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## Trauma and bereavement: Examining the impact of sudden and violent deaths

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### Abstract

The intersection between trauma and bereavement has only recently been explored. Prior studies of bereavement have often neglected to measure posttraumatic stress disorder (PTSD) symptoms; the few that have offer equivocal findings concerning the role of PTSD symptomatology following loss. Few studies have explored the relationship between PTSD and the other psychological sequelae more commonly associated with loss. The current investigation assessed PTSD symptoms over time following the death of a spouse, using violence and the suddenness of the loss as potential outcome predictors. In addition, the relationship between PTSD and depression symptoms was assessed. Violent death predicted PTSD symptoms and the persistence of depression over time. The suddenness of the loss was not related to PTSD symptoms. This investigation suggests that violent death results in development of PTSD symptoms over and above the normal grief response and thus, may contribute to a more severe grief response.

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Almost since the inception of posttraumatic stress disorder (PTSD) as a major diagnostic category in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III, American Psychiatric Association (APA, 1980)), the question of which events should be considered traumatic stressors has been hotly debated (March, 1993; Solomon & Canino, 1990). Changes to the PTSD diagnosis in the latest version of the DSM have widened the scope of the stressor criterion to include “learning about unexpected or violent death . . . experienced by a family member or other close associate (DSM-IV, APA, 1994, p. 424). Somewhat surprisingly, there has been relatively little research on traumatic reactions during bereavement. The present study attempted to address the question of traumatic loss by comparing symptoms of depression and PTSD in a prospective investigation of midlife spousal bereavement, and by investigating the suddenness and violence of loss as two factors that may contribute to a traumatic loss.

## 1. Traumatic bereavement

The original criteria for PTSD in the DSM-III (APA, 1980) specified that only rare and horrific events could produce the disorder. As the narrowness of this criteria became apparent (Snow, Stellman, Stellman, & Sommer, 1988), the spectrum of possible traumatic stressors was expanded. In the most recent version of the DSM, an event may be considered traumatic if it includes the experiencing, witnessing, or confrontation with actual or threatened death, injury, or threat to the physical integrity of oneself or other people (DSM-IV, APA, 1994). As a result, the death of another person for the first time fell into the category of potentially traumatic events.

### 1.1. Sudden loss

The bereavement literature has identified a number of features of the death event that might contribute to traumatic reactions. One variable frequently cited as a risk factor for “poor bereavement outcome” is sudden, unexpected death (Sanders, 1993, p. 225). However, empirical data on this point have been inconclusive. Although, several studies have reported a link between unexpected loss and increased grief symptomatology (Ball, 1977; Lundin, 1984; Parkes & Brown, 1972; Sanders, 1983; Vachon et al., 1982), a number of studies have also reported null findings (Bonanno, Keltner, Holen, & Horowitz, 1995; Bornstein, Clayton, Halikas, Maurice, & Robins, 1973; Fulton & Gottesman, 1980; Maddison & Walker, 1967; Schwartzberg & Janoff-Bulman, 1991; Zisook & Shuchter, 1991). One reason for these equivocal findings may be that suddenness of a loss is usually confounded with the violent nature of the deaths studied (Bonanno & Kaltman, 1999). Thus, it may be the violent nature of sudden deaths that accounts for association of this factor with more severe grief symptoms.

### 1.2. Loss due to violent death

Consistent with the characteristic emphasis on the link between violence and trauma reactions, violent deaths have often been implicated in excessive or traumatic grief reactions (Figley, Bride, & Mazza, 1997; Horowitz, 1986; Janoff-Bulman, 1992; Murphy et al., 1999; Raphael, Middleton, Martinek, & Misso, 1993; Stevens-Guille, 1999; Thompson, Norris, & Ruback, 1998). Although several studies that compared types of bereavement did not find differences among different types of death (Range & Niss, 1990; Schut, De Keijser, Van Den Bout, & Dijkhuis, 1991), there is now a growing number of studies that have found support for the link between violent death and increased PTSD symptoms among bereaved survivors.

One form of violent death is the motor vehicle accident. Although fatal motor accidents are unfortunately common, very few studies have focused on the survivors of these events. Lehman, Wortman, and Williams (1987) examined the long-term adjustment to loss of a spouse or child due to a motor vehicle crash. Four to seven years postaccident, bereaved spouses, compared to matched controls, had more depression and other psychiatric symptoms, lower social functioning, reduced psychological well-being, and more future worries and concerns. These results suggest that loss of a spouse in a motor vehicle crash is associated with long-term psychological consequences. This study, which rigorously matched bereaved participants with nonbereaved controls, was one of the first studies to bring attention to the potential for truly long-term grief following loss. However, the data are limited because they are singularly dependent upon the retrospective self-report of the participants, which may be influenced by memory biases associated with current distress. Further, Lehman et al. stated that the purpose of their study was to examine the long-term impact of the “traumatic” loss of a close relative or friend, yet they did not measure symptoms of PTSD nor did they in any way show differences in relation to other, presumably “nontraumatic” losses.

Losses resulting from suicide are also commonly of a violent nature. It has been observed, for instance, that people commonly experience intrusive thoughts and avoidance reactions, characteristic symptoms of PTSD, following the suicide of a close relative or friend (van der Wal, 1989–1990). Unfortunately many studies of the psychological response of surviving family members have assessed depressive symptoms rather than PTSD symptoms (e.g., Barrett & Scott, 1990; Reed, 1993; Seguin, Lesage, & Kiely, 1995). Nonetheless, these studies have suggested that loss following suicide is more likely to lead to chronic grieving. For example, Farberow, Gallagher-Thompson, Gilewski, and Thompson (1992) compared bereavement following suicide and natural death. Initially, although both bereaved groups evidenced similar levels of grief, depression, and overall distress, the natural death group experienced symptom abatement sooner than the suicide death group.

In one of the few studies to examine suicide and PTSD, Brent, Moritz, Bridge, Perper, and Canobbio (1996) examined both siblings and parents of adolescents who had committed suicide, as well as matched nonbereaved controls. Neither parents nor siblings were shown to be at an increased risk for developing PTSD



symptoms compared to matched, nonbereaved controls over the 3-year course of the study. However, this study used a relatively small sample, which may have provided insufficient power to detect smaller effects.

Still another type of violent loss is the murder of a close relative or friend. In descriptive studies, [Parkes \(1993\)](#) and [Rynearson \(1984\)](#) identified symptoms of intrusion, avoidance, and hyperarousal characteristic of PTSD as frequently occurring among the family members of homicide victims. [Rynearson and McCreery \(1993\)](#) examined 18 bereaved individuals an average of 2.5 years since they had lost a close friend or relative to homicide. Although this study relied exclusively on self-report instruments and did not employ a comparison sample, it demonstrated that bereavement due to homicide was associated with relatively long-term elevations on several standardized measures of grief and loss-related intrusive and avoidant symptoms. Finally, [Amick-McMullan, Kilpatrick, and Resnick \(1991\)](#) screened a nationally representative sample to identify surviving family members and close friends of criminal homicide and alcohol-related vehicular homicide. Based on interview data, 23.3% of all immediate family survivors developed homicide-related PTSD at some point following the homicide (lifetime PTSD) whereas 4.8% of the sample met criteria for PTSD at the time of the interview (current PTSD). Percentage of the sample meeting criteria for one of the PTSD diagnostic symptom clusters (intrusion, avoidance, hyperarousal) as compared to full diagnostic criteria was greater both at any time since the homicide and at the time of the interview. There were no significant differences in lifetime or current PTSD rates between survivors of criminal homicide and vehicular homicide. Although this study suggests a strong relationship between homicidal bereavement and the development of PTSD symptoms, results for lifetime PTSD in particular may be limited by a reporting bias due to the retrospective design of the study, with the average time elapsed since the homicide being around 17 years.

The range of findings implicating different types of violent death in chronic and traumatic grief reactions ([Amick-McMullan, Kilpatrick, & Resnick, 1991](#); [Parkes, 1993](#); [Rynearson, 1984](#)) suggests the importance of comparing PTSD symptoms in relation to the general categories of violent and nonviolent (i.e., natural) deaths. Recently, [Zisook, Chentsova-Dutton, and Shuchter \(1998\)](#) followed 350 widows and widowers for 2 years following the loss of a spouse. Bereaved participants who had lost a spouse following a suicide or accident showed an elevated risk for meeting approximated diagnostic criteria for PTSD as compared to those who had a sudden and unanticipated loss due to other natural causes. In addition, PTSD was correlated with depressive symptomatology. While this study begins to explore prediction of a PTSD reaction following loss and the relationship between PTSD symptoms and other bereavement-related symptomatology, it is compromised by methodological limitations. Most prominently, because the study was not designed to explore PTSD reactions explicitly, [Zisook et al. \(1998\)](#) were only able to approximate the diagnostic criteria for PTSD utilizing questionnaire data originally utilized to assess other bereavement-related symptomatology.



## 2. The current study

Based on the preliminary findings and methodological limitations reviewed above, the current study was designed to examine two specific questions regarding traumatic grief reactions. First, we examined the relationship of PTSD and depression in a sample of middle-aged, spousally bereaved adults. Because several studies have reported subthreshold or partial PTSD among individuals exposed to a trauma (Helzer, Robins, & McEvoy, 1987; Kulka et al., 1990), we considered both the categorical diagnoses and the total number of symptoms for these disorders. To examine changes in PTSD and depressive symptoms over time, assessments were conducted at 6, 14, and 25 months of bereavement. Second, we examined the role of violent death and the suddenness of the loss as possible predictors of depressive and PTSD symptoms. Based on the preliminary evidence, we advanced three hypotheses. First, we expected that bereavements resulting from violent deaths would exhibit significantly greater levels of PTSD symptoms compared to bereavements resulting from natural death. Second, we expected that the suddenness of the death by itself would not meaningfully influence either PTSD or depressive symptoms. Third, we expected that violent death bereavements would exhibit higher levels of depressive symptomatology than those experienced by the natural death group. This hypothesis is consistent with studies of the comorbidity of PTSD symptomatology with depression (e.g., Breslau, Davis, Andreski, & Peterson, 1991; Green, Lindy, Grace, & Leonard, 1992; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995) and would suggest that violent deaths are associated with increased distress across a number of symptomatic domains.

## 3. Method

### 3.1. Participants

Spousally bereaved residents of the San Francisco Bay area were recruited via newspaper advertisements, posted notices, and referrals from medical and religious organizations to participate in a longitudinal study of spousal bereavement. Recruitment sources identified the need for paid volunteers who had experienced the death of a spouse within the previous 3–6 months and who would discuss their recent experience so that “more could be learned about the grieving experience from a scientific standpoint.” Respondents were screened by phone and invited to participate in the study if they were between 21 and 55 years of age, had been married or living with the deceased for a minimum of 3 years preceding the death, and had not experienced any serious mental or physical disorders, alcohol or other substance abuse, or binge eating during that time. Exclusionary criteria were assessed by self-reported history.

Initial data were available for 87 participants. This sample was 69% female ( $n = 60$ ) and 31% male ( $n = 27$ ), ranged in age from 24 to 56 years ( $M = 45.8$ ,

S.D. = 8.38), and had been married for an average of 15.53 years (S.D. = 10.90) with an average family income of US\$58,407 (S.D. = 37,130). In terms of ethnic background, 80.5% of the sample was Caucasian, 8.5% was African-American, 3.7% was Hispanic-American, 2.4% was Native American, 1.2% was Asian-American, and the remaining 3.7% reported other ethnicity. In terms of educational background, 7.2% of the sample reported not having progressed further than high school, 60.3% reported having at least some college-level education, and 32.5% reported having at least some graduate-level education. Of the original 87 participants, 71 (82%) remained in the study through 14 months postloss, and 56 (65% of the original sample) remained in the study through 25 months postloss. ANOVA was used to compare participants who stayed in the study and participants who dropped out to identify potential differences in age, income prior to the loss, income change subsequent to the loss, and years married. ANOVAs for income prior to the loss, income change subsequent to the loss, and years married did not reveal differences, ns. The ANOVA for age revealed that participants who stayed in the study for the 14 month postloss interview were older than those who dropped out,  $F(1, 74) = 5.35$ ,  $P < .05$ . Analyses for the third wave of data collection did not approach significance, ns.

### 3.2. Overview of procedure

Participants completed a self-report packet, that included a demographics questionnaire and a measure of self-reported depression, and a structured clinical interview, that included PTSD symptoms, at approximately 6 months after the spouse's death ( $M = 5$  months, 18 days). The structured clinical interviews were conducted by three doctoral candidates in clinical psychology who were blind to the goals and hypotheses of the study. All interviews were videotaped. Inter-rater reliability was assessed by having a randomly selected set of 25 videotapes recoded by a second interviewer ( $\kappa = .78$ ). The questionnaires and symptom interviews were repeated 14 and 25 months following the loss. Participants were paid US\$10.00 per hour.

### 3.3. Measures

#### 3.3.1. PTSD

Symptoms of PTSD were assessed as part of a larger structured clinical interview for grief-related symptoms. The interview assessed PTSD symptoms with one item for each of the 17 symptoms of intrusion, avoidance, and hyperarousal associated with PTSD as defined by DSM-III-R (APA, 1987). Interview items were adapted from the structured clinical interview for DSM-III-R (SCID; Spitzer, Williams, Gibbon, & First, 1990). Although the interview was designed in accordance with DSM-III-R (APA, 1987) diagnostic criteria for PTSD, for the purposes of all statistical analyses, symptoms were regrouped according to DSM-IV (APA, 1994) specifications. The stressor criterion for

PTSD was eliminated as the precipitating event was designated a priori as the death of the spouse. Thus, each of the 17 PTSD symptoms was referenced globally to the deceased spouse. PTSD items showed moderate internal consistency ( $\alpha = .69$ ). Support for the validity of the PTSD section of the interview was evidenced by its high correlation with the intrusion ( $r = .65, P < .001$ ) and avoidance ( $r = .50, P < .001$ ) subscales of the Impact of Event Scale (Horowitz, Wilner, & Alvarez, 1979).

### 3.3.2. Depression

Self-reported depressive symptoms were assessed using the Beck Depression Inventory (BDI; Beck & Steer, 1987). The BDI is a paper/pencil self-report questionnaire that has been used widely in both research and clinical settings as a measure of depression. Cut-off scores provide guidelines for interpretation: none or minimal depression is  $<10$ , mild to moderate depression is  $10-18$ , moderate to severe depression is  $19-29$ , and severe depression is  $30-63$  (Beck, Steer, & Garbin, 1988). Beck et al. (1988) conducted a meta-analysis of the studies that have evaluated the psychometric properties of the BDI. Mean estimates of internal consistency were .81 for nonpsychiatric samples. Estimates of stability ranged from .60 to .83 for nonpsychiatric samples. In terms of validity, concurrent validity of the BDI with a number of other measures of depression was measured. Discriminant validity and construct validity are also well-documented (Beck et al., 1988). The BDI has been used as a measure of depressive symptomatology in many studies of spousal bereavement (e.g., Gallagher, Breckenridge, Thompson, & Peterson, 1983; Stroebe & Stroebe, 1993).

### 3.3.3. Characteristics of the death event

Number of days forewarning the spouse's death, as well of the type of death, were assessed during the initial interview. For the purposes of this investigation, a sudden, unexpected loss was defined as having a terminal interval of less than 1 day prior to the death, i.e., no forewarning. Death events were categorized as either a *violent death*, which included death by accident, homicide, or suicide, or a *natural death*, which included death by natural causes (e.g., disease). Grouping deaths due to accident, homicide, and suicide into one category is customary in the trauma literature (Green, 1997; Norris, 1992).

## 4. Results

### 4.1. Descriptive data

Means and standard deviations for the total number of PTSD symptoms, type of PTSD symptoms (intrusion, avoidance, and hyperarousal), and BDI scores are presented in Table 1. According to the DSM-IV (APA, 1994) diagnostic criteria, 21% of the sample met criteria for PTSD at 6 months postloss. This rate of PTSD



Table 1  
Mean scores and standard deviations for PTSD symptoms and the Beck Depression Inventory

Measure	<i>M</i> (S.D.)		
	6 months ( <i>n</i> = 87)	14 months ( <i>n</i> = 71)	25 months ( <i>n</i> = 56)
<i>PTSD symptoms</i>			
Total PTSD symptoms	5.36 (3.81)	3.28 (3.52)	2.29 (2.56)
Intrusion symptoms	1.85 (1.29)	.80 (1.01)	.77 (.91)
Avoidance symptoms	1.75 (1.67)	1.15 (1.51)	.79 (1.07)
Hyperarousal symptoms	1.76 (2.07)	1.32 (1.90)	.73 (1.43)
BDI score	13.01 (8.57)	10.24** (6.76)	7.61* (6.97)

\* *n* = 46.

\*\* *n* = 68.

is higher than estimates in the general population (Breslau et al., 1991; Kessler et al., 1995; Norris, 1992; Resnick, Kilpatrick, Saunders, & Best, 1993) and consistent with other studies of trauma (Norris, 1992; Schut et al., 1991; Zisook et al., 1998). This prevalence rate fell to 10% at 14 months postloss and 5% at 25 months postloss.

BDI scores provided an indication of the severity of the depressive symptomatology experienced by the bereaved sample. At 6 months postloss, 70.1% of the sample was at least mild-moderately depressed. This percentage decreased to 42.4% at 14 months postloss and 34% at 25 months postloss.

#### 4.1.1. Type of death and PTSD symptoms

The initial data analyses consisted of *t*-tests to examine whether bereaved individuals who had lost a spouse following a violent death differed from bereaved individuals who had lost a spouse following a natural death. For each wave of data collection, we conducted separate *t*-tests to examine differences in the total number of PTSD symptoms in addition to each of the three clusters of PTSD symptoms, intrusion, avoidance, and hyperarousal, as assessed by the PTSD symptom interview. Means and standard deviations for PTSD symptoms in the violent death and natural death groups, and *t*-tests for group differences, are displayed in Table 2. Bereaved participants who had lost a spouse due to a violent death were found to have significantly more PTSD symptoms than bereaved participants who had lost a spouse due to natural causes over the course of the three waves of data collection. For the third wave of data collection (*n* = 56), the variances of the two death type groups were not equal,  $F = 11.17$ ,  $P < .01$ . When an additional *t*-test was conducted which did not assume equal variances, there was only a marginally significant trend for the violent death group to have more PTSD symptoms than the natural death group,  $t(7.53) = 1.69$ ,  $P = .13$ . Results for the individual clusters of PTSD symptoms showed a similar pattern for intrusion and avoidance symptoms (Table 2). However, the results were less consistent for hyperarousal symptoms.

Table 2  
Mean number of PTSD symptoms by type of death

Measure	Type of death		<i>t</i> -test
	Violent death, <i>M</i> (S.D.)	Natural death, <i>M</i> (S.D.)	
	<i>n</i> = 14	<i>n</i> = 73	<i>t</i> (85)
<i>6 months</i>			
Total PTSD symptoms	8.43 (3.55)	4.77 (3.58)	3.51**
Intrusion symptoms	2.64 (1.22)	1.70 (1.26)	2.59*
Avoidance symptoms	3.14 (1.70)	1.48 (1.53)	3.66***
Hyperarousal symptoms	2.64 (2.41)	1.59 (1.98)	1.18
	<i>n</i> = 10	<i>n</i> = 61	<i>t</i> (69)
<i>14 months</i>			
Total PTSD symptoms	6.20 (4.26)	2.80 (3.17)	2.99**
Intrusion symptoms	1.40 (1.17)	.70 (.96)	2.07*
Avoidance symptoms	2.20 (1.87)	.98 (1.38)	2.45*
Hyperarousal symptoms	2.60 (2.50)	1.11 (1.72)	1.81
	<i>n</i> = 8	<i>n</i> = 48	<i>t</i> (54)
<i>25 months</i>			
Total PTSD symptoms	4.50 (4.24)	1.92 (2.01)	7.53
Intrusion symptoms	1.13 (.99)	.71 (.90)	1.20
Avoidance symptoms	1.38 (1.06)	.69 (1.06)	1.71
Hyperarousal symptoms	2.00 (2.98)	.52 (.88)	1.40

\*  $P < .05$ .

\*\*  $P < .01$ .

\*\*\*  $P < .001$ .

The categorical PTSD diagnosis also showed a similar pattern. Violent death was associated with greater rates of PTSD than those experienced by the natural death group at 6 months postloss (violent death 50%, natural death 15%),  $\chi^2 = 8.74$ ,  $P < .01$ , and 14 months postloss\* (violent death 40%, natural death 5%),  $\chi^2 = 11.90$ ,  $P < .001$ . This relationship did not approach significance 25 months postloss, ns.

These results clearly link violent death with increased PTSD symptoms over time following the loss of a spouse. However, an alternative explanation for this finding is that violent death leads to an initial PTSD reaction that in and of itself is sufficiently debilitating to perpetuate the persistence of PTSD symptoms over time (McFarlane & Yehuda, 1996). If this were in fact the case, then controlling for initial PTSD symptoms should reduce or erase the group difference at later points in time. To examine this issue, we conducted linear regression analyses for PTSD symptoms at 14 and 25 months postloss with the initial (6 month) number of PTSD symptoms entered into the regression equation first as a control variable. The type of death was considered in a subsequent step, after the control variable was in the equation, using a forward entry procedure with criterion for entry into the equation set at  $P < .05$ . For the 14-month analysis, PTSD symptoms at 6

months explained about 24% of the 14-month PTSD variance,  $R^2 = .24$ . On the second step, type of death resulted in a significant increase in variance explained,  $R^2 = .28$ ,  $\beta = .22$ ,  $F(1, 68) = 4.10$ ,  $P < .05$ . Thus, with the initial level of PTSD symptoms controlled, the type of death was still predictive of PTSD symptoms at 14 months. For the 25-month analysis, PTSD symptoms at 6 months were again forced into a regression equation as a control variable and explained 37% of the 25-month PTSD variance,  $R^2 = .37$ ,  $\beta = .61$ ,  $F(1, 54) = 31.65$ ,  $P < .001$ . On the second step, type of death failed to enter significantly into the regression equation, ns. These analyses suggest that there is an impact of the type of death on the persistence of PTSD symptoms over and above the impact of the initial level of symptoms although how long this effect lasts is unclear.

#### 4.2. Potential moderator variables

We explored group differences between the violent death group and the natural death group. Any significant differences observed would identify potential moderator variables of the relationship between the type of death experienced and the development of PTSD symptomatology. Multivariate ANOVAs compared violent and natural death participants for possible differences in the bereaved's age, the number of years married, the family income prior to the loss, and the income change following the loss were not significant for any of the three waves of data collection, ns. In this sample, gender and the type of loss were confounded as 12 of the 14 bereaved participants in the violent death group were women. Thus, the effect of gender on the development of PTSD symptoms was examined within the natural death cohort alone. Among the bereaved participants who had lost a spouse due to natural causes, gender showed a marginally significant effect for women to experience more PTSD symptoms ( $M = 5.27$ , S.D. = 3.95) than men ( $M = 3.80$ , S.D. = 2.55) 6 months following the loss,  $t(67.59) = 1.92$ ,  $P = .059$ . Within the natural death group, differences in total number of PTSD symptoms between female and male participants did not approach significance at 14 and 25 months postloss, ns.

#### 4.3. Effect of suddenness on PTSD symptoms

Sudden death is confounded with the type of death, i.e., violent deaths are also sudden deaths. Therefore, examination of the impact of suddenness on development of PTSD symptoms was limited to the natural death cohort alone. The interval between diagnosis and death ranged from 1 day to 1825 days. Among the natural death cohort, there were no significant differences between bereaved individuals who had sudden, unexpected losses (terminal interval of less than 1 day prior to the death) and those who had expected losses in terms of the number of PTSD symptoms experienced for any of the three waves of data collection, ns. In addition, there were no differences in the rates of clinical diagnosis, ns.



Table 3  
Mean score on BDI by type of death

Measure	Type of death		<i>t</i> -test
	Violent death, <i>M</i> (S.D.)	Natural death, <i>M</i> (S.D.)	
6 months BDI score	<i>n</i> = 14	<i>n</i> = 73	<i>t</i> (85) = 1.33
	15.79 (7.37)	12.48 (8.73)	
14 months BDI score	<i>n</i> = 8	<i>n</i> = 60	<i>t</i> (66) = 1.70
	14.00 (9.29)	9.73 (6.28)	
25 months BDI score	<i>n</i> = 5	<i>n</i> = 41	<i>t</i> (44) = 2.35*
	14.20 (9.73)	6.80 (6.25)	

\*  $P < .05$ .

#### 4.4. Depressive symptomatology

We explored the impact of the type of death and sudden, unexpected loss on self-reported depression across the three data collections. Means for self-reported depression in the violent death and natural death groups are reported in Table 3. The *t*-tests were used to analyze between group differences in self-reported depressive symptomatology. There were no significant differences between the bereaved participants who had lost a spouse due to a violent death and the bereaved participants who had lost a spouse due to a natural death on self-reported depression at 6 months postloss, *ns*. There was a marginally significant trend for the violent death group to have more self-reported depressive symptomatology ( $M = 14.00$ ,  $S.D. = 9.29$ ) than the natural death group ( $M = 9.73$ ,  $S.D. = 6.28$ ) at 14 months postloss,  $t(66) = 1.70$ ,  $P = .094$ . At 25 months postloss, the violent death group reported significantly more self-reported depression ( $M = 14.20$ ,  $S.D. = 9.73$ ) than the natural death group ( $M = 6.80$ ,  $S.D. = 6.25$ ),  $t(44) = 2.35$ ,  $P < .05$ . We also explored the impact of the type of death on self-reported depression across the three waves of data collection using a repeated measures ANOVA. Only the interaction of time and type of death was significant,  $F(2, 43) = 5.34$ ,  $P < .05$ . The natural death group experienced a decline in depressive symptoms across time, while the violent death group maintained a consistent level of self-reported depression across the three waves of data collection.

The impact of sudden, unexpected loss on self-reported depression was explored in the natural death cohort alone using both *t*-tests and a repeated measures analysis. There were no significant differences between the sudden, unexpected loss group and the expected loss group in self-reported depression across the three waves of data collection, *ns*.

## 5. Discussion

The current study examined suddenness and violence as features of the death of a spouse that may contribute to the presence of bereavement-related trauma reactions. Although sudden, unexpected loss is frequently characterized as a particularly traumatic loss (e.g., Parkes & Weiss, 1983; Rando, 1993), research on this issue has been inconclusive, at least in part because previous studies have failed to separate violent deaths from sudden deaths (Bonanno & Kaltman, 1999). Based on previous evidence, in the present study we hypothesized that losses resulting from violent death (accidental death, suicide, and homicide) would predict greater PTSD symptoms and more enduring depression over time following bereavement, but that suddenness by itself would be unrelated to these same outcome measures. The results confirmed this prediction. Violent death was found to predict PTSD symptoms and the persistence of depression following spousal loss, whereas sudden death from natural causes (e.g., a heart attack) was unrelated to these same outcome measures.

These findings suggest that violent deaths result in the presence of PTSD symptoms over and above the normal grief response and thus, may contribute to a more severe grief response. This investigation, which utilized a prospective design, contributes to our theoretical understanding in the areas of both trauma and bereavement. From a trauma perspective, these findings support inclusion of the violent death of a loved one among the broader category of traumatic events capable of producing PTSD. An important next step will be exploration of other predictors of PTSD symptomatology following loss and their mediational influence on the relationship between violent death and the presence of PTSD symptoms. From a bereavement perspective, these findings contribute to a greater appreciation of the conditions that cause some individuals to develop chronic grief reactions (Bonanno & Kaltman, 2001). Further, these results point to the importance of examining individual differences in bereavement and suggest that PTSD symptoms should be explored more regularly as an outcome variable in studies of loss.

### 5.1. Limitations

The conclusions of this study are limited by several methodological concerns. First, the psychometric properties of the interview utilized in this investigation are largely unexplored. Future research should assess the stability, concurrent validity, and discriminant validity of the measure. Second, data analyses were limited by the small number of violent deaths represented in our sample. Although this limits the complexity of the data analysis, it is a limitation that is shared by other studies of violent death (Schut et al., 1991). This is an issue that should be addressed in future research through the design and implementation of recruitment procedures that maximize recruitment of persons bereaved subsequent to violent death. In addition, analyses of the natural death cohort alone were limited

by small sample size once this group was divided into sudden, unexpected losses and expected losses. Conducting analyses on the impact of sudden loss among natural death samples with larger numbers of participants in future studies will be important in providing support for the conclusion that violent death rather than sudden loss is associated with PTSD following spousal loss. Third, prior trauma history was not assessed. As the experience of previous traumatic experiences may impact outcome (Robinson et al., 1994), future studies should attempt to incorporate a thorough trauma history.

Fourth, the construct validity of the category of violent death requires further exploration. Consistent with studies of trauma and loss (Green, 1997; Norris, 1992), the term “violent death” was broadly defined to include a wide variety of losses, and bereavement due to accidents, suicide, and homicide were considered together. It may be argued that each of these types of loss is qualitatively distinct and should not be grouped together. The lower base rates of these types of deaths make it difficult to explore each as a distinct category. Future research would benefit from recruitment of higher numbers of subjects bereaved in these ways to be able to explore the separate experiences and compare the prediction of PTSD symptoms following each type of violent death. If differences in outcome among the three types of violent death are minimal, this will give further validation to their being grouped together. If they prove more distinct, this will illuminate further the characteristics of the death of a loved one that are important in the development and persistence of PTSD symptoms and other outcomes.

Further, it may be argued that accidents, suicides, and homicides have varying levels of violence given the circumstances of each individual death, with some accidents being more violent than others, etc. For example, a suicide that is witnessed (Brent et al., 1993; Farmer, Tranah, O'Donnell, & Catalan, 1992) may have a more severe impact on the bereaved than a suicide in which the bereaved are informed of the death by others. Thus, the relationship between the type of death and development of PTSD symptoms may be mediated by the level of violence associated with the death. To evaluate this hypothesis, an area of future research may be to develop a systematic evaluation for the level of violence connected to loss.

The generalizability of these findings is limited by a number of factors. This investigation focused on a particular type of loss, specifically, spousal loss in adults at midlife. This limits the generalizability of the results to other types of losses and loss at different points in the age span. Further, the sample utilized in this study was relatively homogenous with respect to their ethnic background and socio-economic status. Given the different demands placed on bereaved persons due to their socio-economic standing and the varied influence cultural background has on the experience of loss, the findings are further limited. Exploring the impact of these various factors on the bereavement experience in future research will illuminate the extent of the generalizability of these findings.



### 5.2. Clinical implications

The results of this investigation suggest that bereavement subsequent to violent death is associated with higher levels and more enduring distress than bereavement under more natural circumstances. Within the constraints of the limitations discussed above, several important clinical implications are suggested. Recognition that grief includes symptomatology other than symptoms of depression commonly associated with loss should inform the assessment and treatment of bereaved persons. In terms of assessment, a comprehensive evaluation which includes PTSD, depression, and grief-specific symptoms, the circumstances surrounding the death event, prior trauma exposure, and the bereaved's subjective reaction at the time of the loss is imperative to obtain the most thorough understanding possible of the bereaved's grief experience. A comprehensive assessment will allow clinicians to select the most appropriate treatment options. With the understanding that different types of loss result in different symptoms and symptom patterns in bereavement, treatment should focus on all symptoms rather than simply the depression and grief-specific symptoms commonly associated with loss. It will be important to address PTSD symptoms early in the therapy (Lindy, Green, Grace, & Titchener, 1983; Pynoos & Nader, 1988), as intrusive experiences may be disruptive to the treatment process and because PTSD has been shown to be a disorder that, in the absence of intervention, may become chronic (McFarlane & Yehuda, 1996). Following violent deaths, clinicians should expect that PTSD symptoms may develop and that depression symptoms may persist for longer periods of time than expected with bereavement following natural deaths. Educating clients that this is expected and consistent with research findings will enable the clients to accept their reactions and better understand their grief experiences. Finally, clinicians who favor group treatment should consider the impact of treating a mixture of bereaved persons whose relatives suffered violent and natural deaths as different types of loss may necessitate a different focus and an altered pace of therapy.

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### References

- Amick-McMullan, A., Kilpatrick, D. G., & Resnick, H. S. (1991). Homicide as a risk factor for PTSD among surviving family members. *Behavior Modification*, 15, 545–559.
- American Psychiatric Association. (1980). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.). Washington, DC: Author.

- American Psychiatric Association. (1987). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., revised). Washington, DC: Author.
- American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.). Washington, DC: Author.
- Ball, J. F. (1977). Widow's grief: the impact of age and mode of death. *Omega*, 7, 307–333.
- Barrett, T. W., & Scott, T. B. (1990). Suicide bereavement and recovery patterns compared with nonsuicide bereavement patterns. *Suicide and Life-Threatening Behavior*, 20, 1–15.
- Beck, A. T., & Steer, R. A. (1987). *Manual for the Beck Depression Inventory*. New York: Harcourt Brace Jovanovich.
- Beck, A. T., Steer, R. A., & Garbin, M. C. (1988). Psychometric properties of the Beck Depression Inventory: 25 years of evaluation. *Clinical Psychology Review*, 8, 77–100.
- Bonanno, G. A., & Kaltman, S. (1999). Toward an integrative perspective on bereavement. *Psychological Bulletin*, 125, 760–776.
- Bonanno, G. A., & Kaltman, S. (2001). The varieties of grief experience. *Clinical Psychology Review*, 20, 1–30.
- Bonanno, G. A., Keltner, D., Holen, A., & Horowitz, M. J. (1995). When avoiding unpleasant emotion might not be such a bad thing: verbal-autonomic response dissociation and midlife conjugal bereavement. *Journal of Personality and Social Psychology*, 66, 975–989.
- Bornstein, P. E., Clayton, P. J., Halikas, J. A., Maurice, W. L., & Robins, E. (1973). The depression of widowhood after 13 months. *British Journal of Psychiatry*, 122, 561–566.
- Brent, D. A., Moritz, G., Bridge, J., Perper, J., & Canobbio, R. (1996). The impact of adolescent suicide on siblings and parents: a longitudinal follow-up. *Suicide and Life-Threatening Behavior*, 26, 253–259.
- Brent, D. A., Perper, J., Moritz, G., Friend, A., Schweers, J., Allman, C., McQuiston, L., Boylan, M. B., Roth, C., & Balach, L. (1993). Adolescent witnesses to a peer suicide. *Journal of the American Academy of Child and Adolescent Psychiatry*, 32, 1184–1188.
- Breslau, N., Davis, G. C., Andreski, P., & Peterson, E. (1991). Traumatic events and posttraumatic stress disorder in an urban population of young adults. *Archives of General Psychiatry*, 48, 216–222.
- Farberow, N. L., Gallagher-Thompson, D., Gilewski, M., & Thompson, L. (1992). Changes in grief and mental health bereaved spouses of older suicides. *Journal of Gerontology*, 47, 357–366.
- Farmer, R., Tranah, T., O'Donnell, I., & Catalan, J. (1992). The psychological effects on drivers. *Psychology and Medicine*, 22, 407–414.
- Figley, C. R., Bride, B. E., & Mazza, N. (Eds.). (1997). *Death and trauma: the traumatology of grieving*. Washington, DC: Taylor and Francis.
- Fulton, R., & Gottesman, D. J. (1980). Anticipatory grief: a psychosocial concept reconsidered. *British Journal of Psychiatry*, 137, 45.
- Gallagher, D., Breckenridge, J., Thompson, L. W., & Peterson, J. A. (1983). Effects of bereavement on indicators of mental health in elderly widows and widowers. *Journal of Gerontology*, 38, 565–571.
- Green, B. L. (1997). *Traumatic loss: conceptual issues and new research findings*. Paper presented to the International Conference on Grief and Bereavement in Contemporary Society, Washington, DC.
- Green, B. L., Lindy, J. D., Grace, M. C., & Leonard, A. C. (1992). Chronic posttraumatic stress disorder and diagnostic comorbidity in a disaster sample. *Journal of Nervous and Mental Disease*, 180, 70–76.
- Helzer, J. E., Robins, L. N., & McEvoy, L. (1987). Post-traumatic stress disorder in the general population: findings of the Epidemiologic Catchment Area survey. *New England Journal of Medicine*, 317, 1630–1634.
- Horowitz, M. (1986). *Stress response syndromes*. Northvale, NJ: Aronson.
- Horowitz, M., Wilner, N., & Alvarez, W. (1979). Impact of Event Scale: a measure of subjective stress. *Psychosomatic Medicine*, 41, 209–218.
- Janoff-Bulman, R. (1992). *Shattered assumptions: towards a new psychology of trauma*. New York: The Free Press.

- Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the National Comorbidity Study. *Archives of General Psychiatry*, 52, 1048–1060.
- Kulka, R. A., Schlenger, W. E., Fairbank, J. A., Hough, R. L., Jordan, B. K., Marmar, C. R., & Weiss, D. S. (1990). *Trauma and the Vietnam war generation: report of findings from the National Vietnam Veterans Readjustment Study*. New York: Brunner/Mazel.
- Lehman, D. R., Wortman, C. B., & Williams, A. F. (1987). Long-term effects of losing a spouse or child in a motor vehicle crash. *Journal of Personality and Social Psychology*, 52, 218–231.
- Lindy, J. D., Green, B. L., Grace, M., & Titchener, J. (1983). Psychotherapy with survivors of the Beverly Hills Supper Club fire. *American Journal of Psychotherapy*, 37, 593–610.
- Lundin, T. (1984). Morbidity following sudden and unexpected bereavement. *British Journal of Psychiatry*, 144, 84–88.
- Maddison, D., & Walker, W. L. (1967). Factors affecting the outcome of conjugal bereavement. *International Journal of Psychiatry*, 113, 1057–1067.
- March, J. S. (1993). What constitutes a stressor: the "Criterion A" issue. In: J. R. T. Davidson & E. B. Foa (Eds.), *Posttraumatic stress disorder: DSM-IV and beyond* (pp. 37–54). Washington, DC: American Psychiatric Press Inc.
- McFarlane, A. C., & Yehuda, R. (1996). Resilience, vulnerability, and the course of posttraumatic reactions. In: B. A. van der Kolk, A. C. McFarlane, & L. Weisaeth (Eds.), *Traumatic stress: the effects of overwhelming experience on mind, body, and society* (pp. 155–181). New York: Guilford Press.
- Murphy, S. A., Braun, T., Tillery, L., Cain, K. C., Johnson, L. C., & Beaton, R. D. (1999). PTSD among bereaved parents following the violent deaths of their 12- to 28-year-old children: a longitudinal prospective analysis. *Journal of Traumatic Stress*, 12, 273–291.
- Norris, F. H. (1992). Epidemiology of trauma: frequency and impact of different potentially traumatic events on different demographic groups. *Journal of Consulting and Clinical Psychology*, 60, 409–418.
- Parkes, C. M. (1993). Psychiatric problems following bereavement by murder or manslaughter. *British Journal of Psychiatry*, 162, 49–54.
- Parkes, C. M., & Brown, R. J. (1972). Health after bereavement: a controlled study of young Boston widows and widowers. *Psychosomatic Medicine*, 34, 449–461.
- Parkes, C. M., & Weiss, R. S. (1983). *Recovery from bereavement*. New York: Basic Books.
- Pynoos, R. S., & Nader, K. (1988). Psychological first aid and treatment approach to children exposed to community violence: research implications. *Journal of Traumatic Stress*, 1, 445–473.
- Rando, T. A. (1993). *Treatment of complicated mourning*. Champaign, IL: Research Press.
- Range, L. M., & Niss, N. M. (1990). Long-term bereavement from suicide, homicide, accidents, and natural deaths. *Death Studies*, 14, 423–433.
- Raphael, B., Middleton, W., Martinek, N., & Misso, V. (1993). Counseling and therapy of the bereaved. In: M. S. Stroebe, W. Stroebe, & R. O. Hansson (Eds.), *Handbook of bereavement: theory, research, and intervention* (pp. 427–456). Cambridge, England: Cambridge University Press.
- Reed, M. D. (1993). Sudden death and bereavement outcomes: the impact of resources on grief symptomatology and detachment. *Suicide and Life-Threatening Behavior*, 23, 204–220.
- Resnick, H. S., Kilpatrick, D. G., Dansky, B. S., Saunders, B. E., & Best, C. L. (1993). Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *Journal of Consulting and Clinical Psychology*, 61, 984–991.
- Robinson, S., Hemmendinger, J., Netanel, R., Rapaport, M., Zilberman, L., & Gal, A. (1994). Retraumatization of Holocaust survivors during the Gulf war and SCUD missile attacks in Israel. *British Journal of Medical Psychology*, 67, 353–362.
- Rynearson, E. K. (1984). Bereavement after homicide: a descriptive study. *American Journal of Psychiatry*, 141, 1452–1454.
- Rynearson, E. K., & McCreery, J. M. (1993). Bereavement after homicide: a synergism of trauma and loss. *American Journal of Psychiatry*, 150, 258–261.



- Sanders, C. M. (1983). Effects of sudden versus chronic illness death on bereavement outcome. *Omega*, 13, 227–241.
- Sanders, C. M. (1993). Risk factors in bereavement outcome. In: M. S. Stroebe, W. Stroebe, & R. O. Hansson (Eds.), *Handbook of bereavement: theory, research, and intervention* (pp. 255–267). New York: Cambridge University Press.
- Schut, H. A., De Keijser, J., Van Den Bout, J., & Dijkhuis, J. H. (1991). Post-traumatic stress symptoms in the first years of conjugal bereavement. *Anxiety Research*, 4, 225–234.
- Schwartzberg, S. S., & Janoff-Bulman, R. (1991). Grief and the search for meaning: exploring the assumptive worlds of bereaved college students. *Journal of Social and Clinical Psychology*, 10, 270–288.
- Seguin, M., Lesage, A., & Kiely, M. C. (1995). Parental bereavement after suicide and accident: a comparative study. *Suicide and Life-Threatening Behavior*, 25, 489–498.
- Snow, B. R., Stellman, J. M., Stellman, S. D., & Sommer, J. F. (1988). Post-traumatic stress disorder among American Legionnaires in relation to combat experience in Vietnam. *Environmental Research*, 47, 175–195.
- Solomon, S., & Canino, G. (1990). Appropriateness of the DSM-III-R criteria for post-traumatic stress disorder. *Comprehensive Psychiatry*, 31, 227–237.
- Spitzer, R. L., Williams, J. B. W., Gibbon, M., & First, M. B. (1990). *User's guide for the Structured Clinical Interview for DSM-III-R*. Washington, DC: American Psychiatric Press.
- Stevens-Guille, M. E. (1999). Intersections of grief and trauma: family members' reactions to homicide. In C. R. Figley (Ed.), *Traumatology of grieving: conceptual, theoretical, and treatment foundations* (pp. 53–70). Philadelphia, PA: Brunner-Mazel.
- Stroebe, W., & Stroebe, M. S. (1993). Determinants of adjustment to bereavement in younger widows and widowers. In: M. S. Stroebe, W. Stroebe, & R. O. Hansson (Eds.), *Handbook of bereavement: theory, research, and intervention* (pp. 208–226). Cambridge, England: Cambridge University Press.
- Thompson, M. P., Norris, F. H., & Ruback, R. B. (1998). Comparative distress levels in inner-city family members of homicide victims. *Journal of Traumatic Stress*, 11, 223–241.
- Vachon, M. L. S., Rogers, J., Lyall, W. A. L., Lancee, W. J., Sheldon, A. R., & Freeman, S. J. J. (1982). Predictors and correlates of adaptation to conjugal bereavement. *American Journal of Psychiatry*, 137, 998–1002.
- van der Wal, J. (1989). The aftermath of suicide: a review of empirical evidence. *Omega*, 20, 149–171.
- Zisook, S., Chentsova-Dutton, Y., & Shuchter, S. R. (1998). PTSD following bereavement. *Annals of Clinical Psychiatry*, 10, 157–163.
- Zisook, S., & Shuchter, S. R. (1991). Depression through the first year after the death of a spouse. *American Journal of Psychiatry*, 148, 1346–1352.

