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Long-Term Effects of the Death of a Child on Parents' Adjustment in Midlife

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Abstract

The death of a child is a traumatic event that can have long-term effects on the lives of parents. This study examined bereaved parents of deceased children (infancy to age 34) and comparison parents with similar backgrounds (n = 428 per group) identified in the Wisconsin Longitudinal Study. An average of 18.05 years following the death, when parents were age 53, bereaved parents reported more depressive symptoms, poorer well-being, and more health problems and were more likely to have experienced a depressive episode and marital disruption than were comparison parents. Recovery from grief was associated with having a sense of life purpose and having additional children but was unrelated to the cause of death or the amount of time since the death. The results point to the need for detection and intervention to help those parents who are experiencing lasting grief.

Keywords

bereavement; nonnormative parenting; death of child; parental grief; midlife

Each year, over 50,000 U.S. children die (U.S. National Center for Health Statistics, 2000). The death of a child is one of the most painful events that an adult can experience and is linked to complicated/traumatic grief reactions (Prigerson et al., 1999). For parents, the dissolution of the attachment relationship with the child elicits severe anxiety and other negative emotions associated with loss (Bowlby, 1980). Parents might also experience guilt about having been unable to protect the child (Gilbert, 1997). Furthermore, because the death of a child defies the expected order of life events, many parents experience the event as a challenge to basic existential assumptions (Wheeler, 2001).

In light of the significance of child death as a traumatic experience for parents, research on parental bereavement is more limited than might be expected. Most studies have been clinical

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descriptions of participants in grief support groups (e.g., Compassionate Friends), so the findings likely have been influenced both by the self-selection factors that led individuals to seek this type of help and by the participants' experiences in the support groups. As a result, the findings cannot be generalized to the broader population of bereaved parents. Furthermore, drawing from traditional models of grief resolution that emphasize relatively short-term adaptations, researchers have usually assessed functioning for only a brief period during the acute phase of bereavement. Few studies have examined longer term outcomes, and most that have done so have used retrospective reports, which are subject to distortion when individuals recall their functioning many years earlier (e.g., Nelson & Frantz, 1996; Stehbens & Lascari, 1974).

The purpose of the present study was to examine the life course impacts of parental bereavement in an unselected sample of adults who were studied prospectively from early adulthood, prior to the birth of the child, to middle age, usually many years after the death of the child. We identified bereaved parents who were participants in the Wisconsin Longitudinal Study (WLS; Hauser et al., 1993), a prospective longitudinal study of a random sample of high school graduates surveyed periodically between 1957 and 1992. The WLS contains information about potential impacts in multiple domains of functioning, including psychological well-being, health, social relationships, and occupational and family roles. Furthermore, we evaluated whether circumstances of the death predicted individual variations in midlife functioning.

Research on the impact of bereavement as a trauma has emphasized significant negative psychological and health outcomes. For instance, Stroebe, Stroebe, and Abakoumkin (2005) found that bereaved persons, especially those with extreme emotional loneliness and severe depressive symptoms, are at risk for suicidal ideation. Li, Laursen, Precht, Olsen, and Mortensen (2005) found that bereaved parents, especially mothers, were at increased risk for a first psychiatric hospitalization as compared with nonbereaved parents. In fact, maternal risk of hospitalization remained significantly elevated 5 years or more after the death. Using Danish national registries, these investigators also found that mortality rates were higher among bereaved than nonbereaved parents, particularly for deaths due to unnatural causes (e.g., accidents and suicide) within the first 3 years after the child's death (Li, Precht, Mortensen, & Olson, 2003). Bereavement was associated with long-term mortality due to illness (e.g., cancer) for the mothers, presumably because of stress, a weakened immune system, or poor health behaviors (e.g., smoking, alcohol consumption).

The traumatic impact of bereavement has been shown to extend to social functioning and family life. Difficulties have been noted for parental marital functioning, in particular (Najman et al., 1993). One study indicated that the divorce rates among bereaved parents are as much as eight times the norm (Lehman, Wortman, & Williams, 1987). Although a review of the bereavement literature by Oliver (1999) challenged this conclusion, methodological limitations associated with sampling and difficulties in tracking divorced couples make it impossible to draw clear conclusions about marital disruption from previous research (Murphy, Johnson, Wu, Fan, & Lohan, 2003).

The time course for parental grief is uncertain and can be expected to show great variability. Traditional models that described the grief response (e.g., Lindemann, 1944) proposed that grief reactions should be completed within a few weeks to a few months after a death. However, Becvar's (2000) research, for example, suggested that a more typical time line of grief begins with shock and intense grief for 2 weeks, followed by 2 months of strong grieving, and then a slow recovery that takes about 2 years. Other studies have indicated that even this time line is too short in the situation of a child's death. For example, Murphy et al. (2003) found that parents reported thinking of the death of their child daily 3 and 4 years after the event, and McClowry

et al. (1995) found that parents whose child died of cancer still experienced pain and a sense of loss 7–9 years after the death. Also, emotional ties to deceased children may not be fully severed, and negative emotions might persist despite other forms of positive adaptation (Murphy et al., 2003). Thus, many parents grieve indefinitely (Klass, 1999; Rubin, 1993).

The majority of parents likely accommodate the loss without significant long-term disruption in major life domains; for others, however, "moving on" does not occur smoothly. The extent of disruption and the need for professional help during recovery probably are influenced by the level of preexisting problems and the psychological resources that parents bring to the situation of coping with bereavement (Kazak & Noll, 2004). Among individuals who seek treatment for protracted grief, recent work emphasizes the task of finding meaning in the loss as key to long-term recovery (Neimeyer, 1998). Much of this theory has been based on Frankl's seminal work (1978), in which he described the vast emptiness that bereaved individuals feel as "existential vacuum." Likewise, grief has been described as the loss of an "assumptive world," in that the generalized sense of predictability and stability of the world has been challenged (Emmons, Colby, & Kaiser, 1998; Gilbert, 1997). Accordingly, clinical approaches have emphasized the need to help the survivor find meaning and a sense of purpose for both the deceased's life and his or her own life in order to regain a sense of well-being (Klass, 1999).

Finding meaning in life should be facilitated by engaging in rewarding activities, such as pursuing satisfying work and participating in community and religious organizations (Sherkat & Reed, 1992), or by having another child after the death and investing in relationships with the remaining children (Najman et al., 1993). For example, Videka-Sherman (1982) considered that having another child after the death was a "constructive action" for the parents and found that their doing so was a significant predictor of better psychological adjustment to the loss. However, this strategy might have unexpected costs, as parents with larger families experienced more estrangement, more anger, and less openness as they dealt with the loss of a child (Nelson & Frantz, 1996), perhaps because more children overtaxed their resources.

The current study, which was based on theory and previous research on parental grief, employed a life span developmental approach to examine the long-term adjustment of bereaved parents and to explore the role of finding meaning in life as a potential mechanism of recovery. We used longitudinal data to identify individuals who had lost a child at some point in their own life course and to evaluate the effects of this event on later adult functioning. The availability of family background information in the WLS provided us the unique opportunity to match bereaved mothers and fathers to a comparison group with similar preparenthood characteristics, thereby elucidating differing life trajectories. From the large population sample, we could identify a sufficiently large group of bereaved parents to detect even small effects for a nonclinical sample that was not self selected for this purpose.

The specific hypotheses were as follows:

> *Hypothesis 1:* Although the majority of parents were expected to show effective adaptation to bereavement, there would be evidence of lasting grief in the form of negative psychological, health, social, and occupational functioning in midlife. Specifically, parents who experienced the death of a child would be more likely than would nonbereaved parents to report depressive symptoms, poor psychological well-being, health problems, limited social participation, marital disruption, and limited occupational success. However, because of the search for meaning triggered by grief, which is a critical part of coping with bereavement, we expected that bereaved parents would report a greater sense of purpose in life and more religious participation than would comparison parents.

Hypothesis 2: Recovery from grief would be facilitated by the individual's ability to find a sense of purpose in life, as well as through activities that give life meaning, such as religious participation, social participation, having a satisfying job, having other children at the time of death, and giving birth to a new child after the death. Thus, we expected that, in addition to having direct effects on functioning, these factors would moderate the differences between the bereaved and the comparison parents and would predict less negative functioning (i.e., better recovery) within the bereaved group.

Method

Overview of the WLS

The WLS is an investigation of a random sample of 10,317 men and women who graduated from Wisconsin high schools in 1957 (Hauser et al., 1993). Survey data were collected in 1957, 1975, and 1992, when respondents were age 18, 36, and 53 years, respectively. We focused on midlife functioning in 1992 for participants who had experienced the death of a child between 1957 and 1992.

Participants

We initially identified 530 participants who had reported that one of their children was deceased by the 1992 point of data collection. Data on the age of the child and/or the date of the death were missing for 24 of these cases (5%). Another 78 individuals (15%) were eliminated because, although they had participated in the 1992 telephone interview, they did not complete the 1992 mail survey, which contained the majority of the measures examined in this study. Thus, our sample of bereaved parents totaled 428 individuals. The group consisted of 144 fathers and 284 mothers, which was nearly a 2:1 ratio of women to men who reported experiencing a child death. The men were particularly less likely than were the women to report deaths that occurred during or shortly following childbirth (n = 39 men, 110 women).

To ensure that the bereaved parents were similar to the comparison group on background characteristics first measured in 1957 (when they were age 18), we used the following stratification variables from 1957 to select the comparison group: the occupational prestige scores for the participant's father, family income, and population of the respondent's hometown community. Using the median scores for the bereavement sample to dichotomize these variables, we stratified the remaining WLS participants according to these characteristics. Gender of the participant was used as another stratification variable. We selected a comparison sample by randomly sampling from within each stratum the same number of comparison parents as there were bereaved parents in the stratum, which provided equal representation with the bereaved group across all strata. Also, only individuals who were parents and who had completed both the phone and the mail surveys in 1992 were chosen for this group. Thus, the comparison group (n = 428) consisted of a stratified random sample of 144 men and 284 women who resembled the bereaved group on the family background stratification variables. Two-way (Group × Gender) analyses of variance (ANOVAs) confirmed that the stratification produced two groups that did not differ significantly on the stratification variables or other early background characteristics; the latter included family-of-origin size, total years of education for the father and the mother, and high school IQ score, Fs (1, 854) = 0.00 –1.56, all ps nonsignificant.

The bereavement and comparison groups did not differ significantly on any demographic characteristics assessed in midlife, $F(1, 854) = .19$ –2.11, $p = .15$–.67, $\chi^2(1–3, N = 856) = 0.41$–3.78, $p = .17$–.59. The average age of the participants in 1992 was 52.60 years (SD = 0.56). Most participants (65%) had obtained no additional schooling after high school, whereas 15% had attended some college or earned an associate degree, 11% had earned a bachelor's degree,

and 9% had obtained an advanced degree. The modal number of living children was three, which occurred for 28% of the parents; 38% of the parents had fewer than three children, and 34% had more than three. In 1992, 87% of the parents were married. Consistent with the makeup of Wisconsin's population in 1957, virtually all of the WLS sample (99%) is White. Most parents (93%) reported having a religious affiliation, with 47% Protestant and 40% Catholic, and 48% reported attending religious services at least once per week.

Measures

Depressive symptoms—Depressive symptoms were assessed with the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), a 20-item self-report inventory designed to measure current level of symptoms. Each item asks how many days in the past week the person has experienced depressive symptoms, such as "feeling lonely" and "having crying spells." Items were scored 0 (*0 days*), 1 (*1–2 days*), 2 (*3–4 days*), or 3 (*5–7 days*), so total scores could range from 0 to 60, with a cutoff score of 16 recommended for identifying individuals with clinically significant depressive symptoms (Radloff, 1977). This measure has excellent psychometric properties in studies of midlife and older adults (Gatz & Hurwicz, 1990), $\alpha = .88$ for the present sample. In addition, a random sample of 79% of the participants reported on lifetime occurrence of depressive episodes lasting 2 or more weeks.

Purpose in life and psychological well-being—Participants completed an abbreviated version of Ryff's Psychological Well-Being Scale (Schmutte & Ryff, 1997); it included a subscale that measured the belief that one's life is purposeful, along with five other dimensions of psychological well-being, including autonomy/self-determination, self-acceptance of oneself and one's past life, environmental mastery, personal growth, and positive relations with others. The abbreviated version included in the 1992 WLS mail survey contained 7 of the original 14 items for each subscale, selected because they had the highest factor loadings in previous research. The response format ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). To assess the extent to which the bereaved parents had achieved a sense of purpose in life, we used scores for the abbreviated 7-item Purpose in Life subscale ($\alpha = .78$). Also, to assess other aspects of overall psychological well-being, we used total scores summed across the items from the remaining five subscales ($\alpha = .90$).

Physical health—Global self-perceptions of health were assessed with the question "How would you rate your health overall?" The answer choices ranged from 1 (*very poor*) to 5 (*excellent*). In addition, the participants completed a checklist of physical symptoms, common diseases/chronic health problems, and medical conditions, from which we formed two scales that assessed cardiovascular health problems and musculoskeletal problems. Each scale included four symptoms or conditions, so that scores ranged from 0 to 4. The cardiovascular health problems included chest pains, shortness of breath, diagnosed heart trouble, and high blood pressure. The musculoskeletal problems included aching muscles, stiff/swollen joints, back pain/strain, and diagnosed serious back trouble. Warren, Hoonakker, Carayon, and Brand (2004) demonstrated that these three health indices were associated with socioeconomic and job stress.

Occupational attainment and income—Household income was a combination of the incomes of the respondent and his or her spouse, and occupational attainment was the occupational prestige score from Duncan's Socio-Economic Index (Stevens & Featherman, 1981). Both were measured in 1992.

Social participation—Participation in social organizations was assessed with a count of memberships in a list of 17 possible types of social organizations (e.g., civic groups, sports teams), which is an index of social participation (Seltzer, Greenberg, Floyd, Pettee, & Hong,

2001). Religious participation was assessed with the frequency of the respondent's religious attendance in the past year, recorded on a 6-point scale ranging from 0 (*never*) to 5 (*once a week*).

Marital disruption—All entrances into and exits from marriages were recorded during the entire period of the WLS. We used the record to identify whether the participant had experienced a marital separation or divorce by 1992.

Job satisfaction—Satisfaction with current job in 1992 was rated on a 4-point scale, ranging from 1 (*very dissatisfied*) to 4 (*very satisfied*).

Presence of other children and timing and cause of death—Parents completed a roster of their children that included the birth dates for all children and the date of death for any deceased children. This information indicated whether another child was alive at the time of the death and whether another child was born after the death. Reports on the cause of death were obtained from most parents (n = 384), and these reports showed good agreement (78% exact matches) with data from the National Death Index.

Overview of Analyses

The first set of hypotheses about the effects of bereavement on adjustment and well-being in midlife was evaluated in a series of analyses that contrasted the bereaved and the comparison parents. Variables measured on continuous scales and rating scales were submitted to two-way ANOVAs, with Group (bereaved, comparison) and parent Gender (father, mother) as the two factors. Binary categorical variables were submitted to chi-square tests that evaluated both group and gender differences. The second set of hypotheses about potential predictors and moderators of adjustment for the bereaved parents was evaluated with a series of hierarchical linear and logistic regressions that predicted functioning on the measures of adjustment and well being that differed between the groups. We examined both the main effects of the predictors and their interactions with group membership in order to test for moderation of the effect of bereavement status.

Results

Bereavement Event

The average age of the children at the time of death was 10.23 years (SD = 10.44). Approximately a third (33%) died shortly after birth or in infancy, before the 1st birthday; 20% died between ages 1 and 9, 18% died between ages 10 and 19, and 30% died between ages 20 and 34. The average age of the parent when the child died was 34.87 years (SD = 10.49), with 40% of the sample age 29 or younger, 20% between ages 30 and 39, and 40% between ages 40 and 54. For parents of more than 1 deceased child (n = 42), we used the most recent death prior to the 1992 survey as the focus. At the time of the 1992 survey, the average time since the death was 18.05 years (SD = 10.57), with a range from a few months to 34 years before. According to the *International Classification of Diseases, Ninth Revision* (U.S. Department of Health and Human Services, Centers for Disease Control, 2007) classification of cases for which the cause of death was known, 144 (38%) were caused by complications of pregnancy, childbirth, and the puerperium, or by congenital anomalies. Another 138 children (36%) died from external causes of injury and poisoning, including accidents and suicide, and 102 children (27%) died from illnesses, including neoplasms and other diseases.

Association of Bereavement With Adjustment in Midlife

The mean scores and results of the analyses that contrasted the bereaved and comparison groups on the study variables are given in Table 1. We focused on the group main effects to address the research hypotheses. There were no significant Group × Gender interactions.

Emotional distress, well-being, and physical health—Consistent with the hypothesis about functioning in midlife, a significant group effect for scores on the CES-D indicated that the bereaved parents reported more depressive symptoms than did the comparison parents (d = 0.19; see Table 1). To evaluate the severity of depression, we used the recommended cutoff score of 16 on the CES-D to identify individuals who met or exceeded clinical levels of depressive symptoms. As shown in Table 1, a significantly higher percentage of the bereaved than of the comparison parents met this criterion. Also, there was a significant group difference in the number of parents who reported ever experiencing an episode of depression in adulthood, with the rate for bereaved parents almost twice the rate for the comparison group. Among the bereaved group, 83% of the parents who reported an episode of depression had experienced the episode within 3 years after the death of the child.

Although we expected that the bereaved parents would report a relatively greater sense of purpose in life than would comparison parents, the bereaved parents reported a lower sense of purpose in life (d = 0.17). There also was a significant group effect for overall psychological well-being (d = 0.13). In this case, the lower scores for the bereaved than for the comparison parents were consistent with expectations.

Of the three health variables, only cardiovascular health problems differed across the groups, with the bereaved group reporting more of these problems than did the comparison group (d = 0.12). There was no significant group difference in musculoskeletal problems, and the bereaved group did not evaluate its general health less favorably than did the comparison group.

Marital disruption and social participation—As shown in Table 1, the groups differed significantly in the occurrence of marital disruption in the form of separation or divorce. As expected, the bereaved parents had experienced a higher rate of marital disruption than had the nonbereaved parents. Also as expected, the bereaved group reported higher rates of religious participation than did the comparison group. However, the groups did not differ in levels of participation in social organizations.

Occupational functioning—There was no evidence that the bereaved group experienced significant impairment in occupational functioning. The Duncan Socio-economic Index scores for occupational prestige for the current job did not differ for the groups, and the average current household income was not significantly lower for the bereaved than for the comparison group. Also, the ratings of current job satisfaction were not significantly different for the groups.

Prediction of Functioning and Moderation of Bereavement Effects

To evaluate whether the impact of bereavement would be predicted or moderated by social and psychological resources, we focused on predicting functioning in three domains in which the bereaved group reported more difficulties than did the comparison parents: depressive symptoms, cardiovascular health problems, and marital disruption. The hypothesis was that bereavement would have less negative effects on parents who reported relatively greater purpose in life, religious participation, participation in social organizations, and job satisfaction. Although the groups also differed on psychological well-being, the high correlation of this variable with purpose-in-life scores, $r(808) = .79$, $p < .001$, precluded us from examining additional predictors.

Depressive symptoms—The regression findings predicting depressive symptoms are reported in Table 2. After we had accounted for the main effects of bereaved group status and gender (Step 1), purpose in life, but not the other predictors, contributed significantly to the prediction of depressive symptoms, $\Delta R^2 = .30$, $F_{change}(4, 851) = 88.92$, $p < .001$. Regarding moderation, the significant two-way interaction of Group × Life Purpose, entered after all main effects, indicated that the effects of purpose in life differed for the two groups. However, there also was a significant three-way interaction of Group × Life Purpose × Gender. The entire model with the interactions accounted for 33% of the variance in depressive symptoms, $F(19, 836) = 21.26$, $p < .001$. The significant three-way interaction is portrayed in Figure 1, which shows that although higher levels of purpose in life were associated with lessened depressive symptoms for all groups of parents, the negative slope was greatest for the bereaved fathers and least for the comparison fathers. Accordingly, the highest levels of depressive symptoms occurred for the bereaved parents, particularly fathers, who had relatively low scores for purpose in life.

Cardiovascular health problems—The results for predicting cardiovascular health problems are reported in Table 2. After we had accounted for the main effects of group and gender at Step 1, only purpose in life significantly contributed to the prediction of cardiovascular health problems at Step 2, $\Delta R^2 = .04$, $F_{change}(4, 851) = 7.30$, $p < .001$, with higher scores for purpose in life associated with fewer health problems. There were no significant interactions indicative of moderation of group effects for predicting this outcome. The entire model accounted for 5% of the variance in cardiovascular health problems, $F(19, 836) = 2.31$, $p < .01$.

Marital disruption—The results of the logistic regression that predicted marital disruption are given in Table 3. After we had accounted for the main effects of group and gender in Step 1, the only significant predictor of a lower likelihood of marital disruption was greater religious participation (Step 2). Interestingly, as shown in Table 3, the effect of the bereaved group remained significant after we had accounted for the other predictors, including religious participation. The model, with all main effects, accounted for 11% of the variance in marital disruption, $\chi^2(6, N = 856) = 65.23$, $p < .001$. None of the interactions contributed significantly to the prediction.

Additional children of the bereaved parents—We conducted similar regressions with the bereaved parents to examine whether the presence of other children in the family, born either before or after the death, was associated with resilience or recovery from grief on the same three outcomes: depressive symptoms, cardiovascular health problems, and marital disruption. There were no significant effects in the regressions that predicted depressive symptoms and cardiovascular health problems. For prediction of marital disruption, parents were less likely to experience a marital disruption when they had other living children at the time of the death, $B = -0.52$, $SE = 0.22$, Wald(1) = 5.31, $p < .05$, odds ratio = 0.60.

Cause and Time Since the Death

It was possible that current functioning could be associated with the cause of the death and the length of time since the death. Thus, as a follow-up to the predictions of recovery from grief, we repeated the regression analyses using only the bereavement sample that provided information on the cause of the child's death ($n = 384$) and tested whether the cause of death and time since the death predicted functioning or influenced the effects of the other predictors of recovery from grief. The three cause-of-death categories (infant death, death due to external causes, and death due to illness) were dummy coded, and each was entered into the regressions as a main effect, along with amount of time since the death and the other predictors. Cause and time since the death were associated with each other, in that infant deaths had occurred longer

ago than other deaths, $t(382) = 22.22$, $p < .001$. However, neither cause nor time since the death was associated with any measures of functioning (rs = .09 to .06, all ps nonsignificant). All previous predictive effects remained the same when these variables were included in the regressions.

Discussion

The results extended previous findings about grief for bereaved parents to suggest that the death of a child could be associated with longer lasting difficulties for parents than had been previously described. An average of 18 years after the death, the characteristics that significantly distinguished the bereaved and the nonbereaved parents in this study were consistent with research on shorter term outcomes showing that depressive symptoms are common features of grief (American Psychiatric Association, 2000), that depressive episodes tend to follow the death of a child (Li et al., 2005), and that bereaved parents are at risk for health problems and marital problems (Bohannon, 1991; Parkes, 1998). The effect sizes for the contrasts of the bereaved and nonbereaved parents were generally small, which indicates that most bereaved parents were not experiencing clinical levels of symptoms or substantial disruption in midlife. Instead, the elevated depressive symptoms paired with somewhat poorer well-being and lower sense of life purpose suggested sub-clinical levels of distress. Furthermore, the fact that better functioning was not more likely with greater time since the death indicated that bereavement for a deceased child might contribute to persistent problems lasting over several decades for many parents. Neither traditional conceptualizations of grief as having a time-limited impact followed by a return to normal functioning (e.g., Lindemann, 1944) nor the concept of a traumatic grief reaction (Prigerson et al., 1999) in the form of persistent severe symptoms following a death captures the type of long-term difficulties revealed by the current investigation. Instead, the findings are more consistent with a picture of lasting grief associated with this highly significant, often unexpected, and unexplainable loss.

Whereas short-term grief reactions are generally associated with disruptions in occupational, social, and family roles, these difficulties were not apparent in the current findings. The normative functioning in these areas for the bereaved parents likely reflects recovery and a return to typical roles and activities. In this regard, the contrast with psychological distress and health problems as lasting challenges is striking; it suggests that these negative internal experiences may not be evident in social roles and, thus, may not be recognized by others. Accordingly, clinical work with bereaved parents (e.g., Rando, 1993) has suggested that a source of difficulty for these parents is the failure of family and friends to recognize the need for continued emotional support when individuals return to other life roles and their outward signs of grief are not so apparent.

The nonclinical nature of the sample and, for most parents, the lengthy period since the occurrence of the death likely accounted for our limited ability to identify moderators of bereavement effects. Nevertheless, the regression findings highlighted the importance of finding meaning in life as a key to resilience and recovery from grief. The importance of purpose in life as a predictor of long-term functioning, particularly among the bereaved fathers, was consistent with the clinical literature that has focused on this factor (e.g., Neimeyer, 2001). It is possible that purpose in life was associated with depressive symptoms because a sense of purposelessness is itself a symptom of more general depression. Indeed, the finding that purpose in life did not show expected elevations for the bereaved group and was actually lower for this group than for the comparison group might reflect the downward pull of more general depression in reducing the sense of life purpose. However, purpose in life also predicted better health, which was consistent with its role as a determinant of positive adaptation. Thus, it seems likely that existentially oriented interventions that help bereaved individuals find

meaning in the death and develop a renewed sense of life purpose might help to reduce lasting distress and future health problems.

In a similar vein, the predictive effect of having other children at the time of the death, which was associated with lower chances for marital disruption within the bereaved sample, can be regarded as a way of finding meaning through important life tasks (Videka-Sherman, 1982). The result was consistent with other research that reported lower rates of psychiatric problems for bereaved parents with more children in the family (Li et al., 2005) and confirmed the expected role of involvement in parenting for promoting positive recovery. However, because having other children in the home was more likely in this sample when the death involved an infant child, as opposed to a child who died later in life, it is not clear whether circumstances apart from having additional children accounted for marital stability. For example, deaths involving older children, where attachment bonds would be expected to be stronger, may be more stressful for marital relationships than are infant deaths. Research is needed to disentangle the effects of these circumstances in samples where these confounds are not present.

A curious feature of this investigation is the smaller number of men than number of women in the WLS who reported that a child had died. Several circumstances might have contributed to the imbalanced gender composition of the bereaved group. First, because the men married at older ages than did the women, consistent with social norms, they began having children later; thus, there was a somewhat shorter period during which a child death could have occurred. Second, the higher mortality rate for men than for women meant that fewer men participated in the 1992 wave of data collection and could be included in our sample. There also were more unmarried mothers than unmarried fathers in the WLS sample. Nevertheless, these circumstances would account for only relatively small differences in the numbers of bereaved mothers and fathers, rather than the 2:1 ratio in this sample. Instead, it is possible that men underreported child death as a way of coping with grief. This form of coping could include simply neglecting to acknowledge infant deaths as bereavement events, as suggested by the particularly low frequencies of these reports by men, as well as more active strategies involving either suppressing thoughts about the child or refusing to acknowledge the bereavement to the study interviewer. Interestingly, lower reports by men than by women on child-related conditions are not unique to the situation of child death. In working with interview databases to investigate other stressful parenting experiences, including raising a child who has a developmental disability or severe mental illness (Seltzer et al., 2001), we have consistently obtained less frequent reports of these conditions by men than by women. Because bereavement-related differences were similar for men and for women in this study, it is not clear whether or how underreporting of the event by men might have influenced the findings. However, it raises intriguing questions for future research about how avoidance, suppression, or denial might function as long-term coping strategies under these circumstances.

There were limitations in the design of this study that should be considered by those evaluating the results. One limitation was that the putative moderating mechanisms, which included religious and social participation and the presence of rewarding work, were assessed long after the death and concurrently with the outcomes examined. Although this situation is useful for examining correlates of recovery, the unavailability of measures of these factors either before or at the time of the death might have accounted for the failure to detect significant effects in this study. Another limitation was that recruitment of the cohort sample in one geographic location might have reduced generalizability to other groups. Most notably, racial/ethnic minorities were not represented in the WLS, due to the low numbers of minorities living in Wisconsin at the study's beginning. Thus, ethnocultural differences in attitudes toward death and bereavement (e.g., Hayslip & Peveto, 2005) that might affect long-term adaptation for parents could not be discerned in this sample. There were also limitations associated with the

use of unstandardized and single-item measures, in some cases, which suggest that we should be cautious when interpreting the nonsignificant findings in particular.

Regarding implications for policy and intervention, the findings point to the need for detection and intervention for parents who do not typically present for clinical services. Kazak and Noll (2004) identified three levels of risk for parental bereavement that are likely associated with different needs for professional services. The service recommendations include acknowledgment of the loss in order to facilitate coping for all parents, including those who adapt well; specialized grief interventions for parents who seek help for complicated grief reactions; and intensive, broad-based interventions for highly vulnerable parents who experience multiple serious problems following the death. The relatively high rates of significant current depressive symptoms and cardiovascular health problems, along with a history of marital disruption in our nonclinical sample, might be accounted for by high-risk vulnerable parents, but they also might reflect a need for greater attention to sub-clinical levels of dysfunction in parents who otherwise are functioning well. It seems that these problems are not likely to lead parents to seek specialized interventions focused on bereavement. Furthermore, the lack of empirically supported interventions for parental grief (Kazak & Noll, 2004) leaves open the question of whether long-term problems could be prevented effectively. For example, whereas some form of existentially oriented therapeutic intervention might be helpful for parents who did not initially seek out services, there is a need for empirical investigations to clarify this issue.

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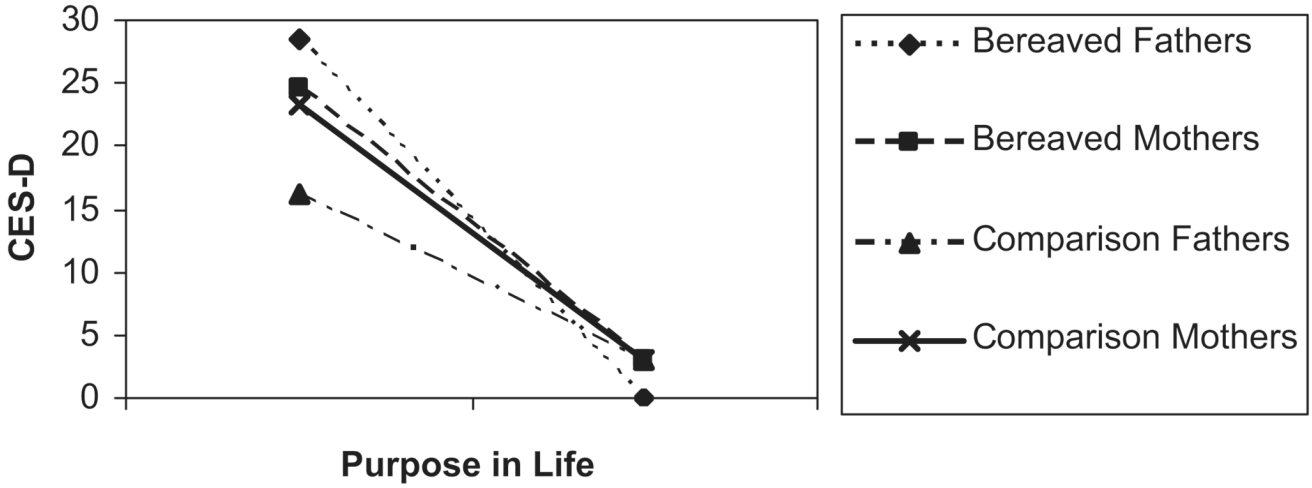

Figure 1.
Prediction of depressive symptoms by purpose in life. CES-D = Center for Epidemiologic Studies Depression Scale.

Table 1

Group Means (SDs) and Differences on Measures of Psychological, Health, Social, and Occupational Functioning

Variable	F/χ^2 test group	Bereaved group	Comparison group
Depressive symptoms	9.40**	9.60 (8.79)	8.05 (7.31)
Clinical elevation (%)	12.17***	19.10	10.60
Episode of depression (%)	21.52***	31.30	15.90
Alcohol symptoms	1.69	0.40 (0.89)	0.32 (0.79)
Purpose in life	6.28**	33.62 (5.71)	34.59 (5.41)
Psychological well-being	5.76*	165.18 (21.59)	168.03 (20.58)
Cardiovascular health problems	4.07*	0.15 (0.42)	0.10 (0.34)
Musculoskeletal health problems	0.24	0.72 (0.98)	0.70 (0.98)
Perceived health	0.28	4.14 (0.64)	4.15 (0.72)
Marital disruption (%)	4.73*	30.40	23.80
Religious participation	4.40*	1.43 (0.78)	1.33 (0.82)
Participation in social organizations	0.10	2.93 (2.26)	2.83 (2.27)
Occupational prestige	0.39	47.73 (22.31)	48.86 (21.72)
Income, 1992 (dollars)	2.49	63,130 (50,426)	69,878 (62,438)
Job satisfaction	0.37	3.42 (0.71)	3.38 (0.67)

Note. Test statistics for continuous variables are Fisher's *F* ratios; tests for categorical variables (percentage scores) are chi-squares.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 2

Prediction of Depressive Symptom Score and Cardiovascular Health Problems for the Bereaved and Comparison Groups

	Depression symptom			Cardiovascular health problem		
Step/predictor	***B***	***SE(B)***	**β**	***B***	***SE(B)***	**β**
Step 1						
Group	1.56	0.56	.10**	−0.04	0.03	.05
Gender	0.72	0.59	.04	−0.03	0.03	−.04
Step 2						
Group	0.72	0.47	.04	0.03	0.03	.04
Gender	1.82	0.52	.11**	−0.03	0.03	−.04
Purpose in life	−0.79	0.05	−.54***	−0.01	0.01	−.19***
Religious participation	0.34	0.30	.03	0.01	0.02	.01
Organizational participation	0.15	0.11	.04	−0.01	0.01	−.04
Job satisfaction	−0.47	0.35	−.04	0.01	0.02	.01
Step 3						
Group × Life Purpose			−.12**			
Step 4						
Group × Gender × Life Purpose			.26**			

Note.

** $p < .01$.

*** $p < .001$, two-tailed.

Table 3

Prediction of Marital Disruption for the Bereaved and Comparison Groups

Step/predictor	*B*	*SE(B)*	Wald	Odds ratio
Step 1				
Group	0.32	0.16	4.14*	1.38
Gender	0.02	0.17	0.01	1.02
Step 2				
Group	0.43	0.17	6.67**	1.53
Gender	0.19	0.18	1.17	1.21
Purpose in life	0.01	0.02	0.01	1.00
Religious participation	−0.76	0.11	49.51***	0.47
Organizational participation	0.04	0.04	0.99	1.04
Job satisfaction	−0.19	0.12	2.44	0.83

Note.

* $p < .05$.

** $p < .01$.

*** $p < .001$, two-tailed.