

Traumatic Grief as a Risk Factor for Mental and Physical Morbidity

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***Objective:** The aim of this study was to confirm and extend the authors' previous work indicating that symptoms of traumatic grief are predictors of future physical and mental health outcomes. **Method:** The study group consisted of 150 future widows and widowers interviewed at the time of their spouse's hospital admission and at 6-week and 6-, 13-, and 25-month follow-ups. Traumatic grief was measured with a modified version of the Grief Measurement Scale. Mental and physical health outcomes were assessed by self-report and interviewer evaluation. Survival analysis and linear and logistic regressions were used to determine the risk for adverse mental and physical health outcomes posed by traumatic grief. **Results:** Survival and regression analyses indicated that the presence of traumatic grief symptoms approximately 6 months after the death of the spouse predicted such negative health outcomes as cancer, heart trouble, high blood pressure, suicidal ideation, and changes in eating habits at 13- or 25-month follow-up. **Conclusions:** The results suggest that it may not be the stress of bereavement, per se, that puts individuals at risk for long-term mental and physical health impairments and adverse health behaviors. Rather, it appears that psychiatric sequelae such as traumatic grief are of critical importance in determining which bereaved individuals will be at risk for long-term dysfunction.*

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Conjugal bereavement has long been considered among the most stressful of all life events (1-5). Given the stress associated with spousal loss, it is not surprising that bereavement greatly increases the risk of psychiatric complications such as depressive symptoms, major depressive episodes (6-10), and anxiety-related symptoms and disorders (11-13). It has been shown that conjugal bereavement is also a risk factor for impaired immune function (2), more physician visits (14), poorer physical health (15-17), increased use of alcohol and cigarettes (8, 12, 18), suicide (17, 19), and mortality (20, 21; K.R. Smith, unpublished data, 1990).

As these findings suggest, a variety of adverse health

outcomes have been examined in the bereavement literature. Nevertheless, few studies have specifically investigated the physical morbidity associated with bereavement, and, to our knowledge, no studies have been conducted to determine the onset of new conditions that result from spousal loss. Previous studies of the impact of bereavement have generally compared bereaved and nonbereaved groups without looking at subgroups of bereaved subjects who may be at particularly high risk for developing symptoms and syndromes of emotional and physical distress. More specifically, the matter of how bereavement-related health outcomes might be mediated by psychiatric symptoms such as traumatic grief has been a neglected topic in bereavement research.

The aim of this study was to examine the effects of symptoms of traumatic grief on subsequent mental and physical health. We propose to build on previous work that found the symptoms of traumatic grief to be distinct from the symptoms of bereavement-related depression and anxiety in late life (22-24). Not only were the symptoms of traumatic grief found to constitute a unique form of emotional distress, but they also were found to be associated with impairments in mental and physical health. The results of recent reports have

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shown that traumatic grief assessed at baseline (between 3 and 6 months after loss) predicted global functional impairments, sleep disturbance, low self-esteem, and sad mood 18 months after loss, after control for baseline levels of depression and time from loss (22). Another study found that traumatic grief assessed 6 months after loss predicted levels of both depression and traumatic grief 18 months after loss when the effects of the 6-month assessment of depression were controlled (24). In a cross-sectional study, we found that subjects in the top 20% of that sample's traumatic grief scores differed significantly from those below that threshold on measures of general health, bodily pain, mental health, physical health, social functioning, and depression (25). The results of these preliminary reports suggest that traumatic grief entails heightened risk for enduring impairment in several domains broadly related to health and quality of life.

Nevertheless, the aforementioned reports on the health consequences associated with traumatic grief could be viewed only as preliminary because of limitations inherent in the data available for those reports. These studies were based on relatively small study groups (sample sizes ranging from 54 to 97 subjects) that met eligibility criteria for an investigation designed to examine sleep physiological changes in major depression. In addition, many of the depressed subjects in these studies had received the antidepressant nortriptyline. The small size, potential selection biases, and use of antidepressant treatment suggested the need for replication through use of a larger, independent, community-based, and untreated study group.

Within this context, the purpose of this study was to examine the effects of traumatic grief on future morbidity and the onset of new conditions among the recently bereaved. In contrast with our prior reports, the current study group was an untreated, community-based, and larger group (N=150) of mid-to-late-life (mean age=62 years, SD=8.3) bereaved individuals. Furthermore, the data available for the present report included a wider spectrum of health measures and allowed us to examine the impact of traumatic grief on health and health care behaviors measured at times further removed from the death. For these reasons, the results obtained from this study could confirm and extend previous work that indicated that symptoms of traumatic grief were associated with significant health risks above and beyond the effects of concurrent levels of bereavement-related depression and anxiety. In addition, the available data allowed the influence of traumatic grief symptoms on subsequent health to be examined after adjustment for age, sex, and prior pathology.

METHOD

Subjects

Respondents were recruited from Yale-New Haven Hospital and the Hospital of St. Raphael. These hospitals serve 90% of the residents of greater New Haven, Conn. Hospital admissions were screened

TABLE 1. Sociodemographic Characteristics of 150 Widows and Widowers

Characteristic ^a	Mean	SD	N	%
Age (years)	62.4	8.3		
Female gender			92	61.3
White race			134	89.3
Number of marriages	1.2	0.4		
Length of most recent marriage (years)	34.5	12.1		
Education (years)	12.0	7.8		

^aMedian annual family income was \$18,000.

to identify individuals, between the ages of 40 and 80 years, whose spouses were admitted with illnesses that could be described as either life-threatening or minor (the latter was a comparison group that was not included in the present study). Of the 1,483 eligible subjects, about 75% (N=1,111) agreed to participate. The 25% who were nonparticipants were equally divided into two groups: either the attending physician of the critically ill patient refused access to the family, or the eligible subject was approached but refused to participate. Nonparticipants did not differ from the participants with respect to age, race, sex, or education.

Following the intake interview, 44% (N=494) of the participants agreed to intensive, face-to-face follow-up interviews, and 55% (N=617) consented only to briefer telephone follow-up interviews. Only subjects from the intensive face-to-face interviews were included in these analyses because traumatic grief, depression, and anxiety were not assessed simultaneously at the 6-month, or any other, telephone interview. The face-to-face interviews were conducted at the time of the spouse's hospital admission and at 6 weeks, 6 months, 13 months, and 25 months after hospitalization of the spouse. Individuals interviewed intensively were younger and more educated than those interviewed more briefly by telephone, but they did not differ with respect to the other assessed background characteristics (e.g., race, sex, income).

Subjects included in the analyses were the 150 individuals who were bereaved by the 6-month interview. Spouses had died from a wide range of unspecified life-threatening conditions that had placed them on the hospital's critical list. The group consisted of 92 women (61%) and 58 men (39%) whose mean age was 62.4 years (SD=8.3). The 150 respondents included in the analyses did not differ from the total group on age, race, sex, depression, or anxiety at study intake. Sociodemographic characteristics of the group are presented in table 1.

Of the 150 bereaved subjects, 135 remained in the study at the 13-month assessment, and 122 remained at the 25-month assessment. Subjects were lost to follow-up because they were too upset (3%, N=5) or ill (1%, N=2) to participate or because of failure to locate them (1%), movement out of the area (1%), death (1%), or other miscellaneous reasons (21%, N=32). Those who dropped out of the study were older and slightly more depressed but did not differ from those retained with respect to levels of anxiety or traumatic grief or any other demographic variables. A more detailed description of the study groups is provided elsewhere (26, 27). Written informed consent was obtained.

Measures

The dependent variables were measured at the 13- and 25-month assessments. Evaluation of physical health outcomes included a trained interviewer's measurement of blood pressure (i.e., diastolic readings above 90 mm Hg or systolic readings above 140 mm Hg were considered high) and the respondent's report of physician diagnoses (i.e., cancer, diabetes, stroke, arthritis, heart attack, and heart trouble). Mental health outcomes included "syndromal" or "case-ness" levels of traumatic grief, depression, and anxiety (see later discussion for details); suicidal ideation; and the interviewer's assessment of the respondent's level of grief. Reported changes in health behaviors such as alcohol, tobacco, and food consumption and activity level were another category of dependent variables, and subject-

tively assessed health outcomes such as sleep impairment, self-rated health, and health difficulties reported at the anniversary of the spouse's death were the remaining group of outcomes regressed on traumatic grief. Although the dependent variables were assessed at 13 and 25 months, the earlier assessments were used to adjust for the respondent's prior health status either by entering baseline status as a control variable (in the linear regression models) or identifying and removing individuals with a prior history of the dependent variable (in the logistic regression models).

The independent variables were assessed at the 6-month interview. We used the 6-month interview for two primary reasons: 1) we previously found that assessments of traumatic grief approximately 6 months after loss were significantly better predictors of dysfunction 18 months after loss than were assessments approximately 3 months after loss (22); and 2) prominent authorities on bereavement, such as Clayton (8), have argued that by 4–6 months after loss, most bereaved people have begun to feel significantly better, which makes therapeutic intervention before that time unwarranted. Consequently, both our earlier results and clinical impressions made by bereavement experts suggest that individuals with elevated traumatic grief scores approximately 6 months after loss would constitute the individuals most at risk of enduring emotional, functional, and physical health difficulties.

Traumatic grief, the focal independent variable, was measured by a modified version of the Grief Measurement Scale (28). The scale was modified to include only the items contained in the Inventory of Complicated Grief (25). The Inventory of Complicated Grief, a scale found to have sound psychometric properties, identifies 19 symptoms that we believe constitute a fairly complete range of cognitions, emotions, and behaviors that define traumatic grief. We changed the name of these symptoms from "complicated" to "traumatic" grief because we considered the latter to capture more precisely the two underlying dimensions of the syndrome (i.e., trauma and separation distress). Preoccupation with thoughts of the deceased, yearning and searching for the deceased, feeling disbelief and stunned by the death, avoidance of reminders of the deceased, auditory and visual hallucinations of the deceased, bitterness and survivor guilt over the death, and symptoms of identification with the deceased are among the core symptoms used to assess traumatic grief in the Inventory of Complicated Grief. In light of the earlier findings indicating the distinctiveness of the symptoms of traumatic grief from those of bereavement-related depression and anxiety, the Inventory of Complicated Grief was designed to exclude depressive and anxiety-related items in order to focus exclusively on the symptoms of traumatic grief.

Thus, for the assessment of traumatic grief in this study we removed depressive (i.e., items from the Center for Epidemiologic Studies Depression Scale [CES-D Scale] and hopelessness items from the Psychiatric Epidemiology Research Interview [PERI] helplessness/hopelessness scale) and anxiety-related items found in the Grief Measurement Scale (28). Grief-related items that were found to be associated with poor adjustment to bereavement (e.g., yearning for and mental images of the deceased, having pain in the same parts of the body as the deceased, preoccupation with thoughts of the deceased) were retained (25). The resulting 11 items were symptoms that closely, but not perfectly, approximated the symptoms found in the Inventory of Complicated Grief (e.g., the symptoms of avoidance of reminders of the deceased, loss of interpersonal trust and concern, feeling the death was unfair, and survivor guilt constituting the notable exceptions of Inventory of Complicated Grief items that were not present in the modified Grief Measurement Scale). The modified Grief Measurement Scale had high internal consistency (mean Cronbach's alpha across the five time points was 0.86; range=0.95 at 6 months to 0.80 at 25 months). While the symptoms of traumatic grief have been shown to have good face, content, and criterion validity (25), a major aim of the present study was to confirm further the predictive validity of traumatic grief.

Other measures entered into the models as control variables were depression, anxiety, age, and sex. Depression was measured at all five interviews with the CES-D Scale (29). Cronbach's alpha for the CES-D Scale at the 6-month assessment was 0.65. Anxiety was assessed with the PERI anxiety scale (30) at all five interviews. Cronbach's alpha for the PERI anxiety scale at the 6-month assessment was 0.74.

Analysis

Changes in psychiatric symptoms over time. We first sought to examine the percentage of subjects who met criteria for caseness of traumatic grief (i.e., score of 32 or higher on the modified Grief Measurement Scale), anxiety (i.e., PERI anxiety scale score of 13 or higher) (13), and depression (i.e., CES-D Scale score of 17 or higher) over time. Repeated measures analyses of variance (ANOVAs) were conducted to determine the effect of time on changes in mean symptom levels of traumatic grief (score on modified Grief Measurement Scale), depression (CES-D Scale score), and anxiety (PERI anxiety scale score). If a significant time effect resulted, we examined the form of this function (e.g., linear, quadratic, cubic). In order to constrain the length of time from loss and to extend the observation period, only respondents who were bereaved by the second-month assessment (N=96) were used in these analyses.

Prediction of health outcomes with survival and regression analyses. Cancer was the only outcome suitable for conducting survival analyses because it alone contained a date of diagnosis. Survival analysis was used to evaluate the cumulative proportion of subjects surviving from the date of the spouse's death to the 25-month assessment without a report of having been diagnosed with cancer by their physician. Subjects who reported cancer before the 6-month assessment of traumatic grief were removed so that the report of cancer would not precede the designation of being a traumatic griever. We computed the survival curves for subjects with high and low levels of traumatic grief by using the Kaplan-Meier method from BMPD Statistical Software Program 1L, Life Tables and Survivor Functions. The survival function between the subjects with high and low levels of traumatic grief was tested by using the Mantel-Cox (log rank) test. Given the lack of statistical power (N=4 new cases of cancer within the defined risk period), we were unable to control for potential confounding factors in these analyses. However, we were able to control for likely confounding factors in the regression analyses described later.

In order to evaluate the longer-term health consequences associated with traumatic grief, scores obtained at the 6-month follow-up interview were used to predict the various health outcomes 13 and 25 months after intake. Continuous outcomes (i.e., suicidal ideation, alcohol consumed, cigarettes smoked, impaired sleep, self-rated health, interviewer's assessment of respondent's grief) were analyzed by using the multiple regression procedure. In these analyses, each health outcome was regressed on a continuous measure of traumatic grief while prebereavement levels of the dependent variable, depression (continuous CES-D Scale score), anxiety (continuous PERI anxiety scale score), age, and sex were controlled.

Dichotomous dependent variables (i.e., heart trouble, high blood pressure, cancer, arthritis, diabetes, stroke; changes in health behaviors such as activity level, eating, and smoking; problems with alcohol; whether the respondent's health and mental state had been affected at the anniversary of the spouse's death and, if so, the type of disturbance [i.e., changes in sleeping or appetite, flu, stomachaches, headaches, aches and pains]; caseness of traumatic grief, depression, and anxiety) were analyzed by using the logistic regression procedure. Each model estimated the effects of a continuous measure of traumatic grief on a single dichotomous health outcome while controlling for depression (continuous CES-D Scale score), anxiety (continuous PERI anxiety scale score), age, and sex. In the logistic regression analyses, those individuals with a prior history of the outcome, with the exception of anniversary functioning, before the 6-month interview were removed. We removed individuals with a prior history in order to obtain the incidence rather than the recurrence of the health outcome. Because of the large number of models that were estimated, we used a more stringent significance threshold ($p < 0.01$) for interpreting the regression results. Probabilities between 0.05 and 0.01 were considered marginally significant for these regression models.

Incidence of health difficulties between the 6- and 25-month assessments. Using Fisher's exact test, we compared rates of the dichotomous health outcomes (e.g., heart trouble) that developed between the 6- and 25-month assessments among those who did and did not meet criteria for caseness of traumatic grief. In contrast with the regression analyses, here we sought to determine whether the rate of development of new disorders was significantly different for those

with high and those with low traumatic grief scores 6 months after intake, regardless of comorbid psychiatric and somatic conditions, age, and sex.

RESULTS

We first examined the change in rates of caseness and mean levels of psychiatric symptoms over time from loss. Then we conducted survival and regression analyses to determine the health risks posed by traumatic grief symptoms 6 months after intake. Finally, we compared the incidence of health problems between 13 and 25 months after intake among those above and below levels of caseness for traumatic grief.

Resolution of Traumatic Grief, Anxiety, and Depression

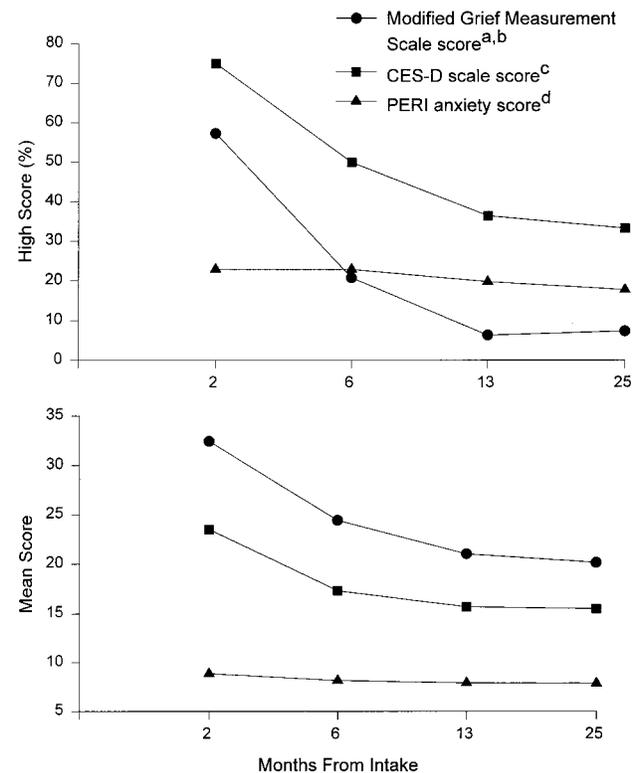
In the upper portion of figure 1, we see that the percentage of those with high levels of traumatic grief declined sharply from 57% at 2 months (just a few weeks after loss for nearly half of these subjects) to 6% at 13 months and then increased to 7% at 25 months from study entry. Those who met criteria for caseness of depression declined from 75% in the immediate weeks after their loss to 36% at 13 months and then to 33% at 25 months after intake. While relatively fewer bereaved subjects at 2 months met criteria for caseness of anxiety, the percentage of cases of anxiety continued to hover around 20% through the second year of bereavement.

The results of the repeated measures ANOVAs (bottom portion of figure 1) revealed significant time effects for mean levels of traumatic grief, depression, and anxiety symptoms (traumatic grief: $F=111.87$, $df=3, 288$, $p<0.0001$; depression: $F=46.35$, $df=3, 243$, $p<0.0001$; anxiety: $F=3.32$, $df=3, 267$, $p<0.05$). Furthermore, the results of the orthogonal decomposition of the time effects for each scale revealed that the mean traumatic grief and depression scores declined quadratically—with steep initial declines followed by decreases in the rate of resolution of symptoms of traumatic grief (test for quadratic function: $F=43.41$, $df=1, 96$, $p<0.0001$) and depression (test for quadratic function: $F=33.03$, $df=1, 81$, $p<0.0001$). By contrast, the anxiety score declined linearly (test for linear function: $F=8.28$, $df=1, 89$, $p<0.01$) and at a much less rapid rate than that exhibited by traumatic grief and depression.

Survival Analyses for Incidence of Cancer

When we entered traumatic grief status in a survival analysis examining the cumulative probability of a report of a new case of cancer between the 6- and 25-month assessments, we found that the cumulative hazard function for development of cancer was significantly higher for respondents who met criteria for caseness of traumatic grief than for those who did not (Mantel-Cox=15.87, $df=1$, $p<0.0001$). In fact, all four cases of cancer occurred in the group with high levels of traumatic grief. Given that subjects who had re-

FIGURE 1. Traumatic Grief, Depression, and Anxiety for 96 Widows and Widowers 2–25 Months After Study Entry



^aTraumatic grief score was obtained by modifying the Grief Measurement Scale score to include only the items defined in the Inventory of Complicated Grief.

^bHigh level of traumatic grief represents a modified Grief Measurement Scale score of 32 or greater.

^cHigh level of depression represents a CES-D Scale score of 17 or greater.

^dHigh level of anxiety represents a PERI anxiety scale score of 13 or greater. Because each of the three scales is based on a different metric, direct comparisons among the mean scores cannot be made.

ported a prior history of cancer were omitted from these analyses, the results reflect the incidence rather than a recurrence of cancer. Although we did not have the statistical power to control for potential confounding factors such as age, those who met criteria for caseness of traumatic grief did not differ significantly from those who represented noncases of traumatic grief with respect to age, education, religion, race, years married, anxiety, or depression at intake.

Prediction of Mental and Physical Health Outcomes

Table 2 reveals that when a conservative significance threshold of $p<0.01$ was adopted, the continuous measure of traumatic grief assessed at 6 months was marginally associated with high systolic blood pressure at 13 months (Wald $\chi^2=3.94$, $p<0.05$; relative risk=1.11). Thus, for each additional increment on the modified Grief Measurement Scale at 6 months, the bereaved individual was 1.11 times more likely to develop high

TABLE 2. Unstandardized Regression Coefficients and Relative Risks for Predictors of Mental and Physical Health Outcomes for Widows and Widowers 13 Months (N=135) and 25 Months (N=122) After Study Entry

Time of Assessment and Dependent Variable ^a	Independent Variable: Traumatic Grief				Model	
	beta	SE	Relative Risk	95% Confidence Interval	Goodness of Fit	df
13 Months						
Physical health outcome: high systolic blood pressure	0.10**	0.04	1.11	1.02–1.20	$\chi^2=10.80^{**}$	5
Mental health outcomes						
Depression	1.00*	0.60	2.72	0.84–8.81	$\chi^2=25.25^\dagger$	5
Suicidal ideation	0.14**	0.07	—	—	$R^2=0.19$	6, 108
Grief (interviewer rated)	0.03**	0.01	—	—	$R^2=0.08$	6, 108
Health behaviors						
Changes in smoking	2.81**	1.51	16.70	0.86–320.40	$\chi^2=12.00^{**}$	5
Changes in eating	1.95***	0.75	7.02	1.62–30.60	$\chi^2=15.30^{***}$	5
Subjectively reported health						
Impaired sleep	0.43*	0.24	—	—	$R^2=0.06$	6, 108
Anniversary reaction	1.74*	1.08	5.72	0.70–47.3	$\chi^2=3.99$	5
25 Months						
Physical health outcome: heart trouble	0.14***	0.05	1.15	1.04–1.27	$\chi^2=11.64^{**}$	5
Mental health outcomes						
Anxiety	0.10**	0.05	0.90	0.82–0.99	$\chi^2=47.85^\dagger$	5
Suicidal ideation	0.06***	0.02	—	—	$R^2=0.08$	6, 103
Grief (interviewer rated)	1.06***	0.29	—	—	$R^2=0.23$	6, 103
Health behavior: problems with alcohol	0.23*	0.13	1.25	0.98–1.63	$\chi^2=7.90$	5

^aEach model simultaneously entered traumatic grief (modified score on the Grief Measurement Scale), depression (CES-D score), anxiety (PERI anxiety score), age, sex, and prior history of the dependent variable reported at baseline in the linear regression model. Logistic regression models were identical to linear regression models with one exception—rather than control for baseline measure of the outcome, the authors removed those individuals who had reported being given a diagnosis of the predicted outcome. They did not control for anniversary functioning.

*p<0.10. **p<0.05. ***p<0.01. †p<0.001.

blood pressure at 13 months, over and above the effects of age and sex. Similarly, a person with a score of 32 on this scale had a 35.5 greater likelihood of developing high blood pressure at 13 months than did someone whose scale score was zero. Traumatic grief symptoms at 6 months were also marginally associated with a reported change in smoking at the 13-month assessment (Wald $\chi^2=3.43$, $p<0.05$, relative risk=16.7). For each additional point on the modified Grief Measurement Scale at 6 months, the individual was 16.7 times more likely to report a change in smoking. Individuals with a modified Grief Measurement Scale score of 32 would be 534 times more likely to change their smoking habits than would those with scale scores of zero. Traumatic grief symptoms at 6 months were significantly associated with changes in eating habits at 13 months (Wald $\chi^2=6.69$, $p<0.01$, relative risk=7.02). Thus, for each additional point on the modified Grief Measurement Scale score, individuals had a 7.02 greater chance of reporting a change in eating habits; an individual whose scale score was 32 would be 225 times more likely to report a change in eating habits than would someone with a scale score of zero. The results of the linear regression analyses indicated that traumatic grief assessed at 6 months marginally predicted suicidal ideation ($t=2.18$, $p=0.03$) and the interviewer's assessment of grief ($t=2.01$, $p=0.05$) 13 months after loss.

Table 2 also reveals that traumatic grief at 6 months was significantly associated with the development of heart trouble at 25 months (Wald $\chi^2=7.38$, $p<0.01$; relative risk=1.15). Thus, for every additional point on the modified Grief Measurement Scale, the individual

was 1.15 times more likely to develop heart trouble; individuals with scale scores of 32 were 36.8 times more likely to develop heart trouble at 25 months than were those with scale scores of zero, over and above the effects of age and sex. The linear regressions suggested that traumatic grief symptoms were significantly associated with suicidal ideation ($t=2.63$, $p=0.009$) and the interviewer's evaluation of the respondent's level of grief ($t=3.63$, $p=0.0003$) and marginally associated with development of syndromal levels of anxiety (Wald $\chi^2=4.44$, $p<0.05$; relative risk=0.90) at the 25-month assessment, when age, sex, and baseline measure of the outcome were controlled.

In a parallel set of analyses, we sought to determine whether traumatic grief assessed at 2 months would prove to be a better predictor of the previously cited outcomes at the 13- and 25-month assessments than traumatic grief at the 6-month assessment. The results of these analyses revealed that traumatic grief levels at the 2-month assessment did not significantly predict any of the previously cited outcomes. These results suggest that with respect to identifying which bereaved individuals will be at risk for the future adverse health consequences studied here, the level of traumatic grief at 6 months clearly has much greater prognostic value.

Incidence of Health Outcomes for Subjects With High and Low Levels of Traumatic Grief

We then compared the incidence of health outcomes that had occurred between the 6-month and 25-month assessments among the bereaved subjects who did and

did not meet criteria for caseness of traumatic grief at the 6-month assessment. Using Fisher's exact tests, we found that subjects representing cases of traumatic grief had substantially higher rates of heart trouble ($p < 0.05$) and cancer ($p < 0.001$), as well as more reports of headaches ($p = 0.05$) and the flu ($p < 0.05$) at an anniversary of the spouse's death, than did those who scored low on traumatic grief (table 3).

TABLE 3. Health Outcomes Between 6- and 25-Month Assessments for Widows and Widowers Who Did and Did Not Meet Criteria for Traumatic Grief

Health Outcome	Traumatic Grief			Nontraumatic Grief			p ^a
	Total	With Outcome		Total	With Outcome		
		N	%		N	%	
Heart trouble	26	5	19.2	97	5	5.2	0.03
Cancer	26	4	15.4	97	0	0.0	0.0002
Headache ^b	33	2	6.1	117	0	0.0	0.05
Flu ^b	26	2	7.7	97	0	0.0	0.04

^aFisher's exact test.

^bOn anniversary of spouse's death.

DISCUSSION

Bereaved individuals with high scores on traumatic grief were found to be at significantly heightened risk for a variety of poor health outcomes. Prior research has already established that bereavement is a risk factor for the types of health impairments studied here (10, 16, 17). However, the vast majority of studies that have shown bereavement to be a risk factor for poor health have not examined the levels of psychiatric symptoms in general, and of traumatic grief in particular, as important influences on the magnitude of the bereavement outcomes. The results of this study suggest that symptoms of traumatic grief are important factors that mediate the long-term consequences of bereavement.

Other reports may not have examined the health changes secondary to bereavement-related psychic distress because of the data typically available to conduct bereavement research—either clinical databases with thorough psychiatric assessments but relatively small sample sizes, sample biases, and limited physical health measures, or epidemiological databases with large, relatively unbiased samples and a wide range of health outcomes but few in-depth clinical psychiatric measures. The data available for this study contained a large, relatively unbiased group of respondents with a wide range of psychiatric symptoms and health measures, thereby allowing for the effects of psychiatric symptoms on a variety of important health outcomes to be examined, with adjustment for potential confounding influences.

The results of our first set of analyses indicated that the percentage of subjects who met criteria for caseness of traumatic grief declined sharply, from a little over half of the subjects in the first few weeks after the death to 6% approximately 1 year after loss. It is of interest that the rates for caseness of traumatic grief increased to 7% by the last (25-month) assessment. Mean levels of traumatic grief and depression were shown to decline most steeply within the first 6 months after loss but then to slow in their respective rates of symptom resolution. These results suggest that traumatic grief symptoms are unlikely to resolve much beyond the level found in the second half of the first year of widowhood and may even increase thereafter.

The primary findings in this report demonstrated the

health risks 1 and 2 years after the loss that were posed by high levels of traumatic grief symptoms 6 months after the loss. The survival analysis indicated that subjects with high levels of traumatic grief were significantly more likely to develop cancer than were subjects with low levels of traumatic grief. When the effects of depression, anxiety, age, sex, and prior history of the outcome were controlled, the regression analyses indicated that traumatic grief predicted other physical health outcomes such as high blood pressure readings and heart trouble. Given that the new cases of cancer (N=4) and heart trouble (N=11) between the 6- and 25-month assessments were relatively rare, these results should be viewed with caution. It nevertheless should be noted that the rarity of new disorders found in this group leaves open the possibility that significant associations between traumatic grief and the incidence of other disorders, such as stroke or diabetes, may emerge in larger samples. Although the data presented here did not allow us to determine the reasons why high levels of traumatic grief would predict cancer or heart problems, they have pointed to the fact that the bereaved who manifest elevated levels of psychiatric syndromes such as traumatic grief appear to be a subgroup at heightened risk.

We also found that traumatic grief at 6 months predicted the rater-based assessment of traumatic grief at both follow-up assessments—that is, the interviewer's evaluation of the respondent's resolution of grief. These results suggest that the self-report measure of traumatic grief had adequate construct validity. Traumatic grief also predicted suicidal ideation at both follow-up assessments. Unfortunately, the measure of suicidal ideation was based on a single item to assess the degree of the respondent's thoughts about suicide. While a more complete scale to assess suicidal thoughts and intent would have been preferable, it was the only measure available to us in this data set. Still, the results suggest that subjects with traumatic grief have an elevated risk for taking their own lives. Thus, prior findings that note the increased risk of suicide following spousal and parental bereavement (31–33) appear to have overlooked the risk of suicidality posed by the development of traumatic grief.

Several adverse health behaviors were also significantly associated with traumatic grief. Traumatic grief

symptoms assessed 6 months after the loss were a significant predictor of changes in eating at 13 months. We also found that while mean levels of tobacco consumption remained essentially unchanged for the entire group of bereaved subjects over time (a finding consistent with that reported for a bereavement sample studied by Zisook et al. [34]), there was a trend for those with high levels of traumatic grief at 6 months to be more likely to report changes in smoking at 13 months. The association between traumatic grief and these adverse health behaviors suggests a potential explanation for why subjects with traumatic grief experience subsequent cardiac impairment. The results highlight that it is not all bereaved, but rather the bereaved with traumatic grief, who are at risk for these health-compromising behaviors.

Although we do not have data to suggest reasons why traumatic grief predicted health-impairing behaviors, prior reports offer a potential explanation. We have found certain attachment disturbances (e.g., compulsive caregiving, excessive dependency, and defensive separation) to be associated with traumatic grief (35). Although we have yet to test the hypothesis specifically, it may be that these attachment disturbances also predispose the individual to an avoidant or self-soothing way of coping with feelings of separation distress and trauma, which itself has been associated with poor health outcomes (36).

CONCLUSIONS

The results suggest that it may not be the stress of bereavement, per se, that puts individuals at risk for long-term mental and physical health impairments. Rather, it appears that the manifestation of psychiatric sequelae, specifically traumatic grief, is of critical importance for determining which bereaved individuals will be at risk for long-term dysfunction. Future research including more objectively obtained measures of physical health, health behaviors, physiological responses, attachment, and coping, as well as a more thorough assessment of suicidal ideation, is needed to better establish the findings presented in this report. Replication in younger bereaved samples, the nonsponsally bereaved, and individuals bereaved by modes of death apart from terminal illness would enable us to determine the broader generalizability of these results. In light of the limitations resulting from the rarity of the outcomes being predicted, each one of these preliminary results would benefit from a case-control study in which a sizable number of cases of the outcome would be compared between cases and noncases of traumatic grief. Finally, a comparison of nonbereaved and of bereaved with and without traumatic grief would allow us to determine the relative effects of bereavement and traumatic grief on health.

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