bereaved Spouses

Rebecca L. Utz, PhD
Department of Sociology & Center on Aging, University of Utah, Salt Lake City UT
rebecca.utz@utah.edu
    Mail: 380 S 1530 E, SLC UT 84112-0250
    Phone: 801-699-5685
    Fax: 801-581-3784

Michael Caserta, PhD
Gerontology Interdisciplinary Program & Center on Aging, University of Utah, Salt Lake City UT
michael.caserta@nurs.utah.edu

Dale Lund, PhD
Department of Sociology, California State University San Bernardino, San Bernardino CA
dlund@csusb.edu

UU IR Author Manuscript

ABSTRACT

Purpose of Study: Widowhood is among the most distressing of all life events, resulting in both mental and physical health declines. This paper explores the dynamic relationship between physical health and psychological well-being among recently bereaved spouses.

Design and Method: Using a sample of 328 bereaved persons who participated in the *Living After Loss* study, we modeled trends in physical health, somatic symptoms, and psychological well-being over the first year and a half of widowhood. The primary focus is whether physical health at the time of widowhood modifies psychological well-being over time.

Results: There were considerable somatic symptoms during the earliest months of bereavement, but no major health declines over the first year and half of bereavement. Those in poor health had initially higher levels of grief and depressive symptoms, but the trajectories or changes over time were similar regardless of health status. Those with poor health at the time of widowhood had significantly higher risks of complicated grief and major depression disorder.

Implications: Bereavement requires physical and emotional adjustment, but the psychological trajectory of bereavement may be somewhat universal. Bereavement support ought to include a focus on self-care and health promotion in addition to emotional support, especially since those with poor health initially may be most susceptible to prolonged and intense clinical distress.

The death of a spouse is one of the most common, yet most distressing, transitions faced by older persons (Holmes & Rahe, 1967). Surviving spouses commonly experience changes in psychological well-being, evidenced by the increased prevalence of grief and depression following widowhood (Stroebe, Hansson, & Schut, 2008). Grief is an emotional response specific to the loss of an intimate partner, whereas depression is a more global measure of negative affect and symptomology (Bonanno & Kaltman, 2001; Jacobsen, Zhang, Block, Maciejewski, & Prigerson, 2010). Although most widowed persons show resiliency over time (Bonanno, Wortman, & Nesse, 2004), some widowed persons sustain intense and prolonged emotional responses that they may be diagnosed with major depression or complicated grief disorders (Lichtenthal, Cruess, & Prigerson, 2004). In addition to intense feelings of emotional distress (both normal and pathological), bereaved persons often report physical pain and ailments such as fatigue, heart palpitations, and backaches (Stroebe, Schut, & Stroebe, 2007). These somatic responses rarely signify an underlying physical malady and may be considered symptomatic of typical grief experiences (Worden, 2009), just as the presence of grief and depressive symptoms are considered normal responses to widowhood (Bonanno et al., 2004).

One of the reasons why widowhood represents such a potent life stressor is because it requires the surviving spouse to manage both the emotional loss associated with the death of an intimate partner, as well as the shattering of one's behavioral, social, and economic environments that were once shared by the married couple (Carr & Utz, 2001; Donnelly & Hinterlong, 2010; Ha, 2010; Stroebe & Schut, 2010; Utz, Carr, Nesse, Wortman, 2002). Managing these two disparate stressors has the potential to suppress one's immune system (Gerra et al., 2003), which then may decreases overall health and increases mortality risk

(Stroebe et al., 2007). A recent meta-analysis reported that widowed persons have an 11% higher risk for mortality when compared to married persons (Manzoli, Villari, Pirone, & Boccia, 2007).

Extant literature has documented the health benefits associated with marriage (Waite & Gallagher, 2000), as well as the health detriments associated with marital dissolution (Williams & Umberson, 2004). Another body of literature has outlined the pervasive effect that stressful life transitions can have on subsequent morbidity, mortality, and psychological well-being (Miller, 2010). Still, another body of literature has identified potential risk factors for the most severe psychological reactions that sometimes accompany widowhood (Lichtenthal et al., 2004; Lobb et al., 2010). However, much less research has explored how physical health might affect older adults' ability to adapt to the stresses of widowhood (Telonidis, Lund, Caserta, Guralnick, & Pennington, 2005). Do frail or ill persons experience bereavement in the same way as healthy, robust individuals? Are some individuals more susceptible to health declines at the time of widowhood, and thus more susceptible to prolonged or heightened bereavement experiences?

Given the strong theoretical and empirical correlation between physical and mental health (Edwards & Cooper, 1988), especially during times of high life stress (Aneshensel, 1992), this analysis explores the dynamics between physical health and psychological well-being among recently bereaved spouses or partners. Past research has suggested that those in poor health may be more susceptible to the intense clinical outcomes such as prolonged or complicated grief disorders (Horowitz et al., 1998), while those with the most intense grief experiences have elevated risks of morbidity and mortality (Ott, 2003; Prigerson, Shear, Frank, & Beery, 1997). Very little research has focused on how physical health, as both a static and

4

dynamic characteristic of the widow(er), may alter one's bereavement experience. The results that do exist are largely based on small clinical samples or anecdotal evidence from practitioners working with bereaved persons.

This study utilized a community-based sample of older widowed persons to explore the complex relationships between physical health and psychological well-being from approximately 2 to 18 months post-loss, the time period that captures the most intense health-related changes associated with widowhood (Lund, Caserta, & Dimond, 1993). The specific research objectives include:

Aim 1: To explore how "health" changes during the first year and a half of widowhood.

Aim 2: To explore how a) physical health at the time of widowhood and b) changes in physical health that accompany widowhood modify the individual trajectory of grief and depressive symptoms over time.

Aim 3: To explore whether physical health might be a risk factor for clinical outcomes major depression and/or complicated grief.

The first set of analyses, Aim 1, provides a descriptive background of how physical health changes over the first year and a half of bereavement. The primary objective is to illustrate the natural or typical responses to spousal loss. Aim 2 explores whether physical health might modify the common fluctuations in psychological distress over time, whereas Aim 3 explores whether physical health might be a characteristic to help identify those persons who are most at-risk for the prolonged and intense clinical outcomes following spousal bereavement.

METHOD

Data come from *Living After Loss* (LAL), a longitudinal study of older bereaved spouses/partners. Participants completed questionnaires at approximately three (baseline), six,

nine, and fifteen months after the spouse's death. All data were collected between February 2005 and June 2009. In between the three- and six-month data collections, participants completed one of two interventions, each consisting of a 14-week facilitator-led support group (Lund, Caserta, Utz, & de Vries, 2010). The first was a traditional support group focusing exclusively on the emotional needs of the bereaved persons. The second was theoretically based on the "dual process model of coping" (Stroebe & Schut, 2010), which states that bereaved persons should oscillate between loss-oriented and restoration-oriented tasks; this support group included traditional facilitator-led discussions about loss and grief, as well as guest speakers who provided information and training that might help the bereaved readjust their daily life (for instance, household repairs, nutrition, finances, home safety). Participants were randomly assigned to one of the two intervention conditions.

<u>Sample</u>

The LAL sample included 328 persons who were over the age of 50 and whose spouse/partner had died two to six months (M=3.6) prior to completing the baseline questionnaire. Participants were initially identified from vital statistic records maintained by two cities/counties in the western United States (Caserta, Utz, Lund, & de Vries, 2010). A software-based random number generator was then used to select a stratified random sample of potentially eligible widows and widowers. Female deaths were oversampled to ensure enough widowers in the analytic sample.   Traumatic or violent deaths (e.g., suicides, homicides, automobile accidents) were excluded because these deaths often elicit unique bereavement experiences that cannot be adequately addressed in a group-based intervention (Mitchell, Kim, Prigerson, & Mortimer-Stephens, 2004).

A little less than half of the eligible sample agreed to participate in the study, resulting in a sample size of 328. Although the LAL study is based on a random sample of death records, participants likely represent a unique population of persons who were willing to participate in a 14-week support group research, as well as complete the research aspect of the LAL study. It is estimated that anywhere from 10 to 42% of widowed persons receive support from an organized group or therapist during the early period of widowhood (Caserta et al., 2010; Levy & Derby, 1992). Of the 328 participants, 84% (n=274) completed all four questionnaires, and more than 90% (n=298) completed questionnaires for at least two time points. Exploratory analyses found that missing data, due to non-response and attrition, was random for all variables used in this analysis.

Measures

Physical Health was assessed during each of the four surveys to provide a longitudinal profile of physical health. First, we used a single-item self-report measure of global health, ranging from 1 "poor health" to 7 "excellent health". This type of variable is commonly used in survey-based research and is considered an ideal measure of physical health because it captures a subjective or qualitative dimension of one's perceived health, in addition to objective health diagnoses (Ferraro & Farmer, 1999). For a less subjective measure of physical health that may be less tied to one's psychological well-being at the time of questionnaire completion, respondents also completed a symptom checklist at each of the four time points, indicating which types of common health symptoms they experienced over the past month. The checklist contained 19 separate symptoms, from which a single-item summary score was calculated, ranging from 0 (no symptoms present) to 19 (all symptoms present). The Pearson correlation between self-reported health and the symptom count was -0.45 at baseline ($p<.001$).

7

The ability to measure physical health in terms of both objective symptoms and subjective appraisals is a unique strength of the analyses.

Psychological Well-Being was also measured by two conceptually distinct constructs: g*rief* and *depressive symptoms* (Bonanno & Kaltman, 2001; Jacobsen et al., 2010). Grief was assessed by the "Present Feelings" subscale of the Texas Revised Inventory of Grief (TRIG) (Faschingbauer, Zisook, & DeVaul, 1987), while depressive symptoms were measured using the short-form of the Geriatric Depression Scale (GDS) (Sheikh & Yesavage, 1986). Both scales were used to identify changes in symptoms throughout the first year and a half of bereavement, as well as an individual's risk for clinical diagnoses of major depression and complicated grief.

The Geriatric Depression Scale (GDS) includes 15 items measuring the presence or absence of depressive symptoms (e.g., general satisfaction with life, feelings of happiness and helplessness). Scores range from 0 to 15, with higher values indicating greater depressive symptoms. The internal consistency was quite high in the LAL baseline sample (α=.84). GDS is an ideal measure because, unlike other commonly used depression indices like the CES-D (Radloff, 1977), it was designed explicitly for an old-age population and does not include somatic symptoms such as loss of appetite and sleep disturbances which may be confounded with our measures of physical health. Furthermore, previous research has validated cut-points on the GDS that can be used to approximate the risk for clinical depression: a score greater than or equal to five is suggestive of a major depressive episode, while scores above 10 coincide with clinical diagnoses of major depression (Poon & APA., 1986). At approximately 15-months post-loss, 6% of the LAL sample had GDS scores indicating that they had probable diagnosis of major depression disorder; 18% had scores indicating a likely depressive episode.

8

The TRIG is among the most widely used measures of grief (Neimeyer & Hogan, 2001). Based on a 5-item Likert response, participants assessed the presence and severity of 13 grief-related symptoms (e.g., I still cry when I think of my spouse, I cannot avoid thinking about my spouse). Responses were summed, with scores ranging from 13 (low grief) to 65 (high grief). The TRIG, as calculated with the LAL baseline sample, has high internal consistency (α=.90). The TRIG has been commonly used in research to identify persons at risk of complicated grief (CG) (Lobb et al., 2010). Conceptually, CG has been defined by the presence of intense grief reactions that extend past six (Prigerson et al., 1999) or 14 months post-loss (Horowitz et al., 1997). Horowitz and colleagues (1997) proposed using a crude median split of TRIG scores at 14 months to identify possible cases of CG (in their clinical sample of n=70, median=41), but specificity analyses found a nearly 25% false-positive diagnostic rate. Thus, we applied a slightly more stringent cut-point for the purposes of this analysis. Persons who had scores at the fourth data collection (approximately 15 months post-death) that were above the median score associated with the baseline assessment (Median=44) were identified as having possible or probable CG. This represents 23% of the LAL baseline sample.

All multivariate analyses control for demographic characteristics including, *gender*, *age* (in years), *race* (white, non-white), *education* (some college or less, college degree or more), and perceived *financial adequacy* (not very good, comfortable, more than adequate). Analyses also control for features of the LAL study design, including where the participant lived (two western cities/counties) and in which of the two intervention conditions s/he participated. The five demographic factors are correlated with both physical health and psychological well-being and thus ought to be controlled to avoid issues of confounding (Carr, 2006). The latter two

9

methodological variables were not expected to affect any of the health-related outcomes (nor did they), but their inclusion allowed us to explore whether the methodological design of LAL may have had an impact on the relationships explored.

Prolonged distress or complicated grief reactions are thought to be influenced by a host of additional risk factors (Lichtenthal et al., 2004; Lobb et al., 2010). To measure the nature of the pre-death marital relationship, we included *marital happiness*, a single-item Likert scale measuring the spouse's assessment of their marital quality, ranging from 1 "very unhappy" to 7 "perfectly happy." To measure the nature of the death and dying process, we included a dummy variable called *expectedness of death* (0=not expected; 1=expected), which was the widow(er)s' perception of whether they expected the death or not. To measure the amount of interpersonal support received after the death, we included two dummy variables measuring whether the respondent was satisfied with *support from family* and *support from friends*. Cognitive appraisal of the bereavement experience, as well as personality and attachment styles may be further predictors of psychological well-being after the loss (Neimeyer, Burke, MacKay, & Stringer, 2010), but such variables were not available in the LAL study.

<u>Analytic Plan</u>

For Aim 1, we documented changes in self-reported physical health, total number of physical symptoms, and a host of individual health symptoms, characterizing both the significance and direction of change during the first 18 months of bereavement. To minimize the risk of committing a type 1 error, given the large number of variables assessed in this analysis (n=23; refer to Table 1), we imposed the Bonferroni correction to determine statistical significance when interpreting these results (p<.002). Analyses were performed in SPSS 16.0 and STATA 12MP.

For Aim 2, we used multivariate growth modeling to estimate the longitudinal changes in grief and depressive symptoms, while controlling for socio-demographic covariates that may confound the relationship. Growth curve analyses use "full information maximum likelihood" to model parameter estimates, meaning that we utilized the full LAL sample (n=328) despite missing data from attrition or non-response. The LAL sample had less than 3% missing data on any given variable, and less than 15% attrition over the course of the 18-month panel. Growth curve analyses are ideal to analyze trajectories because they allow for variation in timing of repeated measures. Although LAL participants completed questionnaires at fairly regular intervals (e.g., before intervention, immediately following intervention, 3 months after intervention, and 6 months after intervention), the participants' entry into the study was variable (Range: 2 to 6 months post-loss, M = 3.6). All growth models control for the precise timing of each data collection, rather than imposing the idealized or average time-points associated with the study design.

The generalized equation for a growth model is (Raudenbush & Bryk, 2002):

$$Y_{ti} = \pi_{0i} + \pi_{1i}(a) + e_{ti} \tag{1}$$

where the outcome, Y_{ti}, represents the observed psychological well-being at time t for individual i. The intercept, π_{0i}, represents the psychological well-being of person i at time 0 (widowhood). The slope, π_{1i}, represents the growth rate or the expected change in psychological well-being over a given unit of time (a) for person i. The error term, e_{ti}, is random variation in individual growth trajectories. It is assumed that both the slope (π_{1i}) and the intercept (π_{0i}) may vary across individuals, thus, a series of person-level equations are simultaneously estimated to account for this variation:

$$\pi_{0i} = \beta_{00} + \beta_{01}X_i + r_{0i} \tag{2}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}X_i + r_{1i} \qquad\qquad [3]$$

X_i represents measured characteristics of the individual (i.e., physical health status and control variables), whereas β_{01} and β_{11} represent the effects of X_i on individual growth parameters, and r_i represents random effects unaccounted for by model specifications. For purposes of this analysis, we were most interested in whether one's physical health (X_i) impacts either the intercept (π_{0i}) or the slope (π_{1i}) of psychological well-being over time. We modeled slope (π_{1i}) as a quadratic function, given a priori theoretical assumptions that bereavement is not a linear process, but instead a long-term process in which recovery occurs more rapidly at first and then subsides over time as one begins to reach their "baseline" or new-normal levels of the outcome being assessed. All models were estimated in SAS using the "PROC MIXED" commands. All models were estimated using an autoregressive (1) covariance structure, which assumes that measures have homogenous variances over time, and that measures further apart have lower correlations than those that were measured closer together.

For Aim 3, we estimated a series of multivariate regression models that explored whether the risk of clinical diagnoses could be predicted from the widowed persons' physical health at baseline. Like the growth curve analyses, these models control for the precise timing of baseline measurements (2-6 months post-loss, M=3.6). These analyses are based on a subsample of 275 persons who returned the final questionnaire and who had complete data for all covariates measured at baseline (84% of original sample). All models were estimated in SPSS 16.0. All control for the full set of demographic, methodological, and risk factor covariates.

RESULTS

As shown in Table 1, self-reported physical health did not significantly change over-time among bereaved older adults, while the total number of physical health symptoms declined, from an average of 4.5 symptoms to less than 3 symptoms (out of 19), over the first year and a half of bereavement. Participants most commonly reported sleep disturbances (63%), general fatigue (54%), problems concentrating (53%), and loss of appetite (43%). Some symptoms such as joint pain and urinary problems increased in prevalence over time (from 33% to 43% & from 14% to 22%, $p \leq .002$); likely attributable to the exacerbation of age-prevalent conditions. Other symptoms decreased over time. For example, sleep disturbances decreased from 63% to 45% ($p \leq .002$), and fatigue decreased from 54% to 39% ($p \leq .002$); these changes likely represent a decrease in the somatic manifestations of grief (de Vries, Davis, Wortman, & Lehman, 1997). The most significant changes occurred between three and six months post-loss, affirming our a priori theoretical assumption that the physical symptoms of bereavement may dissipate over time after an initial period of heightened prevalence. Similar to the indicators of physical health, grief and depressive symptoms also followed a decelerating trend over time.

[Table 1 here]

As expected, the bivariate correlation matrix between grief, depressive symptoms, and the two measures of physical health (not shown) produced a number of significant correlations. The Pearson Correlation values ranged from .11 to .47 ($p \leq .05$), suggesting generally that those with better self-reported health or fewer physical health symptoms had significantly lower scores on grief and depression related indices. However, differences across the matrix suggested that depressive symptoms may be more highly correlated with physical health than grief is, while the correlation values between grief and physical health were much lower during

13

the later months of bereavement compared to the earlier months of bereavement. These variations over time and across measurements suggest that a more nuanced longitudinal analysis is required to understand the dynamics of physical health and psychological well-being following the loss of spouse.

Next, a series of growth models explored whether the two measures of physical health predicted longitudinal changes in grief (as shown in Table 2) or depressive symptoms (as shown in Table 3). Each table presents two models: Model 1 included a single time-invariant measure of physical health assessed at baseline, approximately 3 months post-death. Model 2 included a time-varying measure of physical health at each of the four time points, approximately 3, 6, 9, and 15 months post-death. All models measured time precisely for each individual based on when they enrolled in the study (2 to 6 months post-loss, M=3.6).

[Table 2 & Table 3 here]

Across Tables 2 and 3, level-1 coefficients (π_0, π_1) reveal the shape of the trajectory measuring grief and depressive symptoms over time. Given a priori theoretical assumptions and earlier empirical findings suggesting that the greatest improvement in psychological well-being occurs early in bereavement and decelerates over time, all models were estimated with a quadratic function for slope (π_1). Significant intercept estimates (π_0) suggest that individuals start their trajectories at very different baseline levels of grief and depressive symptoms. Level-2 coefficients (β_0, β_1) show whether one's individual-level characteristics (e.g., physical health) modifies either the intercept or slope of the grief and depressive symptom trajectories. In general, physical health significantly predicted differences in intercept (β_0), but not slope (β_1). Negative intercepts indicate that those with better physical health assessments had lower initial levels of grief ($\beta_{0\ model\ 1}$= -1.36; $\beta_{0\ model\ 2}$ = -0.51) and depressive symptoms ($\beta_{0\ model\ 1}$= -

14

1.07; $\beta_{0\ model\ 2}$= -0.56). The larger effects sizes for the time-invariant models compared to the time-varying models for both grief ($\beta_{1\ model\ 1}$ = -1.36 > $\beta_{1\ model\ 2}$ = -0.51) and depressive symptoms ($\beta_{1\ model\ 1}$ = -1.07 > $\beta_{1\ model\ 2}$ = -0.56) suggest that the relationship between physical health and psychological well-being may be strongest during the earliest months of bereavement, and that baseline health may be the more powerful predictor of one's trajectory over time. Finally, non-significant slope estimates (β_1) suggest that the longitudinal trajectories did not differ by one's physical health status.

As shown in Figure 1, those with good self-reported health at baseline had fewer grief symptoms at all time points than those with poor self-reported health. On the other hand, the slopes of these plotted trajectories followed a similar parallel path, regardless of one's physical health status. The other estimated models (e.g., using symptom count as the independent variable, time-varying indicators of physical health, or depressive symptoms as the dependent variable) produced very similar patterns of parallel trajectories stratified by physical health status.

[Figure 1 here]

Finally, we explored whether one's physical health was associated with an increased risk for clinical diagnoses, as measured at 15-months post-death. As shown in Tables 4 and 5, self-reported physical health at baseline (or approximately 3-months after the loss) was a significant predictor of clinical diagnoses. These effects were only slightly mediated when known risk factors were included in the model. For example, self-reported physical health was a significant predictor of one's risk for complicated grief (OR = 0.76), probable depressive episode (OR = 0.72), and major depression disorder (OR=0.47). Models using a count of physical health symptoms as opposed to the self-reported health variables (not shown) revealed

15

nearly identical findings: For each additional physical health symptom at baseline, the odds for major depression increased by 1.27 (*p*=0.02); the odds for complicated grief increased by a factor of 1.14 (*p*=0.02).

[Table 4 & Table 5 here]

All of the multivariate models presented in Tables 2-5 controlled for socio-demographic characteristics (i.e., sex, age, race, education, financial adequacy) that might confound the relationship between physical health and psychological well-being. The models predicting probable clinical diagnoses (Tables 4-5) also controlled for known risk factors of prolonged grief disorders such as marital quality, expectedness of the death, and social support received after widowhood. Although a few subgroup differences emerged – such as nonwhites having a steeper slope than whites, and persons with lower perceived financial adequacy having greater initial and prolonged levels of psychological distress – the most notable finding is that physical health was the most consistent and statistically significant predictor of psychological well-being across all models specified. Preliminary exploration of higher-order interactions such as, do those with both poor health <u>and</u> poor financial circumstances have different psychological profiles following the loss? Or, can positive social support buffer the effect of poor health on psychological well being? did not bear any statistically significant findings. However, it is likely that the relatively small sample size of the LAL study did not have enough statistical power to identify these higher-order subgroup differences. This may be an area of exploration for future research.

DISCUSSION

This analysis is not a comparison of health status among married and unmarried persons (Manzoli et al., 2007), nor is it an exploration of how physical health or psychological

well-being changes as a result of widowhood (Bonanno & Kaltman, 2001; Pienta & Franks, 2006; Margaret Stroebe et al., 2007). It is, instead, an exploration of the dynamic relationship between physical health and psychological well-being among older adults experiencing widowhood, an event considered one of the most distressing of all life transitions (Carr & Utz, 2001). There currently exists a large body of research exploring the protective effects of marriage on health (Waite & Gallagher, 2000), and additional research exploring the negative effects of marital dissolution on health (Williams & Umberson, 2004). Very little research, to date, has shown whether health at the time of marital dissolution or health-related changes that accompany this stressful transition might alter the widowed person's psychological well-being over time. As such, our analyses indicate how older adults physically and psychologically adapt to this stressful life transitions, and how their physical health may improve or inhibit resilience after such a devastating and disruptive loss.

First, although we found little change in the self-reported health status among widowed persons over the first year and a half of bereavement, these analyses reaffirmed that a stressful life transition such as widowhood can elicit very real physical symptoms (de Vries et al., 1997). More than half of recently widowed persons reported sleep disturbances, fatigue, concentration problems, and loss of appetite, but the presence of these symptoms decreased over the first year and a half of bereavement. Symptoms such as rapid heartbeat and chest pain were less commonly reported, but also exhibited marked declines over time. Within the primary care setting, such symptoms ought to be viewed in light of one's changing marital context, but should not be dismissed altogether as somatic expressions of grief as they may indicate underlying health problems.

17

As expected, poor physical health was associated with greater levels of grief and depressive symptoms. Simple bivariate correlations, however, cannot discern causation. Does poor health cause higher levels of grief? Or does poor psychological well-being cause worse physical health? Given relatively few health declines and even fewer deaths among the LAL sample, this analysis was not able to examine how grief and/or depressive symptoms might affect subsequent health outcomes of widowed persons, but that can be explored in future analyses with different datasets and has been the focus of much of the existing research on this topic (Stroebe et al., 2007). On the other hand, the major contribution of this analysis is its ability to explore whether physical health might modify one's subsequent mental health trajectory after widowhood. In this regard, we found that widowed persons followed a similar decelerating trajectory of grief and depressive symptoms over time, regardless of whether they reported good or bad health after widowhood and regardless of whether their physical health declined or improved over the course of bereavement. These results suggest a somewhat universal or at least widely shared bereavement experience that follows a pattern dictated by time, rather than one that might be predicted by an individual's physical capacity at the time of the loss.

Although widowed persons typically followed the same trend of fewer grief and depressive symptoms over time, those with the lowest levels of self-reported health or the highest number of symptoms consistently reported the highest levels of grief and depressive symptoms throughout the first year and a half of widowhood. Similarly, those with below-average health had significantly higher risks of prolonged clinical diagnoses such as major depression and complicated grief at 15-18 months post-loss. These findings suggest that while physical health may not modify the typical fluctuations in grief and depressive symptoms

18

following widowhood, physical health may be an important risk factor to help identify persons most likely to experience heightened or prolonged reactions. It is assumed that those with lower physical capacities may not be able to juggle the competing demands required by bereavement, which may heighten their risk for grief and depressive symptoms. For example, someone who has poor physical health may not be able to fulfill the tasks of daily life that their spouse once did (like pay the bills, cook dinner, maintain the house or yard); the inability to do these types of tasks may lead to greater levels of stress which may cyclically affect both physical health and psychological well-being following widowhood.

This analysis affords such a nuanced understanding of bereavement related outcomes because it utilized four separate measures of psychological well-being – longitudinal trends in both grief (1) and depressive symptoms (2), as well as probable diagnoses of both major depression (3) and complicated grief (4). The first two outcomes allowed us to model the natural or common fluctuations in psychological well-being that accompany widowhood, whereas the latter two allowed us to identify a small subset of individuals who had the most severe and lasting psychological distress following widowhood. Although measures of grief, depression, and the clinical diagnoses of each are conceptually distinct (Stroebe et al., 2000) , our analyses found that all of them are predicted by a similar set of risk factors, with perhaps the most robust predictor being one's physical health.

<u>Practice Considerations</u>

Greater physical symptoms following widowhood could lead to increased health care utilization among recently widowed, but the somatization of bereavement may not be adequately addressed through existing medical care systems. Bereavement support should include interventions aimed at addressing both the physical and psychological changes that

accompany widowhood. Health care professionals should, at a minimum, consider one's marital status, especially if there have been recent changes, when interpreting physical symptoms so as to not over- or under-diagnose underlying physical ailments. For symptoms without a clear pathological cause, primary care physicians might refer recently bereaved patients to social workers or counselors who can help address symptoms that may be stemming from the psychological distress associated with this stressful life transition. Mental health providers may consider including topics related to self-care and health promotion rather than focusing only on the clients' emotional needs. Since our analyses found such a consistent relationship between physical health at the time of widowhood and the severity of psychological symptoms following widowhood, mental health providers may also consider assessing one's health status at the time of widowhood – perhaps with the single-item self-reported global health question as is commonly used in survey research (Ferraro & Farmer, 1999) – as a way to identify the persons most at-risk.

A general model of psychosomatics assumes that talking about one's grief, rather than internalizing it or holding it in, is good for one's physical health (Lewis & Lewis, 1972). Using similar logic, addressing one's physical health through better self-care practices might allow one to better adjust to the emotional loss and sadness associated with the death of a spouse (Brown & Smith, 2009; Worden, 2009). In support of this logic, we found that those who reported poorer physical health at the time of widowhood had the highest risk for major depression and complicated grief. Thus, in order to reduce costs associated with prolonged clinical care, early interventions emphasizing self-care practices could be targeted to those exhibiting poorer physical health at the time of widowhood. In cases where the death is expected, such efforts could begin prior to the death event. This would be particularly

applicable for those enrolled in hospice or engaged in significant spousal caregiving roles. Rather than simply focusing on the dying patient, hospice and home health providers could direct some attention to the surviving spouse, helping them to assess and enhance their own physical health (Empeno et al., 2011). Caregivers who sacrifice personal health to meet the needs of the dying have been found to have greater distress and social isolation following the death (Burton, Haley, & Small, 2006). In short, pre-bereavement and early post-bereavement interventions that enhance the widow(er)'s physical health might be effective in reducing the clinical complications associated with this stressful life transition.

Of course, no two individuals will experience widowhood in the same way (Bonanno & Kaltman, 2001; Carr & Utz, 2001), so none of the proposed interventions will be universally effective. Future research should explore whether there are particular subgroups of widowed persons for whom the relationship between physical health and psychological well-being is not as highly correlated. Uncovering additional individual-level characteristics that might modify the trajectories of physical health and psychological well-being will allow us to develop and target interventions to older adults facing this common, yet highly distressing, life transition.

REFERENCES

Aneshensel, C. S. (1992). Social Stress: Theory and Research. *Annual Review of Sociology, 18*(1), 15-38. doi: 10.1145/annurev.soc.18.1.15

Bonanno, G. A., & Kaltman, S. (2001). The varieties of grief experience. *Clinical Psychology Review, 21*(5), 705-734. doi: Doi: 10.1016/s0272-7358(00)00062-3

Bonanno, G. A., Wortman, C. B., & Nesse, R. M. (2004). Prospective Patterns of Resilience and Maladjustment During Widowhood. [Article]. *Psychology & Aging, 19*(2), 260-270. doi: 10.1037/0882-7974.19.2.260

Brown, S., & Smith, E. (2009). Can a brief health promotion intervention delivered by mental health key workers improve clients' physical health: A randomized controlled trial. *Journal of Mental Health, 18*(5), 372-378. doi: 10.3109/09638230802522460

Burton, A. M., Haley, W. E., & Small, B. J. (2006). Bereavement after caregiving or unexpected death: Effects on elderly spouses. [Article]. *Aging & Mental Health, 10*(3), 319-326. doi: 10.1080/13607860500410045

Carr, D. (2006). Methodological Issues in Studying Late Life Bereavement. In D. Carr, R. Nesse & C. Wortman (Eds.), *Spousal Bereavement in Late Life* (pp. 19-48). New York: Springer Publishing Company.

Carr, D., & Utz, R. (2001). Late-Life Widowhood in the United States: New Directions in Research and Theory. *Ageing International, 27*(1), 65. doi: 10.1007/s12126-001-1016-3

Caserta, M., Utz, R., Lund, D., & de Vries, B. (2010). Sampling, Recruitment, and Retention in a Bereavement Intervention Study: Experiences from the Living After Loss Project. *Omega: Journal of Death & Dying, 61*(3), 181-203. doi: 10.2190/OM.61.3.b

de Vries, B., Davis, C., Wortman, C., & Lehman, D. (1997). The long term psychological and somatic consequences of later life parental bereavement. *Omega: Journal of Death and Dying, 35*, 97.

Donnelly, E & Hinterlong, J. (2010). Changes in social participation and volunteer activity among recently widowed older adult. *The Gerontologist, 50* (2), 158-169. doi:10.1093/geront/gnp103

Edwards, J. R., & Cooper, C. L. (1988). The impacts of positive psychological states on physical health: A review and theoretical framework. *Social Science & Medicine, 27*(12), 1447-1459. doi: 10.1016/0277-9536(88)90212-2

Empeno, J., Raming, N., Raming, B. S., Irwin, S. A., Nelesen, R., & Lloyd, L. S. (2011). The Hospice Caregiver Support Project: Providing Support to Reduce Caregiver Stress. *Journal of Palliative Medicine, 14*(5), 593-597. doi: 10.1089/jpm.2010.0520

Faschingbauer, T. R., Zisook, S., & DeVaul, R. (1987). Biopsychosocial aspects of bereavement. In S. Zisook (Ed.), *The Texas revised inventory of grief* (p. 111). Washington, DC: American Psychiatric Press Inc.

Ferraro, K. F., & Farmer, M. M. (1999). utility of health data from social surveys: is there a gold standard for measuring morbidity? *American Sociological Review, 64*(2), 303. doi: 10.2307/2657534

Gerra, G., Monti, D., Panerai, A. E., Sacerdote, P., Anderlini, R., Avanzini, P., . . . Franceschi, C. (2003). Long-term immune-endocrine effects of bereavement: relationships with anxiety levels and mood. *Psychiatry Research, 121*(2), 145. doi: 10.1016/s0165-1781(03)00255-5

Ha, J. H. (2010). Effects of positive and negative support from children on widowed older adults. The Gerontologist, 50 (4), 471-481. doi: 10.1093/geront/gnp163

Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11*(2), 213-218. doi: 10.1016/0022-3999(67)90010-4

Horowitz, M., Milbrath, C., Bonanno, G. A., Field, N., Stinson, C., & Holen, A. (1998). Predictors of complicated grief. *Journal of Loss and Trauma, 3*(3), 257-269. doi: 10.1080/10811449808409703

Horowitz, M. J., Siegel, B., Holen, A., Bonanno, G. A., Milbrath, C., & Stinson, C. H. (1997). Diagnostic criteria for complicated grief disorder. *American Journal of Psychiatry, 154*, 904.

Jacobsen, J. C., Zhang, B., Block, S. D., Maciejewski, P. K., & Prigerson, H. G. (2010). Distinguishing symptoms of grief and depression in a cohort of advanced cancer patients. *Death Studies, 34*(3), 257-273.

Levy, L., & Derby, J. (1992). Bereavement support groups: who joins; who does not; and why. *American Journal of Community Psychoogyl, 20*(5), 649-662. doi: 10.1007/BF00941507

Lewis, H. R., & Lewis, M. E. (1972). *Psychosomatics: how your emotions can damage your health*. New York: Viking Press.

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. doi: 10.1016/j.cpr.2004.07.002

Lobb, E. A., Kristjanson, L. J., Aoun, S. M., Monterosso, L., Halkett, G. K. B., & Davies, A. (2010). Predictors of Complicated Grief: A Systematic Review of Empirical Studies. *Death Studies, 34*(8), 673-698. doi: 10.1080/07481187.2010.496686

Lund, D., Caserta, M., Utz, R., & de Vries, B. (2010). Experiences and Early Coping of Bereaved Spouses/Partners in an Intervention Based on the Dual Process Model (DPM). *Omega: Journal of Death & Dying, 61*(4), 291-313. doi: 10.2190/OM.61.4.c

Lund, D. A., Caserta, M. S., & Dimond, M. F. (1993). The course of spousal bereavement in later life. In M. S. Stroebe, W. Stroebe & R. O. Hansoon (Eds.), *Handbook of bereavement: Theory, research and intervention* (p. 240). London: Cambridge University Press.

Manzoli, L., Villari, P., M Pirone, G., & Boccia, A. (2007). Marital status and mortality in the elderly: A systematic review and meta-analysis. *Social Science & Medicine, 64*(1), 77-94. doi: 10.1016/j.socscimed.2006.08.031

Miller, T. W. (2010). Handbook of stressful transitions across the lifespan (pp. xxiii, 691 p. ill. 627 cm.). Retrieved from SpringerLink (Online service), http://dx.doi.org/10.1007/978-1-4419-0748-6

Mitchell, A., Kim, Y., Prigerson, H., & Mortimer-Stephens, M. (2004). Complicated grief in survivors of suicide. *Crisis, 25*, 12-18. doi: 10.1027/02227-5910.25.1.12

Neimeyer, R. A., Burke, L., MacKay, M., & Stringer, J. (2010). Grief Therapy and the reconstruction of meaning: From principles to practice. *Journal of Contemporary Psychotherapy, 40*, 73-83. doi: 10.1007/s10879-009-9135-3

Neimeyer, R. A., & Hogan, N. S. (2001). Quantitative or qualitative?Measurement issues in the study of grief. In M. S. Stroebe, R. O. Hansson, W. Stroebe & H. Schut (Eds.), *Handbook of bereavement research: Consequences, coping, and care* (p. 89). Washington, DC: American Psychological Association.

Ott, C. H. (2003). The impact of complicated grief onmental and physical health at various points in the bereavement process. *Death Studies, 27*(3), 249. doi: 10.1080/07481180302887

Pienta, A. M., & Franks, M. M. (2006). Physical health and widowhood: Do health behaviors change after the loss of a spouse? In D. Carr, R. M. Nesse & C. B. Wortman (Eds.), *Spousal Bereavement in Late Life: New Directions in Theory, Research, Practice* (pp. 117-142). New York: Springer Publishing Company.

Poon, L. W., & American Psychological Association. (1986). *Handbook for clinical memory assessment of older adults*. Washington, DC: American Psychological Association.

Prigerson, H. G., Shear, M. K., Frank, E., & Beery, L. C. (1997). Traumatic grief: A case of loss-induced trauma. *American Journal of Psychiatry, 154*, 1003.

Prigerson, H. G., Shear, M. K., Jacobs, S. C., Reynolds Iii, C. F., Maciejewski, P. K., Davidson, J. R. T., . . . Zisook, S. (1999). Consensus criteria for traumatic grief: A preliminary empirical test. *British Journal of Psychiatry, 174*(JAN.), 67-73. doi: 10.1192/bjp.174.1.67

Radloff, L. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 381. doi: 10.1177/014662167700100306

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical Linear Models: Applications and Data Analysis Methods* (2nd ed.). Newbury Park, CA: Sage.

Sheikh, J. I., & Yesavage, J. A. (1986). Geriatric Depression Scale (GDS): Recent evidence and development of a shorter version. In T. L. Brink (Ed.), *Clinical Gerontology: A guicde to assessment and intervention* (p. 165). New York, NY: Haworth Press.

Stroebe, M., & Schut, H. (2010). The Dual Process Model of Coping with Bereavement: A Decade On. *Omega: Journal of Death & Dying, 61*(4), 273-289. doi: 10.2190/OM.61.4.b

Stroebe, M., Schut, H., & Stroebe, W. (2007). Health outcomes of bereavement. *The Lancet, 370*(9603), 1960-1973. doi: 10.1016/s0140-6736(07)61816-9

Stroebe, M., van Son, M., Stroebe, W., Kleber, R., Schut, H., & van den Bout, J. (2000). On the classification and diagnosis of pathological grief. *Clinical Psychology Review, 20*, 57-75. doi: 10.1016/S0272-7358 (98)00089-0

Stroebe, M., Hansson, R, & Schut, H. (Eds.). (2008). *Handbook of Bereavement Research and Practice: Advances in Theory and Intervention*. Washington, DC: American Psychological Association (APA).

Telonidis, J., Lund, D. A., Caserta, M. S., Guralnick, J. T., & Pennington, J. L. (2005). Effects of widowhood on disabled older women. *Omega: Journal of Death and Dying, 50*, 217. doi: 10.2190/HBMW-64C0-IVLW-QP40

Utz, R, Carr, D, Nesse, R, & Wortman, C. (2002). The effect of widowhood on social participation: An Evaluation of Activity, Disengagement, and Continuity Theories. *The Gerontologist, 42* (4): 522-533. doi: 10.1093/geront/42.4.522.

Waite, L., & Gallagher, M. (2000). *The Case for Marriage: Why Married People Are Happier, Healthier, and Better Off Financially*. New York: Doubleday.

Williams, K., & Umberson, D. (2004). Marital status, marital transitions, and health: A gendered life course perspective. *Journal of Health and Social Behavior, 45*(1), 81-98.

Worden, J. W. (2009). *Grief counseling and grief therapy: a handbook for the mental health practitioner. 4th Edition.* New York: Springer Publishing Company.

24

ACKNOWLEDGEMENTS

Table 1. Self-Reported Grief, Depressive Symptoms, General Health, and Physical Health Symptoms of Older Bereaved Spouses

	01	02	03	04	Statistically Significant Change
LAL Survey *Months Bereaved*	*2-4*	*5-8*	*8-10*	*14-18*	
Grief (13-65, low to high)	42.5	39.0	38.3	36.8	*
Depressive Symptoms (0-15, low to high)	3.8	3.1	2.9	2.8	*
General Health (1-7, poor to excellent)	5.2	5.2	5.1	5.0	
Total # of Symptoms (out of 19 listed below)	4.4	3.4	3.1	2.9	*
Health Symptoms that Decreased					
Difficulty Sleeping	63 %	53 %	45 %	45 %	*
Very Tired	54 %	41 %	35 %	39 %	*
Problems Concentrating	53 %	35 %	29 %	22 %	*
Loss of Appetite	51 %	23 %	19 %	16 %	*
Chest Pain	14 %	9 %	8 %	8 %	*
Rapid Heart Beat	12%	9 %	7 %	4 %	*
Health Symptoms that Increased					
Joint Pains	33 %	38 %	44 %	43 %	*
Bladder or Urinary Problems	14 %	20 %	19 %	22 %	*
Health Symptoms that Did Not Change					
Muscle Aches	30 %	36 %	34 %	35 %	
Headaches	15 %	13 %	15 %	12 %	
Constipation	14%	17%	16 %	15 %	
Blurred Vision	14 %	10 %	12 %	11 %	
Dizzy	13 %	12 %	12 %	11 %	
Abdominal Pain	11 %	7 %	8 %	9 %	
Sweating	9 %	11 %	8 %	11 %	
Difficult Breathing	7 %	7 %	7 %	8 %	
Skin Rash	8 %	6 %	4 %	5 %	
Hair Loss	6 %	7 %	9 %	8 %	
Difficulty Swallowing	5 %	5 %	8 %	7 %	

*Notes: * Statistical tests were used to assess within-factor changes for each variable (e.g., Repeated Measures ANOVA, pairwise T-tests, and fixed effects logit models predicted by time-dummies). The choice of the statistical test depended on whether the variable was continuous or binary; and whether we wanted to know an overall trend across all four time points or changes across two isolated time points. Given the number of trends displayed in the table (n=23 variables), we applied the Bonferroni multiple comparison adjustment (.05/23) so that only those findings with p < .002 are marked as statistically significant trends over time.*

26

Table 2. The Effect of Self-Reported Health on the Longitudinal Trajectory of Grief, as Estimated From Repeated Measures Growth Modeling Equations (n=328)

|	Model 1 (time invariant)			Model 2 (time varying)	
Level 1: Repeated Measures			*Level 1: Repeated Measures*		
π_0: Intercept	61.23	*p<.001*	π_0: Intercept	57.17	*p<.001*
π_1: Slope (linear)	-2.54	*p=.02*	π_1: Slope (linear)	-1.99	*p=.08*
π_1: Slope (quadratic)	0.16	*p=.05*	π_1: Slope (quadratic)	0.13	*p=.12*
Level 2: Person-Level Modifiers			*Level 2: Person-Level Modifiers*		
β_0: Baseline Health*Intercept	-1.36	*p=.006*	β_0: Time-Varying Health*Intercept	-0.51	*p=.08*
β_1: Baseline Health*Slope (linear)	0.04	*p=.64*	β_1: Time-Varying Health*Slope (linear)	-0.02	*p=.86*
β_1: Baseline Health * Slope (quadratic)	-0.003	*p=.63*	β_1: Time-Varying Health * Slope (quadratic)	-0.004	*p=.96*

Notes: Dependent variable is grief symptoms, as measured by the Texas Revised Inventory of Grief (Range 13-65). Actual p-values are presented for all estimates. All models control for additional time-invariant covariates including age (centered), sex, education, race, perceived financial adequacy, and methodological differences (site and intervention). Model fit estimated by AIC; Model 1 = 7638. Model 2 = 7752.

Table 3. The Effect of Self-Reported Health on the Longitudinal Trajectory of Depressive Symptoms, as Estimated From Repeated Measures Growth Modeling Equations (n=328)

	Model 1 (time invariant)		Model 2 (time varying)
Level 1: Repeated Measures		*Level 1: Repeated Measures*	
π_0: Intercept	14.34 $^{p<.001}$	π_0: Intercept	11.76 $^{p<.001}$
π_1: Slope (linear)	-1.14 $^{p=.007}$	π_1: Slope (linear)	-0.95 $^{p=.03}$
π_1: Slope (quadratic)	0.06 $^{p=.06}$	π_1: Slope (quadratic)	0.06 $^{p=.08}$
Level 2: Person-Level Modifiers		*Level 2: Person-Level Modifiers*	
β_0: Baseline Health*Intercept	-1.07 $^{p<.001}$	β_0: Time-Varying Health*Intercept	-0.56 $^{p<.001}$
β_1: Baseline Health*Slope (linear)	0.05 $^{p=.13}$	β_1: Time-Varying Health*Slope (linear)	0.04 $^{p=.22}$
β_1: Baseline Health * Slope (quadratic)	-0.003 $^{p=.30}$	β_1: Time-Varying Health * Slope (quadratic)	-0.004 $^{p=.15}$

Notes: Dependent variable is depressive symptoms, as measured by the Geriatric Depression Scale (Range 0-15). Actual p-values are presented for all estimates.   All models control for additional time-invariant covariates including age (centered), sex, education, race, perceived financial adequacy, and methodological differences (site and intervention).   Model fit estimated by AIC; Model 1 = 6421. Model 2 = 6558.

Figure 1. Longitudinal Trajectory of Grief by Health Status as Estimated from Repeated Measures Growth Modeling Equations. Each of the plotted lines represents a ~~different~~ selected value on the self-reported health scale, ranging from 1 poor health to ~~5~~7 excellent health: Low Health (1.5), Mean Health (5.2) and High Health (6.5).
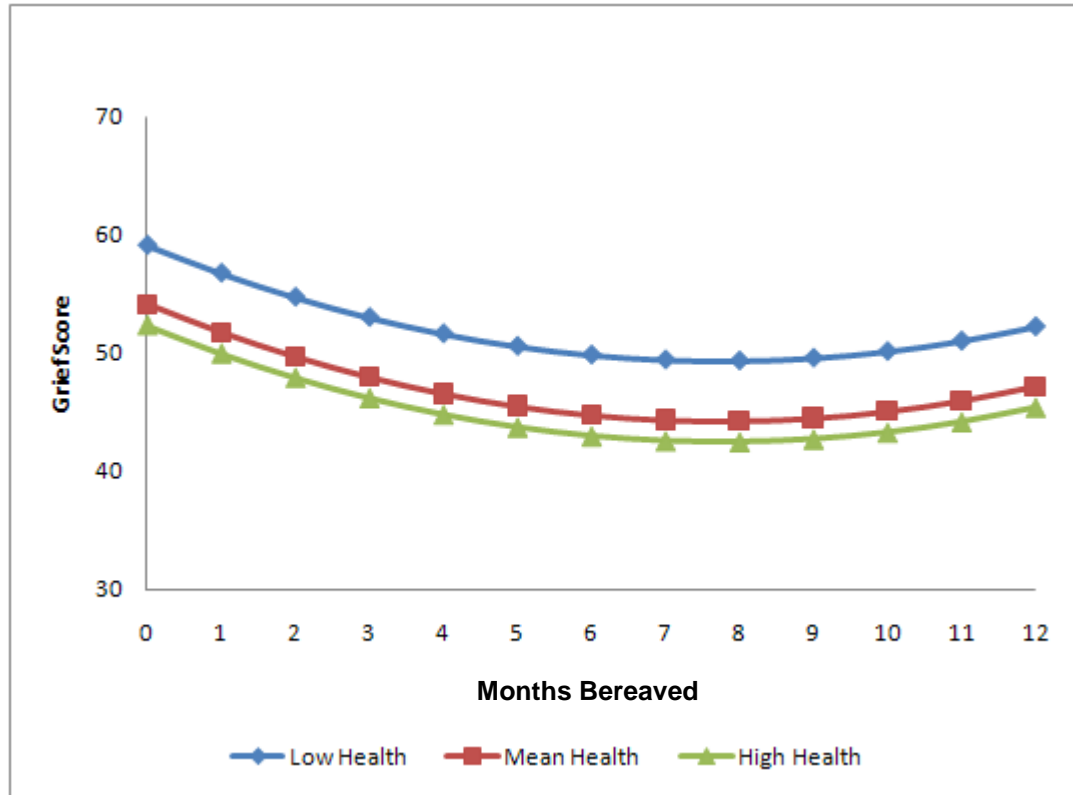
Table 4. The Effect of Physical Health Status on Complicated Grief: Odds Ratios and [95% Confidence Intervals], as Estimated by Logistic Regression Equations (n=275)

	Complicated Grief	
	Exp (B) [95% CI]	Exp (B) [95% CI]
Self-Reported Health	**0.74** p=.01 **[0.59 - 0.93]**	**0.76** p=.025 **[0.58 – 0.98]**
Female		0.83 [0.44 – 1.58]
Age (in years)		0.99 [0.97 – 1.02]
White		0.61 [0.26 – 1.46]
College Degree or More		0.76 [0.41 – 1.44]
Finances: More than Adequate		Reference
Finances: Comfortable		1.31 [0.56 – 3.08]
Finances: Not Very Good		1.17 [0.37 – 3.70]
Marital Happiness (1 to 7 scale)		**1.87** p=.001 **[1.30 – 2.70]**
Expected Death		0.66 [0.37 – 1.20]
Satisfied with Support: Relatives		**0.47** p=.05 **[0.22 – 1.02]**
Satisfied with Support: Friends		**0.38** p=.01 **[0.19 – 0.76]**
LAL Study Location (city vs. city)		1.46 [0.74 – 2.87]
LAL Intervention Condition (A vs. B)		1.02 [0.56 – 1.85]
Months Bereaved (at study enrollment)		1.16 [0.81 – 1.65]

Bold indicates statistically significant effect, p<.05. Actual p-values noted in *italics* for all significant effects. Model fit estimated by Adjusted R-Squared (Nagelkerke) = 0.21

Table 5. The Effect of Physical Health Status on Major Depression: Odds Ratios and [95% Confidence Intervals], as Estimated by Multinomial Regression Equations (n=275)

	Probable Depressive Episode [+]		Major Depression [+]	
	Exp (B) [95% CI]	Exp (B) [95% CI]	Exp (B) [95% CI]	Exp (B) [95% CI]
Self-Reported Health	**0.59** $p<.001$ **[0.45 - 0.78]**	**0.72** $p=.025$ **[0.53 – 0.97]**	**0.46** $p<.001$ **[0.30 – 0.69]**	**0.47** $p=.001$ **[0.30 – 0.74]**
Female		1.28 [0.53 -0.97]		0.37 [0.10 – 1.39]
Age (in years)		1.00 [0.97 – 1.04]		0.95 [0.89 – 1.02]
White		0.95 [0.32 – 2.79]		2.95 [0.20 – 42.7]
College Degree or More		1.82 [0.86 – 3.89]		0.75 [0.20 – 2.80]
Finances: More than Adequate		Reference		Reference
Finances: Comfortable		**9.03** $p=.04$ **[1.16 – 70.3]**		2.33 [0.25 – 22.1]
Finances: Not Very Good		**29.42** $p=.002$ **[3.37 – 257]**		4.75 [0.36 – 62.01]
Marital Happiness (1 to 7 scale)		1.06 [0.74 – 1.50]		0.82 [0.48 – 1.38]
Expected Death		0.78 [0.38 – 1.60]		0.90 [0.26 – 3.13]
Satisfied with Support: Relatives		0.77 [0.31 – 1.92]		**0.10** $p=.001$ **[0.03 – 0.38]**
Satisfied with Support: Friends		**0.26** $p=.001$ **[0.12 – 0.56]**		1.54 [0.40 – 6.03]
LAL Site Location (city vs. city)		1.70 [0.76 – 3.93]		0.66 [0.15 – 2.96]
LAL Intervention Condition (A vs. B)		0.93 [0.45 – 1.92]		0.59 [0.18 – 1.98]
Months Bereaved (at study enrollment)		1.04 [0.67 – 1.60]		1.38 [0.62 – 3.09]

[+] Reference category for the dependent variable is "no depression". **Bold** indicates statistically significant effects, $p<.05$. Actual p-values are in *italics* for all significant effects. Model fit estimated by Adjusted R-Squared (Nagelkerke) = 0.36