CHAPTER 2

Methodological Issues in Studying Late Life Bereavement

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The death of one's spouse is considered one of the most distressing, yet also one of the most common, transitions that older Americans face. Although studies of spousal bereavement have flourished in recent years, researchers have not reached a consensus on important issues related to loss. Scholars continue to debate important policy-relevant questions, such as: Who suffers more, men or women? Why do men and women respond differently to spousal loss? How do characteristics of the spouse's death affect the bereaved survivor's adjustment? Is "absent" grief indicative of a healthy or pathological reaction to loss? Conclusive answers to these questions require well-designed rigorous studies that are free of sampling, measurement, and other methodological limitations that may lead to biased or inconclusive findings.

This chapter reviews the methodological challenges that researchers must address in order to make sound contributions to the bereavement debate. I first review the strengths and weakness of commonly used data sources, including help-seeking, bereaved, and community samples. Second, I compare the attributes of cross-sectional versus prospective and longitudinal data sets as appropriate sources for studying bereavement. Third, I underscore the value of using a diverse range of outcomes in bereavement research. Fourth, I describe the purposes and potential contributions of both mediational and moderational analyses. Fifth, I describe the ways that developmental and age-related changes may affect adjustment to loss, and the implications of these patterns for researchers who rely on age-heterogeneous samples. Finally, I describe the

Changing Lives of Older Couples (CLOC) data set, and discuss the distinctive strengths of this study as a resource for studying late life bereavement.

RESEARCH DESIGN AND SAMPLE ISSUES

Help-Seeking Samples

The data and methods available for studying spousal bereavement have undergone important transformations over the past 5 decades. Early studies of bereavement drew subjects from patient populations, usually those seeking psychiatric treatment (e.g., Parkes, 1965). Comparison groups rarely were considered; when control groups were used they typically included non-bereaved patients seeking treatment (Hyman, 1983). Although some recent studies draw subjects from clinical populations (Arbuckle & deVries, 1995), or persons participating in self-help groups (e.g., Silverman, 1986; Wheeler, 2001), findings from these studies cannot be generalized to broader bereaved populations. By definition, patient and self-help group samples include those already seeking help. Findings based on these data may overstate the negative consequences of loss because persons with the most difficult readjustments are overrepresented in help-seeking samples.

Bereaved-Only Samples

Other early studies of widowhood relied on small community-based samples of bereaved persons only; a main objective of such studies was to identify those bereaved persons at greatest risk of developing emotional or physical health problems following loss (e.g., Berardo, 1970; Lopata, 1973; Marris, 1958). Although these studies often produced path-breaking insights into the bereaved spouses' experiences, their conclusions were based on small, non-representative, or volunteer samples, and they often were drawn from specific geographic areas (e.g., Lund, Caserta, & Dimond, 1989). The overwhelming majority focused on women only (Lopata, 1973; Hyman, 1983; Morgan, 1991; O'Bryant, 1991), although a handful documented the experiences of widowers only (e.g., Berardo, 1970; Campbell & Silverman, 1996). Single-sex samples are problematic because they do not allow researchers to assess gender differences in responses to loss.

Moreover, studies based on samples of the bereaved cannot evaluate systematically the *consequences* of spousal loss because they do not include married persons as a comparison group. For example, studies based on samples of widows and widowers cannot evaluate whether the event of widowhood affects men and women differently (e.g., Dimond, Lund, & Caserta, 1987;

Lund, Caserta, & Dimond, 1986). Although these analyses may reveal gender differences in depression rates among the bereaved, they cannot necessarily attribute this to gender differences in the effect of widowhood. Rather, this difference may reflect gender differences in psychological health *in general.* Women have rates of depression that are roughly twice that of men's, while men have significantly higher rates of alcohol use, drug dependence, and antisocial behavior disorders than women (Rieker & Bird, 2000). Thus, in order to ascertain whether spousal loss affects women's and men's mental health differently, researchers cannot simply compare widows and widowers. Rather, they must examine the direct effects of both widowhood and gender on mental health separately, as well as the combined effects of the two. The evaluation of interaction terms allows researchers to ascertain whether widowed women differ from married women, and whether the event of spousal loss affects men and women differently.

Sample Surveys

Over the past 25 years, the development of large sample surveys, including the Epidemiologic Catchment Area (ECA) studies (Robins & Regier, 1990), Americans' Changing Lives (ACL) studies (House, 1986), and National Comorbidity Survey (Kessler et al., 1994) has enabled researchers to compare widowed persons and married persons in terms of important psychological, social, and economic characteristics. Empirical findings based on such large-scale sample surveys are more generalizable than findings from clinical or help-seeking samples, and they allow for comparisons between bereaved and non-bereaved persons. However, most were designed to study health and well-being in the general population and not for the explicit purpose of studying spousal bereavement (Hatch, 2000). Consequently, these studies often do not include detailed information on the circumstances of the loss, such as the length of time since spousal loss, the cause of death, or the extent to which the survivor provided care to the now-deceased spouse (Stroebe, Hansson, & Stroebe, 1993).

Most survey-based bereavement research has relied on cross-sectional rather than longitudinal data. That is, most studies have been based on single point-in-time "snapshot" data rather than on multiple observations over an extended time period. Cross-sectional data pose important obstacles to establishing causal influences; researchers cannot necessarily ascertain whether the differences observed between widowed persons and married persons are attributable to the event of widowhood per se or to differences that existed prior to the loss. In other words, cross-sectional data cannot resolve whether

an observed statistical relationship reflects causation, correlation, or a spurious relationship (see Dohrenwend, Levav, & Shrout, 1992 for a review).

Selective Pressures into Widowhood

A common strategy for examining the effect of widowhood is to compare bereaved and married persons in a cross-sectional sample, then to assume that data from married respondents can be used to represent the behaviors, attitudes, and experiences of widows and widowers prior to their loss (Ferraro & Barresi, 1982). The assumption that married and widowed persons are similar on important attributes is problematic; however, because both *becoming widowed* and *remaining widowed* are selective processes. Not all persons are equally likely to become (or remain) widowed, and factors that increase one's likelihood of becoming widowed also may increase susceptibility to loss-related problems, such as depression, anxiety, financial distress, poor health, or risky health behaviors. For example, persons with limited economic resources are more likely to die prematurely than are wealthier individuals (McDonough, Williams, House, & Duncan, 1999; Preston & Taubman, 1994). Given that the survivors of these early decedents shared their spouses' disadvantaged socioeconomic position, they are more likely to experience economic deprivation (and accompanying psychological distress) *even in absence* of the widowhood event (Kessler, 1979; Dohrenwend et al., 1992). That is, the observed statistical relationship between widowhood and economic distress may be spurious rather than causal.

Considering one's psychological characteristics prior to loss is particularly important in studies exploring affective and emotional responses to widowhood. For example, depressive symptoms prior to loss are a powerful predictor of the most severe and long-lasting grief reactions following loss (e.g., Gilewski, Farberow, Gallagher, & Thompson, 1991; Zisook & Shuchter, 1991). However, researchers cannot distinguish loss-related depressive symptoms from preexisting depression in studies based on cross-sectional data. In sum, it is critically important to evaluate the *precursors* of the widowhood experience if researchers hope to properly specify and interpret the consequences of spousal loss, including the possibility that some of the observed effects of widowhood may instead reflect a spurious relationship.

Selective Pressures Out of Widowhood

Just as *becoming widowed* is a selective process, *exiting widowhood* via either remarriage or death also is a selective transition. Persons who remain widowed for the longest durations (and thus are most likely to be identified as "currently

widowed" in a cross-sectional survey) may differ significantly from those who have exited the "widowed" category. The healthiest, wealthiest, and happiest bereaved spouses are the most likely to remarry (Mastekaasa, 1992; Peters & Liefbroer, 1997). Cross-sectional studies that compare currently widowed with currently married people may thus *overstate* the deleterious consequences of loss; the average well-being of persons remaining widowed is lower than for those who "exit" the widowed state via remarriage. In contrast, the least healthy, wealthy, and happy widowed persons have an elevated risk of mortality (e.g., McDonough et al., 1999; Preston & Taubman, 1994). As a result, studies that compare the widowed with the married also may *understate* the deleterious consequences of loss: the average well-being of persons who survive is higher than for those persons who die during the study period. Whether the effects of spousal loss are over- or understated in a given study may reflect the composition of the study sample; if a high proportion of sample members remarry (e.g., a sample including many young widowers), then the deleterious consequences of loss are overstated. Conversely, if many sample members die shortly after loss (e.g., a sample including many older or ill persons), then the harmful consequences of bereavement may be understated.

Prospective Studies

The challenges posed by social selection can be addressed effectively by using a quasi-experimental prospective research design. Under such a design, data collection begins prior to the time that individuals experience the critical event or transition, such as spousal loss. Subjects are then tracked over time, and persons who eventually become bereaved are then matched with a non-bereaved "control" person who also participated in the baseline interview and who shares important pre-loss characteristics. Differences between bereaved persons and matched controls at subsequent interviews can be attributed to the event of widowhood.

In general, quasi-experimental designs are considered one of the most effective methods for establishing causation in studies where the key independent variable (such as "becoming widowed") cannot be randomly assigned (Campbell & Stanley, 1966). A further strength of the prospective design is that it allows researchers to obtain *timely measures* of important pre-loss characteristics. For example, cross-sectional studies may ask respondents to recall events, conditions, and personal characteristics from the distant past. Prospective studies, in contrast, are superior to cross-sectional studies because the problems introduced by retrospective recall bias are minimized. Retrospective recall bias is a particularly serious concern when studying older

adults. Errors in recalling past experiences increase with age; the longer the recall period, the less reliable are the retrospective reports (Dex, 1995). Age-related cognitive and physical impairments also may increase recall errors (Schwarz, Park, Knauper, & Sudman, 1999; Simon & Von Korff, 1992).

For all age groups, however, recent experiences may affect the way that past experiences are remembered (Scott & Alwin, 1998). In general, current positive mood leads to positive (and often unrealistically rosy) evaluations of the past, whereas negative mood leads to more negative evaluations of one's past experiences and relationships (Futterman, Gallagher, Thompson, Lovett, & Gilewski, 1990; Hirschfield et al., 1989). This mood-induced recall bias may threaten the validity of studies linking retrospective accounts of spousal death with the survivor's current psychological adjustment. Bereaved persons who experience the highest levels of anger and anxiety may, in retrospect, overestimate the extent to which unsatisfactory medical care contributed to their spouses' deaths (Carr, 2003). Moreover, widowed persons who yearn most for the deceased may give unrealistically positive evaluations of their late spouse and late marriage (Bonanno, Wortman, & Nesse, 2004). This process of retrospectively "sanctifying" the memory of one's spouse (Lopata, 1973) may bias investigations linking marital quality with psychological adjustment to spousal loss (Carr et al., 2000). Prospective studies that evaluate characteristics such as marital quality and quality of spouse's medical care prior to loss are less susceptible to the threats to validity imposed by retrospective recall bias. The Changing Lives of Older Couples study (CLOC) is based on a prospective quasi-experimental design; the study details will be elaborated later in this chapter. A further strength of the CLOC study is that it obtains longitudinal data, which enables researchers to explore important and unexplored research questions about the course of bereavement.

Longitudinal Data

Longitudinal studies, or studies that track individuals over time and obtain data at multiple time points, offer important advantages to bereavement researchers. First, longitudinal studies are vastly superior to cross-sectional studies in revealing causal influences because they can better pinpoint the temporal ordering of events and experiences (Alwin & Campbell, 2001). Multiple data points are particularly important when exploring the consequences of stressful life events, such as widowhood. Widowhood typically is conceptualized as a discrete, observable event believed to trigger significant life changes (Holmes & Rahe, 1967). However, most discrete events take time to come to fruition and often occur after a long period of prior stress (Avison

& Turner, 1988; Wheaton, 1999). For example, widowhood may occur at the end of a long period of stressful caregiving. Researchers seeking to evaluate the effect of an event also must consider the social context and conditions that precede that event.

Second, because longitudinal studies obtain data at several time points, researchers can study *change over time*. This is an important concern for bereavement researchers. Many bereavement practitioners operate on the assumption that grief unfolds in stages and that most bereaved persons experience a generally similar set of symptoms in a generally similar order (Heinemann & Evans, 1990; Kubler-Ross, 1969). The development of new statistical methods in recent years, including latent growth curve modeling, provides tools for analyzing longitudinal data and thus enables researchers to directly evaluate claims about the duration, course, and patterning of grief symptoms. For instance, Bonanno and Kaltman (1999, 2001) use longitudinal data to document three distinctive courses of grief symptoms among older bereaved adults: a minimal grief response, a recovery pattern, and a chronic pattern. These dynamic patterns could not have been detected using cross-sectional data only.

Third, longitudinal studies that span extensive time periods allow researchers to document the long-term consequences of an event or transition. Identifying the distinctive characteristics of those persons for whom grief persists is an important objective for clinicians and practitioners. Moreover, studies that offer a long-term time horizon can document important transitions that may not occur until several years after a distressing event. For example, Lehman, Wortman, and Williams (1987) showed that persons who lost a spouse or child in an automobile accident were more likely than matched controls to experience premature death, divorce, and psychological distress, although these problems often did not occur until as late as 7 years after their loved one's death.

Longitudinal studies do have several important limitations, however. The cost of collecting data at multiple time points can be prohibitive. Moreover, attrition—or the loss of subjects over the course of the study—bias the study's findings if the subjects who are lost share certain characteristics (see Mott, 2002 for review). Selective attrition is a particularly important concern in studies of older populations. Older, less healthy, poorer, and more residentially mobile persons are most likely to drop out of longitudinal studies. The selective attrition of persons with the fewest protective resources may lead researchers to underestimate the potentially harmful consequences of spousal loss if those who are the most depressed and sick drop out of the study due to either death or ill health. Researchers should thus take appropriate steps

to identify and acknowledge both the sources and possible consequences of sample attrition. More sophisticated strategies, such as weighting adjustments, imputation (Little & Rubin, 1987; Little & Schenker, 1995), and the estimation of two-stage selection models (e.g., Heckman, 1979; Heckman & Singer, 1984) also are effective ways to address the issue of selective attrition.

IMPORTANCE OF MULTIPLE OUTCOMES IN BEREAVEMENT RESEARCH

The majority of research on spousal bereavement focuses on psychological adjustment among the bereaved. This emphasis is consistent with the widely acknowledged assumption that widowhood is among the most stressful of all life events and as such has important psychological ramifications (Holmes & Rahe, 1967). However, researchers may develop a richer understanding of how older adults adjust to loss by considering a fuller range of psychological, social, and behavioral outcomes, including social engagement and participation (Utz, Carr, Nesse, & Wortman, 2002), social support from family and friends (Ha, Carr, Utz, & Nesse, 2005), physical health (Wilcox, et al., 2003), strategies for managing daily activities (Umberson, Wortman, & Kessler, 1992; Utz et al., 2004), and personal growth in the face of loss (Carr, 2004).

The importance of considering multiple outcomes in stress research has been elaborated elsewhere (e.g., Aneshensel, Rutter, & Lachenbruch, 1991; Horwitz, 2002). The main reasons for considering multiple outcomes are: (a) to identify the *diverse array of consequences* that widowhood may have for older adults, (b) to identify *important subgroup differences* in how newly bereaved persons respond to loss, and (c) to recognize that commonly used *global* measures of adjustment may mask more *specific* adjustments to loss.

Multiple Consequences of Spousal Loss

Most bereavement research focuses on negative mental health indicators and psychiatric complications including depressive symptoms, major depressive disorders (MDD), anxiety-related disorders such as posttraumatic stress disorder (PTSD), and grief (e.g., Bruce, Kim, Leaf, & Jacobs, 1990; Jacobs, Hansen, Berkman, Kasl, & Ostfeld, 1989; Lund et al., 1985–1986; Stroebe et al., 1993; Zisook, Paulus, Shuchter, & Judd, 1997; Zisook & Shuchter, 1991). The two most commonly used outcomes are depression and grief. Depression typically is measured as either a categorical variable signifying

that one has experienced a 2-week spell of depressed mood and somatic and behavioral symptoms in the year prior to interview, or with a continuous measure of depressive symptoms such as the Center for Epidemiologic Studies Depression (CES-D) scale (Radloff, 1977). Grief typically is measured either as an overarching scale that may comprise more specific symptom subscales (Jacobs, Kasl, & Ostfeld, 1986; Singh & Raphael, 1981; Zisook, DeVaul, & Click, 1982), or as a categorical indicator of a specific "type" of grief, such as "complicated" grief (Barry, Kasl, & Prigerson, 2002; Prigerson et al., 1995) or "traumatic" grief (Prigerson & Jacobs, 2001; Prigerson et al., 1999).

On one hand, this emphasis on negative aspects of psychological adjustment and the presence or absence of pathology is justifiable. Distress and depression are relatively common reactions to loss; most studies find that 15 to 30% of older bereaved spouses experience clinically significant depression in the year following their spouse's death (Jacobs et al., 1989; Stroebe et al., 1993; Zisook & Shuchter, 1991). The widespread emphasis on dichotomous outcomes (i.e., the presence or absence of a diagnosis) also is consistent with medical and psychiatric practices (Horwitz, 2002). Psychiatrists, clinicians, and counselors are trained to treat pathology; the decision to treat is contingent upon whether or not one has a formal diagnosis (Kessler, 2002). Moreover, a formal diagnosis may be necessary if a patient seeking treatment hopes to receive reimbursement from Medicare or most HMOs (e.g., Rost, Smith, Matthews, & Guise, 1994).

An alternate perspective among many bereavement researchers is that the consequences of loss should be conceptualized more broadly. Outcomes should be considered both as continua and as discrete categories. Studies focusing only on discrete outcomes, such as MDD or complicated grief, may underestimate the harmful consequences of loss; distressed individuals who barely fail to meet the criteria for the diagnosis are disregarded (Mirowsky & Ross, 2002). The pervasive emphasis on psychological disorder also is problematic in that it identifies only the *presence of negative* mental health rather than the *absence of positive* mental health (e.g., Jahoda, 1958). Ryff and Singer (1998) have argued that persons who score extremely low on indicators of positive psychological adjustment, such as self-esteem, personal growth, or mastery, may find themselves at an elevated risk of major depression if confronted with additional life stressors.

An emerging body of research calls for the exploration of positive mental health in the face of adversity. As noted earlier, most studies find that 15 to 30% of bereaved older spouses experience clinically significant depression in the year following spousal death (Jacobs et al., 1989; Stroebe et al., 1993; Zisook &

Shuchter, 1991); however, this statistic also suggests that the majority of older bereaved spouses experience the widowhood transition without major depression. Several recent studies conclude that spousal loss may have direct positive consequences for some older bereaved persons: Frantz, Farrell, and Trolley (2001, p. 191) observe that, "grief leaves in its wake many positive outcomes." A rapidly emerging body of research has sought to identify the personal and contextual characteristics that may facilitate psychological resilience (Bonanno, 2004), "benefit-finding" (Nolen-Hoeksema & Davis, 2001), personal growth (Carr, 2004), and posttraumatic growth (Nolen-Hoeksema & Davis, 2004; Wortman, 2004) after spousal loss.

In sum, both negative *and* positive indicators of adjustment to loss should be considered, and these reactions should include a full range of readjustment indicators. A focus on psychological dimensions only may perpetuate and reify the assumption that grief is pathological, rather than a normative response to a distressing life event. For older adults, in particular, spousal loss may require important behavioral, economic, social, and psychological readjustments. For women, loss-related distress may be a consequence of financial difficulties, loss of income, lack of experience in managing their household finances, and perceived financial distress (Umberson et al., 1992). For older widowers, in contrast, difficulty in managing household tasks, such as meal preparation, is associated with both physical and psychological declines following loss (Lee, DeMaris, Bavin, & Sullivan, 2001; Umberson et al., 1992). It is thus critically important that practitioners, social workers, and outreach workers identify those persons at risk of a wide array of challenges following loss so that appropriate interventions may be developed.

Subgroup Differences in Bereavement Experience

Studying single outcomes, such as depression or grief only, is a serious liability to researchers who are interested in documenting the distinctive consequences of spousal loss for specific subgroups. Different gender, age, socioeconomic status, and ethnic groups may respond to spousal loss in distinctive ways (e.g., Aneshensel et al., 1991; Horwitz, White, & Howell-White, 1996). To the extent that different groups have distinctive reactions to loss, then studying a single outcome may mask meaningful group comparisons (Stroebe & Stroebe, 1983).

For instance, emotional reactions to loss are shaped by age, gender, and cultural norms. "Feeling rules" or "emotion rules" provide guidelines for which feelings should be revealed (and suppressed), by whom, and in which contexts (Hochschild, 1979). Social norms may encourage men's experi-

ence of anger, but not sadness, while reverse norms are applied to women (Ross & Mirowsky, 1995). Empirical studies that compare the psychological adjustment of men and women after marital dissolution (including both divorce and widowhood) show that women manifest depressive symptoms while men evidence alcohol problems (see Umberson & Williams, 1999 for a review). Age-related emotional and cognitive changes also may affect the ways that individuals adjust psychologically to spousal loss. Older adults are less likely than younger persons to report symptoms of extreme distress or depression (Carstensen & Turk-Charles, 1994). Consequently, studies that focus on single outcomes only may hide the specific consequences for different subgroups.

Importance of Symptom Subscales

Bereavement research also has focused largely on *general* outcomes, such as depression or grief. However, studies based on these broad measures only may fail to reveal the *specific symptoms* experienced in the face of loss. Depression scales, for instance, comprise such subscales as depressed affect, motivational loss, cognitive evaluations, and somatic complaints (Radloff, 1977). Older bereaved adults with clinical depression may not exhibit a dysphoric or "sad" mood, but instead may show elevated somatic concerns and irritability (Blazer, 1996). Research focusing only on one overarching depression scale score may mask these important distinctions.

Grief also comprises complex cognitive and emotional reactions (Bonanno & Kaltman, 1999). Grief may encompass symptoms including normative responses to loss, such as short-term sadness (Raphael, Minkov, & Dobson, 2001), yearning for the deceased (Wortman & Silver, 2001), or anxiety and fear about surviving on one's own (Martin & Doka, 2000). The precise symptoms expressed may be closely linked to the nature and context of the loss. For instance, persons who experience the sudden loss of a spouse are particularly susceptible to intrusive thoughts (Carr, House, Wortman, Nesse, & Kessler, 2001; Bonanno & Kaltman, 1999; Zisook, Chentsova-Dutton, & Shuchter, 1998). Intrusive thoughts occur when unprovoked painful thoughts about the deceased haunt the survivor. In contrast, persons who experience the loss of a spouse following a long period of forewarning have been found to report elevated anxiety symptoms, perhaps a result of a lengthy and exhausting period of spousal caregiving prior to loss (Carr et al., 2001). These distinctive (and potentially competing) effects of anticipated versus sudden death may cancel out one another when an aggregated scale, such as grief only, is considered as an outcome measure.

UNEXPLORED PATHWAYS: IDENTIFYING THE "BLACK BOX" OF WIDOWHOOD

Bereavement researchers often observe that empirical studies are replete with discrepant or equivocal findings. An important example is research on gender differences in reactions to loss. Several studies report that widowed women are more depressed than men (e.g., Farnsworth, Pett, & Lund, 1989; Schuster & Butler, 1989; Thompson, Gallagher, Cover, Galewski, & Peterson, 1989), whereas many others find widowhood to have a more adverse effect on men than women (e.g., Lee, Willetts, & Seccombe, 1998; Lee DeMaris, Bavin & Sullivan, 2001; Umberson, Wortman, & Kessler, 1992). A third group finds no gender differences in psychological health following loss (e.g., Gerstel, Riessman, & Rosenfeld, 1985; Lund, Caserta, Dimond, & Shapper, 1989; Zisook & Shuchter, 1991). The inconclusive findings may be due, in part, to three important methodological issues: (a) variable time periods between spousal loss and follow-up, (b) limited attention to the potential "pathway" variables that may account for different reactions to spousal loss, and (c) an emphasis on the "who suffers worse" approach (Stroebe & Stroebe, 1983), which typically contrasts the post-loss experiences of two subgroups, such as men and women. This approach neglects the possibility that there may be greater *within-group* than *between-group* variation in responses to loss.

Consequences of Loss Are Time Dependent

The effects of spousal loss are conditional upon time since loss, where the severity of one's reaction declines as time elapses. Most studies concur that psychological functioning returns to "normal" or pre-loss levels within 24 months following loss (Bonanno & Kaltman, 2001). The consequences of loss may be masked in heterogeneous samples that include both persons who have long since recovered from loss and those who experienced loss very recently.

Lack of attention to time since loss also may have implications for specifying subgroup differences in reactions to late life loss. On average, men are widowed for shorter time periods than women, because they are more likely to exit the "widowed" state via either remarriage or mortality (Lee et al., 2001). At any given time, then, a higher proportion of widowers than widows are recently bereaved, and the recently bereaved tend to have poorer psychological and physical adjustment. Thus, researchers should stratify their samples based on the time elapsed since loss. Otherwise, the effects of loss will be either overstated or understated, depending on the composition of the analytic sample.

Identifying Why and How Widowhood Matters

Studies that simply evaluate the effect of widowhood (or other stressful life events) on well-being find surprisingly modest effects (e.g., Rabkin & Streuning, 1976; Thoits, 1983). Important questions about the meaning and consequences of widowhood may remain unanswered unless a broad range of potential pathway variables are taken into consideration. Pathway or mediating variables are the variables that transmit the effect of a purported causal variable, such as widowhood (Baron & Kenney, 1986).

One important set of pathways are secondary stressors, or those difficulties triggered by a stressful life event. In the case of spousal loss, secondary stressors may include a distressing period of financial insecurity, loneliness, or anxiety about managing household responsibilities. Importantly, most secondary stressors are *modifiable factors* and carefully targeted interventions may eliminate or mitigate the potentially harmful consequences of these stressors. For example, the linkage between spousal loss and psychological distress has been attributed to post-loss financial strains among women (e.g., Umberson et al., 1992) and to the lack of social support (Carr, 2004), the loss of their late spouse's health monitoring and support efforts (e.g., Umberson, 1987), and difficulties managing household and meal preparation tasks among men (e.g., Lee et al., 2001; Umberson et al., 1992). Thus, practitioners could develop programs to target women's financial needs and men's instrumental and household needs if they hope to mitigate loss-related distress.

Identifying Within-Subgroup Variations in Bereavement Experiences

Mediation analyses are an important strategy for uncovering the reasons why two subgroups, such as men and women, experience loss differently (Baron & Kenney, 1986). However, studies based on mediation analyses seldom take into account the fact that there is considerable *within-subgroup variation* in terms of most pathway variables (Carr, 2004). An alternative strategy, moderation analyses—or the evaluation of theoretically guided two-way interaction terms—allows researchers to answer questions such as: Are gender differences in psychological adjustment to loss still evident, even when we compare women and men who share similar levels of some attribute, such as social support or financial stability? Recent moderation analyses have revealed that when widows and widowers have similar levels of social support, they adapt equally well to spousal loss (Carr, 2004; McCrae & Costa, 1993).

Identifying the sources of within-gender differences in adjustment to loss may have important implications for understanding future cohorts of older

widowed persons. Although current cohorts of older adults have generally adhered to a strict gender-based division of labor in their marriages, future generations are less likely to adhere to such rigid arrangements and are less likely to abide by gender-typed social roles at every stage of the life course. Future cohorts of married women are less likely to be highly dependent upon their husbands for their economic well-being, whereas future cohorts of married men are less likely than current cohorts to depend on their wives for instrumental and expressive support. As gender-typed boundaries blur over time, the ways that older adults adjust to spousal loss may become less differentiated by gender (Carr, 2004). Studies that simply contrast men and women may be less informative (and less relevant) than studies that explore within-gender sources of adjustment.

The Special Case of Older Bereaved Spouses

Past research and theory suggests that widowhood may have a profoundly different meaning and set of consequences for older and younger persons. On one hand, spousal loss may be *less strongly linked* to subsequent distress among older adults compared to younger adults. Older adults are more likely than younger persons to have experienced the death of a significant other prior to spousal loss, and may be better equipped to make sense of and cope with their most recent loss (Thompson et al., 1989). Additionally, with advanced age, spousal loss may be at least somewhat expected (Neugarten & Hagestad, 1976). Roughly 50% of women over the age of 65 are widowed (Fields & Casper, 2001); older women, in particular, may anticipate the deaths of their husbands as they observe their peers experiencing widowhood (Fooken, 1985; Neugarten & Hagestad, 1976). Most older adults today die of long-term chronic illnesses, such as cancer or cardiovascular disease (U.S. Bureau of Census, 1996); older married persons may recognize that their ill spouse will die in the near future (Carr et al., 2001). In contrast, deaths to younger adults are more likely to occur suddenly, unexpectedly, and under particularly distressing circumstances such as murders or accidents (Calhoun & Allen, 1991; Reed, 1998; Rynearson, 1984). Given that predictable, anticipated life transitions are less stressful than unexpected ones (George, 1993; Pearlin, 1982; Pearlin & Lieberman, 1979), older bereaved spouses may experience a less difficult readjustment than younger widow(er)s.

The purported weak relationship between widowhood and psychological distress among older adults (relative to younger adults) also may reflect age-related declines in emotional reactivity. Compared to younger adults,

older adults have a greater capacity to manage or "regulate" their emotional states (Lawton, Kleban, Rajagopal, & Dean, 1992); consequently, they report less extreme levels of both positive and negative affect, and less variability in their emotional responses to stress (Gaitz & Scott, 1972; Mroczek & Kolarz, 1998; Stacey & Gatz, 1991). Grief reactions also are less intense and shorter lived among the elderly bereaved, compared to the younger bereaved (Nolen-Hoeksema & Ahrens, 2002; Sanders, 1993; Sherbourne, Meredith, Rogers, & Ware, 1992). Emotional reactivity may decline in later life because of a variety of factors: (a) biological decrease in autonomic arousal, (b) the greater habituation of older adults to emotional life events, (c) adherence to cultural expectations that the elderly should not be "too emotional," and (d) shifts in the relative salience of emotion versus cognition in late life (Carstensen & Turk-Charles, 1994; Diener, Sandvick, & Larsen, 1985). Older adults are also believed to have wisdom, which may help to minimize loss-related distress; they may accept adverse life events with equanimity and acceptance (Baltes, Smith, & Staudinger, 1992).

Research on stress over the life course suggests, conversely, that spousal loss may be *more strongly* linked to subsequent distress for older adults, given that older adults are more likely to experience prior, co-occurring, or subsequent stressors that may overwhelm their ability to cope (Kraajj, Arensman, & Spinhoven, 2002). Older adults are more likely than younger persons to experience cognitive declines, financial pressures, the deaths of friends and loved ones, and the loss of physical strength and abilities (Arbuckle & deVries, 1995; Norris & Murrell, 1990; Zautra, Reich, & Guarnaccia, 1989). For these reasons, research on the consequences of widowhood should either examine separately the experiences of older adults versus younger adults, or should investigate systematically whether different patterns emerge for different age groups. Studies based on age-heterogeneous samples that simply control for the bereaved person's age cannot reveal the specific consequences of loss for older versus younger adults, and they may fail to show the distinctive risk factors for loss-related distress among older versus younger bereaved spouses.

THE CHANGING LIVES OF OLDER COUPLES (CLOC) STUDY

Sample Characteristics

Many unresolved and unexplored questions about late life widowhood can be addressed with the Changing Lives of Older Couples (CLOC) study, a large multi-wave prospective study of spousal bereavement. The CLOC study

is based on a two-stage area probability sample of 1,532 married men and women from the Detroit (Michigan) Standardized Metropolitan Statistical Area (SMSA).[1] To be eligible for the study, respondents had to be English-speaking members of a married couple where the husband was age 65 or older. All sample members were non-institutionalized and were capable of participating in a 2-hour face-to-face interview. Women were over-sampled in order to increase the likelihood that sample members would become bereaved during the study period; this decision was based on the widely documented finding that men have a higher risk of mortality than do women. Consequently, many analyses presented in this volume use weighted data in order to adjust for unequal probabilities of selection and differential response rates at the initial interview.

Baseline face-to-face interviews with the married older adults were conducted June 1987 through April 1988. The response rate for the baseline interview was 68%, which is consistent with the response rate from other Detroit area studies in that period. Spousal loss was monitored subsequently using monthly death record tapes provided by the State of Michigan and by reading the daily obituaries in Detroit-area newspapers. The National Death Index (NDI) and direct ascertainment of death certificates were used to confirm deaths and obtain causes of death. Of the 335 respondents known to have lost a spouse during the study period, 316 were contacted for possible interview (19 persons, or 6% had died during the interim). Of the 316 contacted, 263 persons (83%) participated in at least one of the three follow-up interviews conducted 6 months (Wave 1), 18 months (Wave 2), and 48 months (Wave 3) after the spouse's death. Each widowed person was "matched" with a same-age, same-sex, non-bereaved person from the baseline sample, and this matched control also was interviewed at each of the three follow-ups (see Table 2.1 for adjusted and unadjusted sample sizes, by gender and widowhood status, across all waves of data collection).[2]

As with all multi-wave surveys, the issue of selective attrition warrants attention. If persons who failed to participate in the follow-up interviews are significantly different from those who did participate, then the study find-

[1]The 1,532 married persons interviewed at baseline include 423 married couples, or 846 persons for whom complete data were collected from both self and spouse. This design feature enables researchers to undertake couple-level analyses, as well as to explore spousal concordance in terms of their evaluation of the marriage and both own and spouse's health.
[2]The variation in the number of controls interviewed at the 6- and 18-month follow-up interviews is due solely to the availability of funding.

TABLE 2.1

Unweighted and Weighted Sample Sizes, by Widowhood Status and Gender, Changing Lives of Older Couples

	Unweighted Sample				Weighted Sample			
	Baseline	Wave 1 (6 mos.)	Wave 2 (18 mos.)	Wave 3 (48 mos.)	Baseline	Wave 1 (6 mos.)	Wave 2 (18 mos.)	Wave 3 (48 mos.)
Total Sample	1,532	333	411	208	1,532	297	370	160
Male	474	46	60	20	725	87	109	25
Female	1,058	287	351	188	807	210	261	135
Widowed		249	198	106		210	168	85
Male		35	29	10		59	51	15
Female		214	169	96		151	117	70
Matched Control		84	213	102		87	202	75
Male		11	31	10		22	58	10
Female		73	182	92		65	144	65

Notes: The weighted sample adjusts for unequal probabilities of selection and differential response rate at baseline.

ings should not be generalized to the overall population of older widowed persons. In past analyses, researchers estimated logistic regression models to identify the correlates of nonparticipation in the Wave 1 and Wave 2 interviews, given that one participated in the prior interview (e.g., Carr, 2004). Gender differences in the sources of attrition also were explored, because widowhood is believed to increase the risk of mortality more for men than women (Kaprio, Koskenuvo, & Rita, 1987). Consequently, men who survive until (and participate in) the CLOC follow-up interviews may have better emotional and physical health than their female counterparts.

The attrition analyses evaluated potential predictors of Wave 1 nonparticipation, including baseline demographic and socioeconomic characteristics, pre-loss marital and nonmarital social support, physical and mental health, and spouse's health. Only three variables were statistically significant predictors of attrition, and these effects did not differ significantly by gender. Age and baseline anxiety increased the odds and home ownership decreased the odds of attrition. In models predicting Wave 2 nonparticipation (given that one participated in the Wave 1 interview), not one variable was a significant predictor ($p \leq .05$) of attrition at Wave 2. Nonetheless, caution should be taken in generalizing CLOC findings to the population at large because older, more anxious, and residentially mobile persons may be underrepresented.

Strengths of the CLOC Study

The CLOC study has several desirable properties that make it an ideal data set for studying the consequences of late life widowhood. First, all interviews with widowed persons (and matched controls) were conducted 6, 18, and 48 months following the death; thus all analyses hold constant the duration of time that has passed since the loss. Second, because the data are prospective and include rich information on the widowed persons, their spouses, and their marital relationship *prior to* the loss, researchers are able to study prospectively changes in psychological and social well-being after the loss. Moreover, it is possible to investigate and identify those factors that both increase one's risk of (or "selection" into) widowhood and that affect adjustment to widowhood. Third, all widowed persons are assigned a same-age and same-sex "matched control" from the baseline sample; therefore, the true effects of widowhood can be differentiated from those related to aging or the passage of time.

Fourth, the CLOC study was designed expressly to explore psychological, behavioral, cognitive, and financial consequences of loss. As such, it includes a wide array of important outcome measures, as well as rich data on the cause,

timing, and circumstances surrounding the late spouse's death (see Table 2.2 for a synopsis of substantive areas included in the study). Fifth, the sample includes both men and women, thus allowing the exploration of gender differences in the experience of widowhood. Finally, the CLOC study includes rich data on both *global* aspects of psychological and social adjustment, such as depression and anxiety, as well as specific *loss-related* outcomes, such as yearning and loss-related anxiety. As noted earlier, specific symptoms and

TABLE 2.2
Changing Lives of Older Couples Content: Selected Demographic, Psychosocial, and Physical Health Measures

Demographics: Age, gender, race, ethnicity, education, immigrant status, place of birth.

Spouse Characteristics: Demographic, health, and employment characteristics.

Living Arrangements: Housing tenure, household roster.

Children: Number, ages, and gender of children; physical proximity, frequency of contact, emotional support, instrumental support, perceived support given, perceived support received, changes in relationships after spousal death.

Occupational History: current employment status, work history, job satisfaction, retirement status, reason for retirement, satisfaction with retirement.

Finances: Income, perceived financial stress, direct costs associated with spousal death, insurance and estate settlement information.

Marital Quality: Marital closeness, conflict, dependence, decision-making.

Social Support: Frequency of contact, emotional support, instrumental support, perceived support given and received, changes in social support after spousal death.

Psychological Assessments: Depression, anxiety, self-esteem, personality, world views.

Religion and Spirituality: Religious affiliation, degree of religiosity, frequency of attendance at services, use of religion for coping, beliefs about the afterlife.

Physical Health: Self-rated physical health, symptoms, illnesses, history of hospitalization, functional limitations with basic and intermediate daily activities, sleep problems, health behaviors (including smoking, exercise, and alcohol use).

Characteristics of Spouse's Death: Age at death, death forewarning, level of pain, spouse's awareness of and understanding of death, perceived attribution for cause of death, degree, intrusiveness and stressfulness of care giving before spouse's death.

Psychological Responses to Death: Grief, anxiety, depression, crying, intrusive thoughts, yearning, despair, perceived personal growth and improvement, meaning-making, attitudes about life and death, loneliness, help-seeking.

Biomarkers and Physical Assessments: Balance, gait, waist-hip ratio, medications checklist, cognition, memory, blood pressure, peak expiratory flow, biomarkers (including creatinine, cholesterol, epinephrine).

behaviors may respond in very different ways to specific aspects of the widowhood transition, and these (potentially) competing effects may cancel out one another when only an aggregate scale is used as an outcome variable.

Other widely used grief scales, such as the Bereavement Index (Jacobs et al., 1986), Present Feelings about Loss (Singh & Raphael, 1981), and Texas Revised Inventory of Grief (Zisook et al., 1982), typically comprise several symptom subscales, such as anger or yearning (see Table 2.3). These subscales respond differently to different aspects of spousal loss, thus the use of an overarching grief scale may conceal patterns among more precise symptoms. Moreover, the CLOC obtains measures of loss-related psychological outcomes at three time points (i.e., at 6, 18, and 48 months following loss), and general psychological outcomes at four time points (i.e., baseline, and at 6, 18, and 48 months following loss). These multiple observations allow researchers to model *trajectories* of psychological symptoms (e.g., Bonanno et al., 2002).

TABLE 2.3
Summary of Items That Contribute to the Grief Scale and Subscales, Changing Lives of Older Couples

Anxiety (α = .71)	Afraid of what is ahead Felt anxious or unsettled Worried about how you would manage your day to day affairs
Despair (α = .64)	Life seemed empty Felt empty inside Felt life had lost its meaning
Shock (α = .77)	Felt in a state of shock Couldn't believe what was happening Felt emotionally numb
Anger (α = .68)	Felt resentful or bitter about death Felt death was unfair Felt anger toward God
Yearning (α = .75)	Longing to have him/her with you Painful waves of missing him/her Feelings of intense pain and grief Feelings of grief or loneliness
Intrusive Thoughts (α = .66)	Difficulty falling asleep, thoughts of him/her kept coming into your mind Tried to block out memories or thoughts of him/her Couldn't get thoughts about him/her out of my head
Grief (α = .88)	[All 19 items above]

The chapters presented in this volume take advantage of the unique design features of the CLOC, and explore questions such as how, why, and for whom does spousal loss affect physical health? What is the time course of grief symptoms experienced by the recently bereaved? To what extent do psychological reactions to loss reflect adjustment to secondary stressors, such as financial strain, or changes in one's social roles and relationships? The answers to these questions have important implications for policy and practice, and will provide the foundation for future generations of research on spousal bereavement in late life.

REFERENCES

Alwin, D. F., & Campbell, R. T. (2001). Quantitative approaches: Longitudinal methods in the study of human developing and aging. In R. H. Binstock & L. K. George (Eds.), *Handbook of aging and the social sciences* (5th ed., pp. 22–43). New York: Academic Press.

Aneshensel, C. S., Rutter, C. M., & Lachenbruch, P. A. (1991). Competing conceptual and analytic models: Social structure, stress, and mental health. *American Sociological Review, 56,* 166–178.

Arbuckle, N. W., & deVries, B. (1995). The long-term effects of later life spousal and parental bereavement on personal functioning. *The Gerontologist, 35,* 637–647.

Avison, W. R., & Turner, R. J. (1988). Stressful life events and depressive symptoms: Disaggregating the effects of acute stressors and chronic strains. *Journal of Health and Social Behavior, 29,* 253–264.

Baltes, P., Smith, J., & Staudinger, U. (1992). Wisdom and successful aging. In T. Sonderegger (Ed.), *Nebraska symposium on motivation* (pp. 103–121). Lincoln: University of Nebraska Press.

Baron, R. M., & Kenney, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173–1182.

Barry, L. C., Kasl, S. V., & Prigerson, H. G. (2002). Psychiatric disorders among bereaved persons: The role of perceived circumstances and preparedness for death. *American Journal of Geriatric Psychiatry, 10,* 447–457.

Berardo, F. M. (1970). Survivorship and social isolation: The case of the aged widower. *Family Coordinator, 19,* 11–25.

Blazer, D. G. (1996). Epidemiology of psychiatric disorders in late life. In E. W. Busse & D. G. Blazer (Eds.), *The American Psychiatric Press textbook of geriatric psychiatry* (2nd ed., pp. 155–171). Washington, DC: American Psychiatric Press.

Bonanno, G. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely averse events? *American Psychologist, 59,* 20–28.

Bonanno, G. A., & Kaltman, S. (1999). Toward an integrative perspective on bereavement. *Psychological Bulletin, 125*, 760–776.

Bonanno, G. A., & Kaltman, S. (2001). The varieties of grief experience. *Clinical Psychology Review, 21,* 705–734.

Bonanno, G. A., Wortman, C. B., Lehman, D. R., Tweed, R. G., Haring, M., Sonnega, J., et al. (2002). Resilience to loss and chronic grief: A prospective study from preloss to 18-months postloss. *Journal of Personality and Social Psychology, 83,* 1150–1164.

Bonanno, G. A., Wortman, C. B., & Nesse, R. M. (2004). Patterns of resilience and maladjustment before and after the death of a spouse. *Psychology and Aging, 19,* 260–271.

Bruce, M. L., Kim, K., Leaf, P. J., & Jacobs, S. (1990). Depressive episodes and dysphoria resulting from conjugal bereavement in a prospective community sample. *American Journal of Psychiatry, 157,* 608–611.

Calhoun, L. G., & Allen, B. G. (1991). Social reactions to the survivor of a suicide in the family: A review of the literature. *Omega: The Journal of Death and Dying, 20,* 265–272.

Campbell, S., & Silverman, P. R. (1996). *Widower: When men are left alone.* Amityville, NY: Baywood Publishing.

Campbell, D. T., & Stanley, J. C. (1966). *Experimental and quasi-experimental design for research.* Chicago: Rand McNally.

Carr, D. (2003). A 'good death' for whom? Quality of spouse's death and psychological distress among older widowed persons. *Journal of Health and Social Behavior, 44,* 215–332.

Carr, D. (2004). Gender, pre-loss marital dependence and older adults' adjustment to widowhood. *Journal of Marriage and Family, 66,* 220–235.

Carr, D., House, J. S., Kessler, R. C., Nesse, R., Sonnega, J., & Wortman, C. B. (2000). Marital quality and psychological adjustment to widowhood among older adults: A longitudinal analysis. *Journal of Gerontology: Social Sciences, 55,* S197–S207.

Carr, D., House, J. S., Wortman, C. B., Nesse, R., & Kessler, R. C. (2001). Psychological adjustment to sudden and anticipated spousal death among the older widowed. *Journal of Gerontology: Social Sciences, 56,* S237–S248.

Carstensen, L., & Turk-Charles, S. (1994). The salience of emotion across the adult life span. *Psychology and Aging, 9,* 259–264.

Dex, S. (1995). Reliability of recall data: A literature review. *Bulletin de Methodologie Sociologique, 49,* 58–89.

Diener, E., Sandvik, E., & Larsen, R. J. (1985). Age and sex effects for emotional intensity. *Developmental Psychology, 21,* 542–546.

Dimond, M., Lund, D. A., & Caserta, M. S. (1987). The role of social support in the first two years of bereavement in an elderly sample. *The Gerontologist, 27,* 599–604.

Dohrenwend, B. P., Levav, I., & Shrout, P. E. (1992). Socioeconomic status and psychiatric disorders: The causation-selection issue. *Science, 255,* 946–951.

Farnsworth, J., Pett, M. A., & Lund, D. A. (1989). Predictors of loss management and well-being in later life widowhood and divorce. *Journal of Family Issues, 10,* 102–121.

Ferraro, K. F., & Barresi, C. M. (1982). The impact of widowhood on the social relations of older persons. *Research in Aging, 4,* 227–247.

Fields, J., & Casper, L. M. (2001). *America's families and living arrangements: March 2000* (Current Population Reports, P20–537). Washington, DC: U.S. Census Bureau.

Fooken, I. (1985). Old and female: Psychosocial concomitants of the aging process in a group of older women. In J. Munniches, P. Mussen, E. Olbrich, & P. G. Coleman (Eds.), *Life span and change in a gerontological perspective* (pp. 87–101). Orlando, FL: Academic Press.

Frantz, T. T., Farrell, M., & Trolley, B. C. (2001). Positive outcomes of losing a loved one. In R. A. Neimeyer (Ed.), *Meaning reconstruction and the experience of loss* (pp. 191–209). Washington, DC: American Psychological Association.

Futterman, A., Gallagher, D., Thompson, L. W., Lovett, S., & Gilewski, M. (1990). Retrospective assessment of marital adjustment and depression during the first two years of spousal bereavement. *Psychology and Aging, 5,* 277–223.

Gaitz, C. M., & Scott, J. (1972). Age and the measurement of mental health. *Journal of Health and Social Behavior, 13,* 55–67.

George, L. K. (1993). Sociological perspectives on life transitions. *Annual Review of Sociology, 19,* 353–373.

Gerstel, N., Riessman, C. K., & Rosenfeld, S. (1985). Explaining the symptomatology of separated and divorced women and men: The role of material conditions and social networks. *Social Forces, 64,* 84–101.

Gilewski, M. J., Farberow, N. L., Gallagher, D. E., & Thompson, L. W. (1991). Interaction of depression and bereavement on mental health in the elderly. *Psychology and Aging, 6,* 67–75.

Ha, J., Carr, D., Utz, R. & Nesse, R. (2005). Older adults' perceptions of intergenerational support after widowhood: How do men and women differ? *Journal of Family Issues,*

Hatch, L. R. (2000). *Beyond gender differences: Adaptations to aging in life course perspective*. Amityville, NY: Baywood Publishing.

Heckman, J. J. (1979). Sample selection bias as a specification error. *Econometrica, 47,* 153–161.

Heckman, J., & Singer, B. (1984). A method for minimizing the impact of distributional assumptions in econometric models for duration data. *Econometrica, 52,* 271–320.

Heinemann, G., & Evans, P. (1990). Widowhood: loss, change, and adaptation. In T. Brubaker (Ed.), *Family relationships in later life* (pp. 142–167). Beverly Hills, CA: Sage.

Hirschfield, R. M., Klerman, G. L., Lavori, P., Keller, M. B., Griffith, P., & Coryell, W. (1989). Premorbid personality assessments of first onset of major depression. *Archives of General Psychiatry, 46,* 345–350.

Hochschild, A. (1979). Emotion work, feeling rules, and social support. *American Journal of Sociology, 85,* 551–573.

Holmes, T., & Rahe, R. (1967). The social readjustment scale. *Journal of Psychosomatic Research, 11,* 213–218.

Horwitz, A. V. (2002). Outcomes in the sociology of mental health and illness: Where have we been and where are we going? *Journal of Health and Social Behavior, 43,* 143–151.

Horwitz, A. V., White, H. R., & Howell-White, S. (1996). The use of multiple outcomes in stress research: A case study of gender differences in responses to marital dissolution. *Journal of Health and Social Behavior, 37,* 278–291.

House, J. S. (1986). Americans' *Changing Lives: Wave I, 1986* [Computer file]. Ann Arbor, MI: Survey Research Center [producer], 1989. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 1990.

Hyman, H. H. (1983). *Of time and widowhood: Nationwide studies of enduring effects.* Durham, NC: Duke University Press.

Jacobs, S., Hansen, F., Berkman, L., Kasl, S., & Ostfeld, A. (1989). Depressions of bereavement. *Comprehensive Psychiatry, 31,* 218–224.

Jacobs, S., Kasl, S., & Ostfeld, A. (1986). The measurement of grief: Bereaved versus non-bereaved. *The Hospice Journal, 2,* 21–36.

Jahoda, M. (1958). *Current concepts of positive mental health*. New York: Basic.

Kaprio, J., Koskenuvo, M., & Rita, H. (1987). Mortality after bereavement: A prospective study of 95,647 widowed persons. *American Journal of Public Health, 77,* 283–287.

Kessler, R. C. (1979). Stress, social status, and psychological distress. *Journal of Health and Social Behavior, 20,* 259–273.

Kessler, R. C. (2002). The categorical versus dimensional assessment controversy in the sociology of mental illness. *Journal of Health and Social Behavior, 43,* 171–188.

Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eshelman, S., et al. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. *Archives of General Psychiatry, 51,* 8–19.

Kraajj, V.E., Arensman, E., & Spinhoven, P. (2002). Negative life events and depression in elderly persons: A meta-analysis. *Journal of Gerontology: Medical Sciences, 57A,* M87–M94.

Kubler-Ross, E. (1969). *On death and dying.* New York: Springer.

Lawton, M., Kleban, M. H., Rajagopal, D., & Dean, J. (1992). Dimensions of affective experience in three age groups. *Psychology and Aging, 7,* 171–184.

Lee, G. R., DeMaris, A., Bavin, S., & Sullivan, R. (2001). Gender differences in the depressive effect of widowhood in later life. *Journal of Gerontology: Social Sciences, 56,* S56–S61.

Lee, G. R., Willetts, M. C., & Seccombe, K. (1998). Widowhood and depression: Gender differences. *Research on Aging, 20*(5), 611–630.

Lehman, D. R., Wortman, C. B., & Williams, A. F. (1987). Long-term effects of losing a spouse or child in a motor vehicle crash. *Journal of Personality and Social Psychology, 52,* 218–231.

Little, R. J., & Rubin, D. B. (1987). *Statistical analysis with missing data.* New York: Wiley.

Little, R. J., & Schenker, N. (1995). Missing data. In G. Arminger, C. C. Clogg, & M. E. Sobel (Eds.), *Handbook of statistical modeling for the social and behavioral sciences* (pp. 39–75). New York: Plenum.

Lopata, H. Z. (1973). *Widowhood in an American city.* Cambridge, MA: Schenkman.

Lund, D. A., Caserta, M. S., & Dimond, M. F. (1986). Gender differences through two years of bereavement among the elderly. *The Gerontologist, 26,* 314–320.

Lund, D. A., Caserta, M. S., & Dimond, M. F. (1989). Impact of spousal bereavement on the subjective well-being of older adults. In D. A. Lund (Ed.), *Older bereaved spouses* (pp. 3–15). New York: Hemisphere.

Lund, D. E., Caserta, M. S., Dimond, M. F., & Shapper, S. K. (1989). Competencies, tasks of daily living and adjustments to spousal bereavement in later life. In D. A. Lund (Ed.), *Older bereaved spouses* (pp. 135–152). New York: Hemisphere.

Lund, D. A., Dimond, M. F., Caserta, M. S., Johnson, R. J., Poulton, J. L., & Connelly, J. R. (1985–1986). Identifying elderly with coping difficulties after two years of bereavement. *Omega: The Journal of Death and Dying, 16,* 213–224.

Marris, P. (1958). *Widows and their families.* London: Routledge.

Martin, T. L., & Doka, K. J. (2000). *Men don't cry . . . women do: Transcending gender stereotypes of grief*. Philadelphia: Brunner/Mazel.

Mastekaasa, A. (1992). Marriage and psychological well-being: Some evidence on selection into marriage. *Journal of Marriage and Family, 54,* 901–911.

McCrae, R. R., & Costa, P. T. (1993). Psychological resilience among widowed men and women: A 10-year follow-up of a national sample. In M. S. Stroebe, W. Stroebe, & R. O. Hansson (Eds.), *Handbook of bereavement: Theory, research, and intervention* (pp. 196–207). Cambridge: Cambridge University Press.

McDonough, P., Williams, D. R., House, J. S., & Duncan, G. J. (1999). Gender and the socioeconomic gradient in mortality. *Journal of Health and Social Behavior, 40,* 17–31.

Mirowsky, J. & Ross, C. E. (2002). Measurement for a human science. *Journal of Health and Social Behavior, 43,* 152–170.

Morgan, L. A. (1991). *After marriage ends: Economic consequences for midlife women.* Newbury Park, CA: Sage.

Mott, F. L. (2002). Looking backward: Post-hoc reflections on longitudinal studies. In E. Phelps, F. F. Furstenberg, & A. Colby (Eds.), *Looking at lives: American longitudinal studies of the twentieth century* (pp. 61–86). New York: Russell Sage.

Mroczek, D. K., & Kolarz, C. M. (1998). The effect of age on positive and negative affect: A developmental perspective on happiness. *Journal of Personality & Social Psychology, 75,* 1333–1349.

Neugarten, B., & Hagestad, G. O. (1976). Age and the life course. In G. Binstock & E. Shanas (Eds.), *Handbook of aging and the social sciences* (pp. 35–55). New York: Van Nostrand Reinhold.

Nolen-Hoeksema, S., & Ahrens, C. (2002). Age differences and similarities in the correlates of depressive symptoms. *Psychology and Aging, 17,* 116–124.

Nolen-Hoeksema, S. & Davis, C. G. (2001). Positive responses to loss: Perceiving benefits and growth. In C. R. Snyder and S. J. Lopez (Eds.), *Positive Psychology* (pp. 598–607). New York: Oxford University Press.

Nolen-Hoeksema, S., & Davis, C. G. (2004). Theoretical and methodological issues in the assessment and interpretation of post-traumatic growth. *Psychological Inquiry*, 15, 60–65.

Norris, F. H., & Murrell, S. A. (1990). Social support, life events, and stress as modifiers to bereavement by older adults. *Psychology of Aging, 5,* 429–436.

O'Bryant, S. L. (1991). Older widows and independent lifestyles. *International Journal of Aging and Human Development, 32,* 41–51.

Parkes, C. M. (1965). Bereavement and mental illness: Part I, A clinical study of the grief of bereaved psychiatric patients. *British Journal of Medical Psychology, 38,* 1.

Pearlin, L. I. (1982). The social contexts of stress. In L. Goldberger & S. Breznitz. (Eds.), *Handbook of stress* (pp. 367–379). New York: Free Press.

Pearlin, L. I., & Lieberman, M. (1979). Social sources of emotional distress. In R. Simmons (Ed.), *Research in community and mental health* (pp. 217–248). Greenwich, CT: JAI Press.

Peters, A., & Liefbroer, A. C. (1997). Beyond marital status: Partner history and well-being in old age. *Journal of Marriage and the Family, 56,* 687–699.

Preston, S., & Taubman, P. (1994). Socioeconomic differences in adult mortality and health status. In L. G. Martin & S. H. Preston (Eds.), *Demography of aging* (pp. 279–318). Washington, DC: National Academy Press.

Prigerson H. G., Frank, E., Kasl, S. V., Reynolds, C. F., Anderson, B., Zubenko, G. S., et al. (1995). Complicated grief and bereavement-related depression as distinct disorders: Preliminary empirical validation in elderly bereaved spouses. *American Journal of Psychiatry, 152,* 22–30.

Prigerson, H. G., & Jacobs, S. C. (2001). Traumatic grief as a distinct disorder: A rationale, consensus criteria, and a preliminary empirical test. In M. S. Stroebe & R. O. Hansson (Eds.), *Handbook of bereavement research: Consequences, coping, and care* (pp. 613–45). Washington, DC: American Psychological Association.

Prigerson, H. G., Shear, M. K., Jacobs, S. C., Reynolds, C. F., Maciejewski, P. K., Davidson, J. R. et al. (1999). Consensus criteria for traumatic grief: A preliminary empirical test. *British Journal of Psychiatry, 174,* 67–73.

Rabkin, J. G., & Streuning, E. L. (1976). Life events, stress, and illness. *Science, 194,* 1013–1020.

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1,* 385–401.

Raphael, B., Minkov, C., & Dobson, M. (2001). Psychotherapeutic and pharmacological intervention for bereaved persons. In M. S. Stroebe & R. O. Hansson (Eds.), *Handbook of bereavement research: Consequences, coping, and care* (pp. 587–612). Washington, DC: American Psychological Association.

Reed, M. D. (1998). Predicting grief symptomatology among the suddenly bereaved. *Suicide & Life-Threatening Behavior, 28,* 285–301.

Rieker, P., & Bird, C. E. (2000). Sociological explanations of gender differences in mental and physical health. In C. Bird, P. Conrad, & A. Fremont (Eds.), *Handbook of Medical Sociology* (5th ed., pp. 98–113). New York: Prentice-Hall.

Robins, L. N., & Regier, D. A. (Eds.). (1990). *Psychiatric disorders in America: The Epidemiological Catchment Area Study.* New York Free Press.

Ross, C. E., & Mirowsky, J. (1995). Sex differences in distress. *American Sociological Review, 60,* 450–468.

Rost, K., Smith, R., Matthews, D. B., & Guise, B. (1994). The deliberate misdiagnosis of major depression in primary care. *Archives of Family Medicine, 3,* 333–337.

Ryff, C. D., & Singer, B. H. (1998). The contours of positive human health. *Psychological Inquiry, 8,* 1–28.

Rynearson, E. K. (1984). Bereavement after homicide: A descriptive study. *American Journal of Psychiatry, 141,* 1452–1454.

Sanders, C. M. (1993). Risk factors in bereavement outcome. In M. S. Stroebe & W. Stroebe (Eds.), *Handbook of bereavement: Theory, research, and intervention* (pp. 255–267). Cambridge, England: Cambridge University Press.

Schuster, T., & Butler, E. (1989). Bereavement, social networks, social support, and mental health. In D. A. Lund (Ed.), *Older bereaved spouses: Research with practical applications* (pp. 55–68). New York: Hemisphere.

Schwarz, N., Park, D., Knauper, B., & Sudman, S. (Eds.). (1999). *Cognition, aging and self-reports.* Philadelphia: Psychology Press.

Scott, J., & Alwin, D. F. (1998). Retrospective versus prospective measurement of life histories in longitudinal research. In J. Z. Giele & G. H. Elder, Jr. (Eds.), *Crafting life studies: Intersection of personal and social history* (pp. 98–127). Newbury Park, CA: Sage Publications.

Sherbourne, C., Meredith, L., Rogers, W., & Ware, J. (1992). Social support and stressful life events: Age differences in their effects on health-related quality of life among the chronically ill. *Quality of Life Research, 1,* 235–246.

Simon, G. E., & Von Korff, M. R. (1992). Reevaluation of secular trends in depression rates. *American Journal of Epidemiology, 135,* 1411–1422.

Silverman, P. (1986). *Widow to widow.* New York: Springer.

Singh, B., & Raphael, B. (1981). Post disaster morbidity of the bereaved: A possible role for preventive psychiatry. *Journal of Nervous and Mental Disease, 169,* 203–212.

Stacey, C. A., & Gatz, M. (1991). Cross-sectional age differences and longitudinal change on the Bradburn affect balance scale. *Journal of Gerontology: Psychological Sciences, 46,* 76–78.

Stroebe, M. S., Hansson, R. O., & Stroebe, W. (1993). Contemporary themes and controversies in bereavement research. In M. S. Stroebe, W. Stroebe, & R. O. Hansson (Eds.), *Handbook of bereavement: Theory, research, and intervention* (pp. 457–476). Cambridge, England: Cambridge University Press.

Stroebe, M. S., & Stroebe, W. (1983). Who suffers more? Sex differences in health risks of the widowed. *Psychological Bulletin, 93*(2), 279–301.

Thoits, P. (1983). Dimensions of life events that influence psychological distress. In H. B. Kaplan (Ed.), *Psychosocial stress: Trends in theory and research* (pp. 33–103). New York: Academic.

Thompson, L. W., Gallagher, D., Cover, H., Galewski, M., & Peterson, J. (1989). Effects of bereavement on symptoms of psychopathology in older men and women. In D. A. Lund (Ed.), *Older bereaved spouses: Research with practical applications* (pp. 17–24). New York: Hemisphere.

U.S. Bureau of the Census (1996). *Statistical abstract of the United States: 1996* (116th ed.). Washington, DC: U.S. Government Printing Office.

Umberson, D. (1987). Family status and health behaviors: Social control as a dimension of social integration. *Journal of Health and Social Behavior, 28*, 306–319.

Umberson, D., & Williams, K. (1999). Family status and mental health. In C. S. Aneshensel & J. C. Phelan (Eds.), *Handbook of the sociology of mental health* (pp. 225–254). New York: Kluwer Academic.

Umberson, D., Wortman, C. B., & Kessler, R. C. (1992). Widowhood and depression: Explaining long-term gender differences in vulnerability. *Journal of Health and Social Behavior, 33,* 10–24.

Utz, R., Reidy, E., Carr, D., Kessler, R. C., Nesse, R. M., & Wortman, C. B. (2004). Changes in housework following widowhood: A story of gender differences and dependence on adult children. *Journal of Family Issues, 25,* 683–712.

Utz, R., Carr, D., Nesse, R., & Wortman, C. B. (2002). The effect of widowhood on older adults' social participation: An evaluation of activity, disengagement, and continuity theories. *The Gerontologist, 42,* 522–533.

Wheaton, B. (1999). Social stress. In C. S. Aneshensel & J. C. Phelan (Eds.), *Handbook of the sociology of mental health* (pp. 277–300). New York: Kluwer Academic.

Wheeler, I. (2001). Parental bereavement: The crisis of meaning. *Death Studies, 25,* 51–66.

Wilcox, S., Everson, K. R., Aragaki, A., Wasserthil-Smooler, S., Mouton, C. P., & Loevinger, B. L. (2003). The effects of widowhood on physical and mental health, health behaviors, and health outcomes: The Women's Health Initiative. *Health Psychology, 22,* 513–522.

Wortman, C. B. (2004). Post-traumatic growth: Progress and problems. *Psychological Inquiry*, *15,* 81–91.

Wortman, C. B., & Silver, R. C. (2001). The myths of coping with loss revisited. In M. S. Stroebe & R. O. Hansson (Eds.), *Handbook of bereavement research: Consequences, coping, and care* (pp. 587–612). Washington, DC: American Psychological Association.

Zautra, A. J., Reich, J. W., & Guarnaccia, C. A. (1989). Some everyday life consequences of disability and bereavement for older adults. *Journal of Personality and Social Psychology, 59,* 550–561.

Zisook, S., Chentsova-Dutton, Y., & Shuchter, S. R. (1998). *PTSD following bereavement. Annals of Clinical Psychiatry, 10,* 157–163.

Zisook, S., DeVaul, R., & Click, M. (1982). Measuring symptoms of grief and bereavement. *American Journal of Psychiatry, 139,* 1590–1593.

Zisook, S., Paulus, M., Shuchter, S. R., & Judd, L. L. (1997). The many faces of depression following spousal bereavement. *Journal of Affective Disorders, 45*(1–2), 85–94.

Zisook, S., & Shuchter, S. R. (1991). Depression through the first year after the death of a spouse. *American Journal of Psychiatry, 148,* 1346–1352.

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