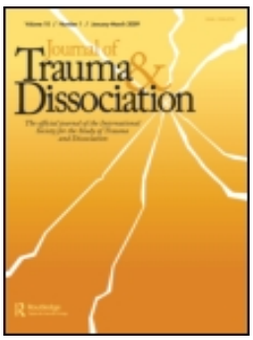

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Paul A. Boelen PhD

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Peritraumatic Distress and Dissociation in Prolonged Grief and Posttraumatic Stress Following Violent and Unexpected Deaths

PAUL A. BOELEN, PhD
Department of Clinical and Health Psychology, Utrecht University, Utrecht, The Netherlands; and Arq Psychotrauma Expert Group, Diemen, The Netherlands

This study examined associations between the violence of a loss and the suddenness of a loss and symptom levels of prolonged grief disorder (PGD) and posttraumatic stress disorder (PTSD) after the death of a loved one. A further aim was to investigate whether peritraumatic distress (i.e., fear, helplessness, and horror) and peritraumatic dissociation mediate the emotional impact of violent losses and unexpected losses. We obtained self-reported data from 265 individuals bereaved in the previous 3 years by losses due to violent causes (17%) or illness (83%). Outcomes showed that participants who experienced violent losses (due to homicide, suicide, or accident) reported more PGD symptoms and PTSD symptoms compared to those confronted with illness loss. In this latter group, greater perceived unexpectedness was positively associated with PGD severity and PTSD severity. Multiple mediation analyses showed that the impact of violent loss and unexpectedness of the loss on PGD severity and PTSD severity was fully mediated by peritraumatic distress and dissociation; peritraumatic helplessness and peritraumatic dissociation (but not peritraumatic fear and horror) emerged as unique mediators. Findings suggest that both violent and unexpected losses exacerbate postloss psychopathology, which is at least partially because of such losses yielding more intense acute helplessness and dissociative responses.

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Address correspondence to Paul A. Boelen, Department of Clinical and Health Psychology, Utrecht University, P.O. Box 80140, 3508 TC Utrecht, The Netherlands. E-mail: P.A.Boelen@uu.nl

KEYWORDS violent death, sudden death, grief, posttraumatic stress, dissociation

Bereavement may give rise to symptoms of prolonged grief disorder (PGD) and posttraumatic stress disorder (PTSD). PGD is characterized by, for example, persistent separation distress; it is included in the appendix of the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (named *persistent complex bereavement disorder*) and considered for inclusion in the International Classification of Diseases–11 (Maercker et al., 2013). People confronted with violent deaths are at greater risk for elevated PGD symptoms and PTSD symptoms compared to people confronted with nonviolent deaths (Pearlman, Wortman, Feuer, Farber, & Rando, 2014). Traumatizing circumstances and the suddenness of the loss are two features of violent deaths that likely inflate postloss distress. It is uncertain whether suddenness itself is a risk factor for poor bereavement outcome. For instance, Valdimarsdottir, Helgason, Fürst, Adolfsson, and Steineck (2004) but not Kaltman and Bonanno (2003) found perceived suddenness of loss to be associated with postloss distress among people whose loved ones died of illness. The present study further examined the impact of violence and suddenness/unexpectedness of loss on bereavement outcome.

This study was also concerned with the role of peritraumatic distress and peritraumatic dissociation in mediating the emotional impact of violent and unexpected deaths. In keeping with recent studies (Boelen, Keijsers, & Van den Hout, 2012; Bui et al., 2013), these phenomena were defined as distress and dissociation occurring at the time of the death and/or in days surrounding the death. Prompted by cognitive theories of PTSD (Bryant, 2007), it has been proposed that both distress (i.e., fear, helplessness, and horror) and dissociation (e.g., derealization) in the moments surrounding a death may interrupt the encoding and storage of memories of these moments, thereby blocking the integration of these memories with autobiographical knowledge and maintaining acute grief reactions. Two studies provided evidence for an association between peritraumatic dissociation and symptoms of PGD and PTSD (Boelen et al., 2012; Bui et al., 2013). One other study showed that peritraumatic distress exacerbated these symptoms (Hargrave, Leathem, & Long, 2012).

To our knowledge, no studies have yet examined peritraumatic distress and dissociation in a single sample and the role of peritraumatic phenomena in mediating the impact of violent and unexpected deaths. Doing so may add to experts' understanding of why such deaths exacerbate grief responses. The current study addressed these issues. We predicted that (a) violent losses would be associated with more PGD symptoms and PTSD symptoms compared to losses due to illness and that (b) peritraumatic distress and dissociation would mediate these associations. Peritraumatic distress was defined as the experience of fear, helplessness, and horror in the moments

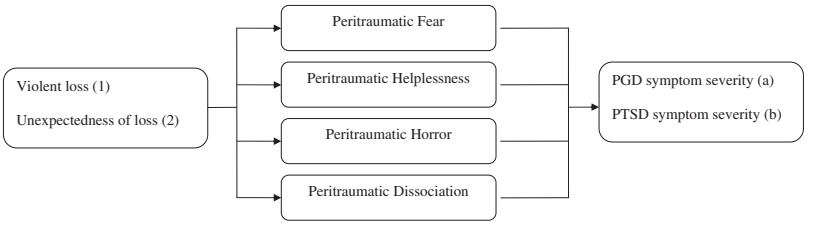

FIGURE 1 Graphic representation of the mediation models with peritraumatic fear, helplessness, horror, and dissociation mediating the linkage of violent loss with prolonged grief disorder (PGD) symptom severity (Model 1a) and posttraumatic stress disorder (PTSD) symptom severity (Model 1b) and with peritraumatic phenomena mediating the linkage between perceived unexpectedness of the loss and PGD severity (Model 2a) and PTSD severity (Model 2b).

surrounding the loss—consistent with *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM–IV*), Criterion A2 for PTSD (American Psychiatric Association, 2000) and prior research (Brewin, Andrews, & Rose, 2000; Roemer, Orsillo, Borkovec, & Litz, 1998). We controlled for trait dissociation to rule out the fact that associations of peritraumatic phenomena with PGD severity and PTSD severity were due to stable dissociative tendencies (Bryant, 2007). We also predicted that in individuals confronted with loss to illness (c) perceived unexpectedness of the loss would be positively associated with symptom levels of PGD and PTSD and (d) peritraumatic phenomena would mediate these associations. Figure 1 depicts the four multiple mediation models tested.

METHOD

Participants and Procedure

Data were available from 265 bereaved people recruited via announcements on different Internet websites all aimed at informing the general public about grief. Announcements summarized research goals and invited bereaved people who considered participating to complete an application form with their name and e-mail address (no further information was gathered on this form). After completing this application form, participants were referred to an online questionnaire or—if they so wished—were sent questionnaires in print. In total, 940 people completed the application form and 666 (70.9%) completed the questionnaires. The study was approved by a local review board. Informed consent was obtained from participants. Included in the current study were participants aged >17 years bereaved by a violent loss (i.e., due to homicide, suicide, or accident) or a loss due to illness that had occurred 1–36 months earlier. The final sample ($N = 265$) had a mean age of 45.6 years ($SD = 12.7$) and included 223 (84.2%) women. A total of 120 participants (45.3%) had had primary/secondary education, and 145 (54.7%) had been to college or university. Time since loss averaged 12.2 months

(*SD* = 10). A total of 118 (44.5%) had lost a spouse/partner, 21 (7.9%) a child, and 126 (47.5%) some other relative. Losses were due to violent causes in 45 cases (17%) and illness in 220 cases (83%).

Measures

The Prolonged Grief Disorder scale (Boelen et al., 2012) was used to tap PGD symptoms. It includes all proposed criteria for PGD—that is, one separation distress symptom, nine cognitive/emotional symptoms, and one functional impairment symptom (Prigerson et al., 2009). Participants rated the occurrence of symptoms in the preceding month on 5-point scales (1 = *never,* 5 = *always*). In this sample, the alpha was .90.

The PTSD Symptom Scale Self-Report version (Foa, Riggs, Dancu, & Rothbaum, 1993) was used to assess (*DSM–IV*-based) PTSD symptoms associated with the loss. Respondents rated symptom frequency on 4-point scales (0 = *not at all,* 4 = *five or more times per week/almost always*). The index event was defined as "the death of your loved one" (e.g., "How often did you have unpleasant dreams/nightmares about the death of your loved one?"). In the present sample, the alpha was .88.

Perceived unexpectedness of the loss was tapped with a single item, "To what extent did you experience this death as unexpected?" rated on a 5-point scale (1 = *not at all unexpected,* 5 = *totally unexpected*).

Peritraumatic distress was assessed with three items asking participants to rate the extent to which they experienced fear, helplessness, and horror, respectively, in the days surrounding the loss on 5-point scales (1 = *not at all,* 5 = *very much*). We used this instead of a longer, validated measure such as the Peritraumatic Distress Inventory (Brunet et al., 2001) to reduce response burden, noting that such brief scales have been used in prior studies (e.g., Roemer et al., 1998).

Peritraumatic dissociation was assessed with the State Dissociation Questionnaire (Murray, Ehlers, & Mayou, 2002). Participants rated how often they experienced nine dissociative reactions (e.g., "The world around me seemed strange/unreal") in the days surrounding the death on 4-point scales (1 = *not at all,* 4 = *very strongly*). The alpha was .90.

Trait dissociation was assessed using the Trait Dissociation Questionnaire (Murray et al., 2002), which asked participants to rate the occurrence of 10 dissociative experiences (e.g., "I feel distant and cut off from others around [me]") on 6-point scales (1 = *never,* 6 = *always*). The alpha in this sample was .84.

RESULTS

A total of 36 participants (13.6%) passed the threshold for PGD caseness according to Prigerson et al.'s (2009) scoring rule, with a score of >3 on

the separation distress item, four cognitive/emotional symptoms, and functional impairment item. Moreover, 52 (19.6%) passed the threshold for PTSD caseness according to the *DSM–IV*-based scoring rule proposed by Brewin et al. (2000), with symptom scores of ≥2 on at least one reexperiencing, three avoidance, and two hyperarousal symptoms. Note that this number only provides an *indication* of PTSD caseness because for most participants the death of their loved one did not qualify as Criterion A trauma as per the *DSM–IV* (American Psychiatric Association, 2000).

Table 1 shows correlations between mode of death (1 = violent, 0 = illness) and PGD symptoms and PTSD symptoms, and between the other variables assessed. As shown, PGD severity, PTSD severity, and the four peritraumatic phenomena were significantly higher after violent loss (even at a Bonferroni-corrected p value of .05/6 = .01).

Next we examined whether the impact of violent loss on PGD severity and PTSD severity was mediated by peritraumatic fear, helplessness, horror, and dissociation. In so doing, we used Preacher and Hayes's (2008) procedures for multiple mediation that allow for testing the unique effects of proposed mediators while controlling their shared variance. To provide rigorous tests of the proposed models, we included all sociodemographic and loss-related variables we assessed (gender, age, education level, time since loss, kinship), as well as levels of trait dissociation, in the models as covariates.

Table 2 summarizes outcomes of the two mediation analyses with PGD severity (Model 1a) and PTSD severity (Model 1b) as consecutive dependent variables. These showed that the total effects (c paths) of violent loss on PGD severity and, as a trend ($p = .06$), PTSD severity and the total indirect effects of the dissociative phenomena ($\Sigma\ a \times b$ paths), but not the total direct effects (c' path) of violent loss on PGD severity and PTSD severity, were statistically significant. Thus, the peritraumatic phenomena fully mediated the impact of violent loss on PGD severity and PTSD severity. Confidence intervals for unique effects showed that peritraumatic helplessness and peritraumatic dissociation were unique mediators.

Next we examined the impact of perceived unexpectedness of the loss among those confronted with illness loss. Table 1 shows that greater unexpectedness was significantly associated with elevated PGD severity and, as a trend ($p = .13$), elevated PTSD severity and with peritraumatic phenomena (although not all correlations were significant at a Bonferroni-corrected p value of .05/6 = .01). Table 2 summarizes outcomes of the mediation analyses with peritraumatic phenomena mediating the impact of unexpectedness on PGD severity (Model 2a) and PTSD severity (Model 2b). The total effects of unexpectedness on PGD severity and PTSD severity (c paths) and the total indirect effects of the dissociative phenomena ($\Sigma\ a \times b$ paths), but not the total direct effects (c' paths), were statistically significant. Thus, the peritraumatic phenomena fully mediated the impact of unexpectedness, with peritraumatic helplessness and dissociation emerging as unique mediators.[1]

TABLE 1 Descriptive Data

	Total sample (N = 265)								Illness sample (N = 220)	
	Descriptives	Correlations							Descriptives	Correlations
Variable	M (SD), range	1	2	3	4	5	6	7	M (SD), range	Unexpectedness
1. Violent loss (1 = yes, 0 = no)		—								
2. PGD severity	29.2 (9.3), 11–52	.25**	—						28.2 (9.0), 11–52	.14*
3. PTSD severity	15.9 (9.7), 0–41	.17**	.81**	—					15.3 (5.5), 0–41	.10††
4. Fear	2.5 (1.4), 1–5	.20**	.33**	.34**	—				2.4 (1.4), 1–5	.20**
5. Helplessness	3.2 (1.5), 1–5	.28**	.55**	.45**	.57**	—			3.0 (1.5), 1–5	.16*
6. Horror	2.1 (1.3), 1–5	.39**	.39**	.26**	.42**	.51**	—		1.9 (1.2), 1–5	.18**
7. Peritraumatic dissociation	23.1 (8.9), 9–45	.19**	.60**	.55**	.42**	.50**	.39**	—	22.3 (8.7), 9–45	.17*

Notes: PGD = prolonged grief disorder; PTSD = posttraumatic stress disorder.
††p = .13.
*p < .05.
**p < .01.

TABLE 2 Summary of Mediation Analyses With Peritraumatic Distress and Dissociation Mediating the Impact of Violent Loss and Unexpectedness of Loss

Model	IV	Mediating variable(s)	DV	Total effect (*c*)	Direct effect (*c'*)	Total indirect effect ($\Sigma\ a \times b$)	Unique indirect effects ($a \times b$)	Bias-corrected accelerated 95% CI	
								Lower	Upper
1a	Violent loss		PGD	4.3948*	1.4147	2.9801*			
		Fear					−0.3437	−1.2288	0.1882
		Horror					0.4176	−0.3928	1.5770
		Helplessness					2.0122*	0.8816	3.4366
		Peritraumatic dissociation					0.8940*	0.1702	1.9408
1b	Violent loss		PTSD	2.1077†	0.6011	1.5066*			
		Fear					0.1447	−0.3558	−0.8051
		Horror					−0.5564	−1.5312	0.3666
		Helplessness					1.2065*	0.4083	2.3886
		Peritraumatic dissociation					0.7117*	0.0791	1.5980
2a	Unexpectedness		PGD	1.2504*	0.6019	0.6485*			
		Fear					−0.1063	−0.4077	0.0492
		Horror					−0.0492	−0.0888	0.2684
		Helplessness					0.3631*	0.0480	0.8671
		Peritraumatic dissociation					0.3425*	0.1089	0.7543
2b	Unexpectedness		PTSD	0.9772*	0.5101	0.4667*			
		Fear					0.0934	−0.0479	0.3373
		Horror					−0.0634	−0.3064	0.0515
		Helplessness					0.1744*	0.0120	0.5288
		Peritraumatic dissociation					0.2624*	0.0566	0.6193

Notes: IV = independent variable; DV = dependent variable; CI = confidence interval; PGD = prolonged grief disorder; PTSD = posttraumatic stress disorder.

† $p < .10$.

* $p < .05$.

DISCUSSION

This study examined (a) associations between violence and suddenness of a loss and symptoms of PGD and PTSD and (b) the role of peritraumatic distress and dissociation in mediating these associations. Consistent with prior findings (Kaltman & Bonanno, 2003; Pearlman et al., 2014), participants confronted with violent loss experienced more severe PGD and PTSD compared to individuals confronted with illness. Among participants confronted with illness loss, elevated unexpectedness of the loss was associated with higher PGD symptoms and (as a trend) PTSD symptoms. This accords with prior findings that lower awareness of the impending death of a loved one suffering illness inflates distress following his or her death (Valdimarsdottir et al., 2004).

We also found that the intensity of peritraumatic fear, helplessness, horror, and dissociative experiences was significantly associated with PGD severity and PTSD severity. These outcomes are consistent with other recent studies showing that initial dissociative phenomena following the death of a loved one exacerbate grief reactions (Boelen et al., 2012; Bui et al., 2013; Hargrave et al., 2012). The multiple mediation analyses showed that peritraumatic helplessness and peritraumatic dissociation independently mediated the effects of violent loss and suddenness of loss on PGD severity and PTSD severity—even when we held constant sociodemographic and loss-related variables and trait dissociation. Altogether, these findings suggest that both violent losses and unexpected illness losses exacerbate postloss psychopathology, which is—at least partially—because such losses yield a greater sense of acute helplessness and dissociative responses. That peritraumatic helplessness but not fear and horror was associated with distress severity accords with prior evidence from people confronted with different adverse events (Roemer et al., 1998).

Strengths of this study include the fact that it is the first to address peritraumatic distress and dissociation in a single sample, it relied on a large sample, and it controlled for potentially important sociodemographic and loss-related variables as well as for trait dissociation. This study also has limitations. First, current emotional distress may have biased retrospective estimates of peritraumatic phenomena; hence, conclusions remain tentative pending replication in prospective longitudinal studies. Second, our reliance on self-report measures may have inflated correlations between variables. Third, our assessment of peritraumatic emotions was limited because I only assessed three emotions central to *DSM–IV*-based PTSD criteria and used newly devised items. More research is needed to examine the role of a wider range of peritraumatic emotions, ones with specific relevance to bereavement, preferably using validated measures. Finally, caution should be taken in generalizing the current findings, given that we used a self-selected, predominantly female sample and that relevant variables, including

diagnostic caseness, prior trauma exposure, duration of illness, and receipt of treatment and social support, were not assessed.

Notwithstanding these considerations, the current findings suggest that distress and dissociation in the initial moment after the death of a loved one contribute to PGD symptoms and PTSD symptoms and play a mediating role in elevating distress after violent and unexpected deaths. These findings have implications for the treatment of postloss psychopathology, provided they are replicated in prospective studies. Addressing memories of initial moments surrounding the death—using, for example, imaginary exposure—may be an important ingredient of PGD treatment, particularly when the death was violent or experienced as highly unexpected.

NOTE

1. In Model 1b in Table 2, the total effect of violent loss on PTSD severity was only marginally significant ($p = .06$). Moreover, as shown in Table 1, unexpectedness only trended toward a significant association with PTSD severity ($p = .13$). However, significant associations between independent and dependent variables are not necessary for mediation to occur (Preacher & Hayes, 2008).

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