

Depression as a Mediator Between Spousal Bereavement and Mortality from Cardiovascular Disease: Appreciating and Managing the Adverse Health Consequences of Depression in an Elderly Surviving Spouse

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Abstract: Bereavement in the elderly is becoming a more frequent phenomenon as a result of the aging of the population. The death of an elderly spouse increases psychologic morbidity, particularly depressive symptoms, as well as mortality. Depression increases the risk of death independent of age or bereavement, and can thus exacerbate the health effects of losing a spouse. This magnifier effect is especially pernicious because bereavement and depression both tend to increase cardiovascular mortality rates. Primary care physicians should be alert for signs of mood disorders in elderly persons who have recently lost a spouse. Potential therapies for depression in an elderly bereaved individual include pharmacologic agents, psychotherapy, and psychosocial support. Data also support the value of encouraging religious patients to continue with spiritual observances. Although these approaches decrease mood disorders, it is not yet clear whether they also reduce the risk of death or cardiovascular disease.

Key Words: bereavement, depression, elderly surviving spouse, mortality

Considerable evidence has been published demonstrating the increased mortality risk in a surviving spouse. However, a personal experience of postbereavement death can impress this phenomenon on the mind much more strongly than epidemiologic data.

Case

This author was giving a talk to a group of hospice chaplains on how grief affects the health of a survivor.

One chaplain entered the room a few moments late, and, from the look on her face, was clearly shaken. During the short walk from the door to her chair, she immediately raised her hand and began to tell her story. The chaplain had just come from the home of an elderly couple she was helping to care for, of whom the wife had been terminally ill and on hospice for several months. Clearly, the wife's death was not unexpected. She had died that very morning, and the chaplain had been called to the home. As the body was being removed from the bed to be taken to the hearse, the surviving husband, who had no known life-threatening illness, died in the chaplain's arms during a comforting embrace.

A sudden and dramatic death such as this one is uncommon after bereavement. More typically, a primary care physician has been taking care of an elderly couple for a long time when one member of the couple dies. A month later, the survivor comes for an office visit and the physician wonders whether there are any special measures that are indicated, such as asking the patient about signs of depression. Although these two situations are very different on the surface, the surviving spouse in front of the physician may have some-

Key Points

- The death of an elderly spouse increases both mortality and psychologic morbidity, particularly depressive symptoms, in survivors.
- Bereavement and depression both tend to increase cardiovascular mortality rates.
- Potential therapies for depression in an elderly bereaved individual include pharmacologic agents, psychotherapy, and psychosocial support.

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thing very important in common with the spouse who died almost immediately after his partner. We can speculate that the (briefly) surviving husband's death was the result of a massive heart attack or stroke precipitated by overwhelming grief and the release of large quantities of stress hormones and neurohormones. Evidence increasingly suggests that many of the same physiologic and biochemical activities that come into play in sudden cardiac death also occur in a more chronic form in depression. This observation assumes enhanced importance because a surviving spouse is at increased risk of depression for up to 2 years after the loss, and the depression can be severe.

Primary care physicians should be vigilant for warning signs of depression in the setting of postbereavement grief. An elderly surviving spouse is already at increased risk of death during the first year after the loss, especially from cardiovascular disease (CVD). Outside the setting of bereavement, depression carries its own increased mortality risk, also strongly connected to CVD. Thus, the presence of depression in an elderly surviving spouse is a risk factor for which primary care physicians should routinely screen. When depression is found, the physician should provide counseling, either personally or by referral. Some evidence supports also prescribing antidepressants in this context. In the words of Rogers and Reich,¹ "In certain cases, grief can reach pathologic depths and can merge with clinical depression, requiring intervention and treatment."

Clinicians should also be aware of personality traits or behaviors that might mitigate or protect against increased depression and mortality rates after the death of a spouse. Two such factors are having an active social support network and a sense of religiosity or spirituality. Evidence suggests that both of these characteristics may have a salutary effect on the postbereavement course. Unfortunately, these potentially beneficial factors do not readily translate into intervention strategies.

Elderly Bereaved Persons Are at Increased Risk of Death, Often From Cardiovascular Disease

More than 30 years ago, Parkes and colleagues² published perhaps the first rigorous study demonstrating an increased risk of death among bereaved spouses, showing that deaths among widowers increased within 6 months of bereavement. Other studies replicated these findings³ so that already in 1977 there were enough data for a review.⁴ Subsequent work largely confirmed the early findings.^{5,6} In the work by Kaprio et al,⁶ a twofold increase in mortality rate was measured. The greatest effect on mortality rate was found soon after spousal bereavement—within 1 week or 1 month.^{5,6}

More recent research⁷ has substantiated the adverse impact of spousal bereavement on mortality rates, in addition, showing that this effect is greater in men. In this analysis,

from 1964 to 1987, among more than 12,000 couples, 1,453 men and 3,294 women lost their spouses. Among the survivors, mortality rates increased the most from 7 to 12 months after the loss, but it remained elevated for more than 2 years. Bereaved men died twice as often as bereaved women: 30% of men compared with 15% of women. Mortality rate was increased even among men with no known illness at the time of spousal loss: Healthy men who lost a wife were twice as likely to die as healthy men who were not bereaved.

Some studies specifically found an increase in cardiac mortality rates. Parkes and colleagues² called their study "broken heart" in reference to the fact that almost half of deaths were due to coronary heart disease (CHD). Kaprio et al⁶ reported the largest increase for ischemic heart disease (IHD), with a relative risk of 2.3 for men and 3.5 for women. Among studies that specifically looked, only Jones⁵ reported no increase in mortality rates from IHD.

These investigations used registries that included adults of all ages. Thus, one cannot conclude that spousal loss uniquely increases mortality rates among the elderly. In fact, Kaprio et al⁶ noted that the increase in IHD was "found in all age groups." However, the phenomenon of a postbereavement increase in mortality rate is especially pertinent to the elderly simply because of demographic patterns. In 1998, 33.5% of Americans over age 65 years were widowed, compared with only 1.8% of individuals under age 65. And because men die at a younger age than women, nearly half of women over age 65 were widows.⁸ This consideration also applies to the findings regarding postbereavement depression described in the next section.

Many Surviving Spouses Have Major Depressive Syndromes

Not only does spousal bereavement increase mortality rates, it also has deleterious effects on psychological health. After the loss of a spouse, a substantial number of bereaved individuals have depressive symptoms. More recently, some investigators have even suggested the presence of posttraumatic stress disorder (PTSD) among some surviving spouses.

In one typical report,⁹ a high rate of depression occurred during the first year after the loss of a spouse—32% at 6 months and 27% at 12 months. In most instances, depression lasted considerably longer than 1 month; it was often associated with anxiety, restlessness, psychomotor retardation, and intense grief. Postloss depression was more common in widows than in widowers and was unrelated to a personal history or family history of depression. In a follow-up to the initial report,¹⁰ these investigators found that during the first year of bereavement, 44% of surviving spouses reported at least one type of anxiety disorder, such as panic disorder and generalized anxiety, associated with depression and severe grief. Zisook and Schuchter¹¹ found similar results: 23% of widows and widowers met symptomatic criteria for a major depressive syndrome at 2 months after their loss.

A more recent investigation¹² focused specifically on depression in the elderly, comparing rates of depression in married or recently bereaved persons over age 70 years. Individuals who had recently lost a spouse had a ninefold higher risk for syndromal depression and a fourfold increased incidence of depressive symptoms. Depressive symptoms could last for up to 2 years after spousal loss. A spectrum of depressive manifestations was also documented among surviving spouses by Zisook et al,¹³ who found that both major depressive episodes and subsyndromal depression were prevalent throughout the first 2 years after bereavement. Persons with major depressive episodes were more likely than were nondepressed subjects to refrain from social activity. Brown et al.¹⁴ also found that depression after late-life spousal bereavement was associated with lower social activity.

Spousal bereavement may even precipitate PTSD. Among 350 widows and widowers, at 2 months after bereavement, criteria for PTSD were met by 10% of survivors whose spouse had died after a chronic illness and by 9% whose spouse had died unexpectedly¹⁵. PTSD was “almost always” associated with comorbid depression and was chronic in approximately 40% of subjects.

Depression Is Associated With Increased Mortality Rates in Older Persons, Particularly From Cardiovascular Disease

A large and convincing body of data tells us that we must pay attention to the high incidence of depression in surviving spouses. We have already seen an increased risk of death for elderly surviving spouses—15 to 30% in the 7 to 12 months after a spouse’s death. Most of these deaths are from CVD events, and it appears not to matter whether the survivor had preexisting CVD. Depression may compound this elevated mortality rate: Extensive evidence demonstrates that depression per se increases overall mortality rates among the elderly. Further research, much of it conducted in the elderly, shows that depression increases mortality rates from CVD overall, as well as increasing the incidence of CVD and mortality rates from new cases of CVD. Although these studies did not use bereavement as an entry criterion, it is reasonable to assume that the findings apply to bereaved persons.

Depression Increases Overall Mortality Rates in Older Persons

Among older adults in a community-based cohort, depression independently predicted death in the short-term, and, in combination with poor self-perceived health, it predicted death at all times evaluated.¹⁶ In a 7-year prospective study of 2,558 Medicare recipients 65 years of age and older, mortality rate was significantly increased among the 3% of older adults with the most severe depressive syndromes.¹⁷ High levels of depressive symptoms were also an independent risk

factor for 6-year mortality rates in community-residing adults >65 years in the Cardiovascular Health Study.¹⁸

A group of Dutch investigators who have been prospectively following a large cohort of older persons reported comparable findings. Over a period of 4 years, major depression was associated with almost a twofold higher risk of death among both men and women.¹⁹ Only a small part of the excess mortality risk was explained by such detrimental health behaviors as smoking and physical inactivity. In a second analysis, with more participants and a longer (6-year) time-frame, major depression was again associated with significant excess mortality rates in both men and women.²⁰

Depression Increases Mortality Rates From Cardiovascular Disease Generally

An extensive meta-analysis suggested that in fact, CVD accounts for much of the increased risk of death among depressed persons.²¹ These investigators reviewed 57 studies of depression and death, focusing on 21 that were most rigorous. A preponderance of data suggested that mortality rates are increased among depressed persons. The investigators concluded, “Depression seems to increase the risk of death by cardiovascular disease, especially in men.”

Penninx et al²² showed that depression is associated with CVD death in older persons. Among 3,701 men and women older than 70 years of age, these investigators identified persons who were newly depressed (depressed at baseline but not at 3 and 6 years before baseline) or chronically depressed (depressed at baseline and at 3 or 6 years before baseline). Relative to subjects who were not depressed at any time during the 6 years before baseline, newly depressed mood was associated in men but not in women, with an approximately twofold increased risk of CVD death and new CVD and CHD events over the ensuing 4 years. Chronic depressed mood was not associated with new CVD events or all-cause death. These findings might suggest that persons with new-onset depression after bereavement might be at higher risk of CVD events and death.

Physiologic Changes Can Explain the Association Between Depression and Cardiovascular Disease

It should not be surprising that grief and depression can lead to cardiac disease and death. In sudden cardiac death, it is accepted that a surge of stress hormones, such as adrenaline and cortisol, as well as catecholamine neurotransmitters, leads to a lethal outcome. Neurohormonal activation, acting chronically, could also underlie cardiac death that occurs in conjunction with depression. Abramson et al,²³ discussing their finding that persons with isolated systolic hypertension were twice as likely to progress to heart failure if they were also depressed, hypothesized that “depression-induced sympathetic nervous system activation” might be a mediating variable between depres-

sion and CHD. Ferketich et al²⁴ suggested that one possible mechanism linking depression to CHD is increased platelet aggregation caused by elevated sympathetic activity.

In a comprehensive review of the experimental and clinical evidence linking stress, including depression, to coronary artery disease (CAD), Rozanski et al²⁵ noted that psychosocial factors can contribute to CAD in two ways: “behavioral mechanisms, whereby psychosocial conditions contribute to a higher frequency of adverse health behaviors, such as poor diet and smoking; and direct pathophysiological mechanisms, such as neuroendocrine and platelet activation.” A fundamental component of the pathophysiology of stress-mediated CAD is excessive sympathetic nervous system activation, which can elevate blood pressure, trigger myocardial ischemia, promote arrhythmogenesis, and stimulate platelet function.

Physicians Should Be Alert for Depression in Elderly Bereaved Individuals and Intervene When Appropriate

Given all this evidence, depression in an elderly surviving spouse should sound an alarm for caregivers. An elderly bereaved individual is already at increased risk for death in the near future. To this risk is now added the risk conferred by depression. We suggest that physicians screen more aggressively for depressive symptoms in bereaved elderly persons and treat depression more often to potentially reduce the risk for heart disease and death.

Pollock and Reynolds²⁶ researched late-life depression extensively. They note that “Depression is often unrecognized and undertreated in a rapidly growing proportion of our population, the elderly.” The stigma of a psychiatric diagnosis and the prominence of concomitant medical disorders in elderly persons often act as obstacles to recognizing depression in these patients. Alert and informed primary care physicians are key to solving this problem, since depressed elderly persons are most likely to consult a primary care physician first.²⁷

However, Reynolds’ group (Harman et al²⁸) has demonstrated that a physician’s ability to recognize symptoms of depression does not always lead to an indicated diagnosis of depression in elderly patients. They found that after controlling for symptom presentation, primary care physicians were 56% less likely to record a diagnosis of depression during visits made by elderly patients.

Much of the research on the detrimental consequences of depression specifically identifies major depression or traumatic grief as the risk factor. In this context, it becomes important to differentiate normal grief from traumatic grief or major depression. One simple schema focuses on the chronicity of vegetative and emotional symptoms of traumatic grief and depression²⁹:

- not taking care of himself or herself as before, loss of good nutrition and grooming

- weight loss, persistent insomnia
- chronic physical complaints
- withdrawal from family and friends, especially if a major change
- persistent lack of interest in activities that were formerly interesting
- feelings of futility or detachment that last for months
- persistent sense of drabness, lack of pleasure from anything

Based on a study of 82 recently widowed elderly individuals, Prigerson and colleagues³⁰ derived seven factors that differentiated traumatic grief from bereavement-related depression: searching, yearning, preoccupation with thoughts of the deceased, crying, disbelief regarding the death, feeling stunned by the death, and lack of acceptance of the death. A more detailed and technical set of criteria for traumatic grief, along with a rationale, can be found in Prigerson et al.³¹

It is important to distinguish treating to reduce depression and enhance quality of life from treating to reduce mortality rates, including CVD mortality rates. Although a number of clinical trials of pharmacologic therapy among elderly depressed individuals have demonstrated a reduction in depressive symptoms, so far no data exist to prove that treating depression reduces the risk of CVD incidence or mortality rates. Such trials are underway.

Treating depression in elderly bereaved persons has two goals: symptom relief and reducing the risk of CVD death. Several studies (all in nonelderly, nonbereaved persons) have explored whether treating depression reduces CVD incidence or death. For example, an epidemiologic survey among persons at high risk of myocardial infarction found presumptive evidence that antidepressant therapy may reduce that risk: Smokers who were taking selective serotonin reuptake inhibitors had a significantly lower odds ratio for myocardial infarction than smokers who were not taking SSRIs.³²

Social Support in Bereavement and Cardiovascular Disease

Lack of social support, or relative social isolation, has been identified as a risk factor for reduced survival in many studies, both in general populations and in persons with CAD.^{33,34} Zisook et al¹³ found that bereaved persons with symptomatic major depression are significantly more likely to refrain from social activity, to have disturbed ongoing relationships with friends, and to be less likely to be involved in a new romantic relationship.

Two psychologic intervention trials enrolled bereaved family members or spouses and used psychologic or health utilization end points. Cameron and Parkes³⁵ enrolled relatives of persons who died as a result of cancer in either a standard medical ward or a Palliative Care Unit (PCU). At 1 and 2 weeks after bereavement, relatives of PCU patients reported significantly fewer psychologic symptoms and less

lasting grief and anger. Pain relief and support given by PCU staff to relatives were cited as contributors to the improved outcome.

A 12-month structured program of psychologic support, including support groups, was provided for bereaved spouses by a hospice. Surviving spouses used hospitals and clinics significantly less than spouses in nonintervention and limited-intervention groups.³⁶

Although results to date have not shown reduction in CVD events or mortality rates from psychosocial or pharmacologic antidepressant therapy, such treatments do reduce depressive symptoms. When dealing with depression in bereaved spouses in the hospice setting, we attempt to identify those in a high-risk subgroup that may benefit from contacts at the outset. In such persons, we provide telephone contact and bereavement visits soon after death, and in some cases before death. Attendance at bereavement support group meetings is encouraged. In addition, bereavement letters are mailed every few months. For an empiric foundation for this approach, see Aranda and Milne.³⁷

Spirituality

A number of positive health effects of religious belief or activity have been demonstrated in general populations and in bereaved persons. Koenig and colleagues³⁸ showed that older persons who attended religious services had significantly longer survival over a 6-year period. Also in older persons, private religious activities prolonged survival, but only in unimpaired persons.³⁹ Among those impaired in activities of daily living, mortality rate was significantly increased compared with those who were unimpaired in activities of daily living, independent of participation in private religious activity. A meta-analysis of data from 42 samples examining the association of religious involvement and all-cause death, performed by the same group, found that religious involvement was significantly associated with lower mortality rates.⁴⁰

Several studies have examined the effects of religious belief among the bereaved. Among conjugally bereaved older widows, strong religious belief was one factor associated with lower psychosocial and/or physical dysfunction.⁴¹ Other properties that predicted better function in the first year after bereavement were strong social support, practice of rituals, belief in control over bereavement, and prior good mental health.

Among 265 recently bereaved adults, higher religious coping scores correlated with better health and lower use of health services.⁴²

Spiritual beliefs may also contribute positively to the resolution of bereavement.⁴³ Among relatives and close friends of persons who died in a British palliative care center, those reporting no spiritual belief had not resolved their grief by 14 months after the death. Participants with strong spiritual beliefs resolved their grief progressively over the same

period. People with low levels of belief showed little change in the first 9 months but thereafter resolved their grief. Differences trended toward significance.

Whether it is possible to translate these findings into interventions remains an open question. Koenig⁴⁴ cautions that physicians should not “prescribe” religious beliefs or activities for health reasons and should not impose religious beliefs on patients or attempt to provide in-depth religious counseling.

Conclusion

Evidence shows clearly that a surviving spouse has a substantially increased risk of death within 2 years after losing a spouse, which is especially true in the elderly. These deaths are often due to cardiovascular events, even in survivors with no known CVD. In addition, there is a substantial incidence of depression in surviving spouses. Depression carries an increased incidence of death from cardiovascular events, perhaps because of physiologic processes similar to those implicated in acute cardiac death—increased release of catecholamines, changes in platelet activation, and higher levels of stress hormones. Physicians should be alert for major depression or traumatic grief in survivors, especially elderly survivors, and, when it is found, should consider intervening with psychotherapy and/or antidepressants. If a physician is uncomfortable managing this problem, referral to a practitioner experienced in this field is appropriate and acceptable.

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