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Associations of Dimensions of Anger With Distress Following Traumatic Bereavement

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Objective: A prior study with people exposed to a traumatic event indicated that posttraumatic anger is a multidimensional construct that consists of five factors comprising anger at (a) the criminal justice system, (b) other people, (c) the self, and (d) a perpetrator and (e) a desire for revenge. Preliminary evidence shows that anger at the self and perpetrators is related to posttraumatic stress disorder (PTSD) symptoms. Expanding the focus from trauma victims to people exposed to a traumatic loss of a significant other, for example, due to road traffic accidents, may enhance our knowledge on factors that are amenable to change in the treatment of prolonged grief disorder (PGD) and PTSD. ***Method:*** We examined the (a) factor structure of the 20-item Posttraumatic Anger Questionnaire in 209 Dutch people bereaved by road traffic accidents using confirmatory factor analysis and (b) associations between the posttraumatic anger factors and PGD and PTSD using structural equation models. ***Results:*** The expected five-factor structure of the Posttraumatic Anger Questionnaire was supported. Anger at the self was related to greater PGD ($\beta = .35$) and PTSD ($\beta = .50$) symptoms over and above known risk factors of distress. A desire for revenge ($\beta = .20$) was uniquely and positively associated with PTSD symptoms. ***Conclusion:*** Pending replication of our findings in longitudinal studies, we conclude that anger subtypes relate differently to distress after traumatic loss. Anger toward the self seems the most detrimental type of anger and may therefore be an important target in treatment.

Clinical Impact Statement

Anger is a common grief reaction. While anger is not necessarily pathological, it may exacerbate symptoms of grief and traumatic stress when it persists. In this cross-sectional study among 209 people bereaved by traffic accidents, we confirmed the five-factor structure of a questionnaire assessing five anger targets, namely anger directed at (a) the criminal justice system, (b) other people, (c) the self, and (d) perpetrators and (e) a desire for revenge. We found that anger at the self was related to greater prolonged grief and posttraumatic stress symptoms. This may be an important target in treatment.

Keywords: anger, bereavement, grief, angry, posttraumatic stress

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An estimated 3%–4% of people experience grief reactions after the nonviolent death of a significant other that are so intense and severe that treatment may be indicated (Rosner et al., 2021). Following unexpected, violent deaths, even more (up to one in two) people may develop pervasive grief reactions (Djelantik et al., 2020). These types of grief reactions are referred to as persistent complex bereavement disorder in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) and prolonged grief disorder (PGD) in the *DSM-5* text revision (*DSM-5-TR*; American Psychiatric Association, 2020) and *International Classification of Diseases* (11th rev.; *ICD-11*; World Health Organization, 2018). PGD is characterized by intense yearning for the deceased and additional cognitive (e.g., preoccupation with thoughts), affective (e.g., intense sadness), and behavioral (e.g., avoidance) symptoms. When these symptoms are present for at least 12 months after a loss and cause disturbances in daily life, a diagnosis of PGD according to the *DSM-5-TR* may apply (American Psychiatric Association, 2020). Sudden or violent losses increase the risk of disturbed grief reactions, as well as comorbid posttraumatic stress disorder (PTSD) symptoms (Heeke et al., 2019; Komischke-Konnerup et al., 2021). Several factors may account for PGD and PTSD following the sudden loss of a loved one, and one of these may be anger. Indeed, feelings of anger, for instance, toward the legal justice system, others, or oneself, have been reported by people who have lost loved ones and might partly explain the elevated risk for developing PGD and PTSD after the sudden or violent loss of a loved one (van Denderen et al., 2014).

Anger is a symptom of PGD and PTSD (American Psychiatric Association, 2013, 2020) but has also been considered as a maintaining mechanism of elevated PGD and PTSD. Different manifestations and conceptualizations of anger have been proposed, including state anger or trait anger (referring to experiencing current anger feelings versus experiencing anger over a prolonged period time; Spielberger, 1988). Furthermore, anger may vary from anger in (that is, directed inward or suppression of anger) to anger out (that is, aggressive behavior) or anger control (that is, regulation of anger; Spielberger et al., 1988). Last, anger may be assessed as being context specific (such as posttraumatic anger; Orth & Maercker, 2009) or nonspecific (that is, anger-related thoughts; Spielberger et al., 1995). Meta-analytic research in people exposed to trauma has shown that various types of anger are related to greater PTSD levels (Orth & Wieland, 2006), even while taking the content overlap into account by removing items referring to anger from the PTSD measure. Some longitudinal studies have shown that anger in, anger out, anger control, and anger-related thoughts predicted increased PTSD levels over time when controlling for baseline PTSD levels (Ehlers et al., 1998; Feeny et al., 2000). Another study tested longitudinal bidirectional associations between state anger and PTSD and found that PTSD symptom levels predicted increased state anger over time, but not vice versa, in a sample of assault victims (Orth et al., 2008). A prospective study in a military sample showed that predeployment trait anger predicted greater PTSD symptoms postdeployment and not vice versa. This effect, however, disappeared when controlling for neuroticism (Lommen et al., 2014).

Further examination of the role of anger after trauma exposure is relevant because it may reveal targets for treatment. For instance, prior research has demonstrated that patients who reported more anger prior to treatment benefited less from trauma-focused treatment compared to patients experiencing less anger (Foa et al., 1995). This might be explained by the notion that anger is used as a defense mechanism to subjective threat, resulting in hyperarousal symptoms and activation of the sympathetic nervous system (see meta-analysis for an overview; Orth & Wieland, 2006). Once this "fight response" is activated, anger may yield a sense of control or mastery over the situation and may therefore be seen as an avoidance strategy for dealing with fear (Boelen et al., 2015; Feeny et al., 2000). It may therefore be important to address anger in treatment, for instance, by using coping and exposure techniques to tackle this defensive state in order to enhance treatment outcomes.

Anger is a common and normal response to unnatural, violent deaths of loved ones. Not only is this a typical response in cases where another person is responsible for the death (for example, in case of homicide), but it can also be observed when the death occurred by chance (for example, in case of a fatal traffic accident); in the latter instances, it may be, for example, focused on institutions that failed in providing safety, higher powers that did not prevent the accident, or people's vulnerability in general. While anger is not necessarily pathological in itself, it may exacerbate symptoms of grief and traumatic stress when it persists. For instance, ruminative thinking about other people or third parties who are held accountable for the death may prevent emotional processing of the loss (Boelen et al., 2015). Also, expressions of anger may impede friends and family in providing emotional support needed to adjust to loss (Diong et al., 2005). The role of anger and related constructs in adjustment to traumatic loss is a relatively unexplored area. One study showed that revenge thoughts and feelings (concepts related to anger) were significantly correlated with PGD severity and, to a slightly lesser extent, PTSD severity (van Denderen et al., 2014). Likewise, another study showed that anger is more common among traumatically bereaved than nontraumatically bereaved people and often co-occurs with PGD after traumatic loss (Rees et al., 2017).

To our knowledge, no studies have yet examined the association between anger and PGD and PTSD symptoms in traumatically bereaved people. The current study was designed to address this gap. In so doing, we examined the relationships between anger connected with different targets using the Posttraumatic Anger Questionnaire (PAQ), developed by Orth and Maercker (2009). Specifically, the PAQ assesses anger directed at (a) the criminal justice system, (b) other people, (c) the self, and (d) perpetrators, as well as (e) a desire for revenge. In their cross-sectional study among victims of sexual and nonsexual assault, Orth and Maercker (2009) found support for the five proposed subtypes of anger based on an exploratory factor analysis. Anger at the perpetrator was the most common type of anger. Furthermore, a regression analysis showed that anger subtypes were differentially related to PTSD such that anger at the perpetrator and the self were significantly related to PTSD severity over and above the other anger subtypes, controlling for state anger and removing the anger items from the PTSD measure.

Using data from people whose loved one died after a road traffic accident (RTA), the aims of this study were twofold. Our first aim was to examine the factor structure of the PAQ, anticipating that the five-factor structure found by Orth and Maercker (2009) would be replicated. The second aim was to explore to what extent the emerging latent anger factors were related to PGD and PTSD

levels while taking known risk factors of distress after loss into account. Following prior research (Boelen & Lenferink, 2020), we included gender, age, kinship to the deceased, and time since loss as covariates. We did not formulate a priori hypotheses regarding the associations between latent anger factors and PGD and PTSD due to a lack of prior research on this topic in bereaved samples.

Materials and Method

Participants

Data were used from an ongoing project about (the treatment of) disturbed grief in people bereaved by RTAs (TrafVic-project; Lenferink et al., 2020; Lenferink, de Keijser, et al., 2021). Dutch adults whose spouse, family member, or friend had died in an RTA could sign up for this study between December 2018 and April 2020. In total, 283 people completed the survey. Items in the PAQ referring to a perpetrator were not applicable to all participants. An answer option "not applicable" was therefore added. People who chose this answer option were not included in the current study. The sample in the current study therefore included 209 people. Most people (81%) were recruited by an invitation letter sent by Victim Support the Netherlands. Others signed up after reading about the study on social media (8%), hearing about the study from a family member or friend (6%), or other ways of recruitment (5%). Ethical approval for this study was obtained by an ethics committee from the University of Groningen. All participants provided written informed consent.

Measures

PAQ

The PAQ is a 20-item measure indexing five domains of anger (as described above). Its original version was developed and validated in a German-speaking sample of crime victims (Orth & Maercker, 2009). With consent from the developers, we translated this measure into Dutch. Two people fluent in German and Dutch used blind forward-backward translation methods. The instruction and items of the PAQ were altered such that wording referring to "assault" was replaced by "accident." As noted, for the questions referring to a perpetrator, we added the answer option "not applicable." Those who reported "not applicable" to at least two items for each subscale were not included in the current study. Outcomes of an exploratory factor analysis by Orth and Maercker (2009) aligned with their hypothesized structure, with five four-item subscales measuring the following domains: (a) anger at the criminal justice system (for example, "I was angry at the police, courts, or administration because they dealt with me without comprehension"), (b) anger at other people (e.g., "I was angry at other people because they did not prevent the accident"), (c) anger at the self (e.g., "I was angry at myself because I still feel weak and vulnerable because of the accident"), (d) anger at a perpetrator (e.g., "I was angry at the perpetrator because he caused so much harm in my life"), and (e) desire for revenge (e.g., "I imagined how I will get even with the perpetrator"; Orth & Maercker, 2009). Items are answered on a 6-point Likert scale ranging from 0 = *never* to 5 = *very often*. Cronbach's alpha for the subscales in prior research among victims of assault were .86, .68, .78, .74, and .86, respectively (Orth & Maercker, 2009).

PGD Symptom Levels

The Traumatic Grief Inventory Self-Report Plus (TGI-SR+) was used to examine PGD symptom severity as defined in the *DSM-5-TR* (APA, 2020). The 22-item TGI-SR+ is a self-report measure assessing the 10 PGD *DSM-5-TR* symptoms as well as symptoms of PGD as defined in the *ICD-11* and persistent complex bereavement disorder as defined in the *DSM-5* (Lenferink et al., 2022). People rated to what extent they experienced each grief reaction (e.g., "I felt alone or detached from other individuals") in the past months on a 5-point scale, with 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *frequently*, and 5 = *always*. For the current study, we summed scores of the items representing PGD *DSM-5-TR* criteria. Based on prior research (Lenferink et al., 2022), a score of $\geq$ 33 was used to represent clinically relevant symptom levels. Psychometric properties of the TGI-SR+ are adequate (Lenferink et al., 2022). Cronbach's alpha of the PGD *DSM-5-TR* items in the current sample was .93.

PTSD Symptom Levels

The 20-item PTSD Checklist for *DSM-5* (PCL-5) was used to measure symptoms of PTSD as per the *DSM-5* (Blevins et al., 2015; Boeschoten et al., 2014). People rated how often they experienced each symptom in the past month on 5-point scales ranging from 0 = *not at all* to 4 = *extremely*. In the instructions and items, we referred to the "death of your loved one(s) due to a traffic accident" as the index event. A cutoff score of $>$ 32 was used for an indication of clinically relevant PTSD levels (Krüger-Gottschalk et al., 2017). Cronbach's alpha in the current sample was .91.

Statistical Analyses

The factor structure of the PAQ was examined by comparing the fit of a unidimensional model with a multidimensional model using confirmatory factor analysis in Mplus (Version 8.0; Muthén & Muthén, 1998). The multidimensional model consisted of five correlated factors (i.e., anger at the justice system, third persons, the self, and perpetrators and desire for revenge). Skewness and kurtosis values of the individual anger items were all below 3 and 10, respectively, with an exception of the highly left-skewed item ("I was angry at myself because I should have behaved differently when the accident happened"). Robust maximum likelihood estimation was used. Kline's recommendations for evaluation of model fit were used (Kline, 2011). These included (a) a comparative fit index (CFI) and Tucker-Lewis index (TLI) value of higher than .90 representing acceptable fit (and values above .95 excellent fit) and (b) a root mean square error of approximation (RMSEA) with 90% confidence interval (CI) value and a standardized root mean square residual (SRMR) value of less than .10 indicating acceptable fit (and values below .05 reflecting excellent fit). As recommended for chi-square different testing (Muthén & Muthén, 2021), the scaling correction factor under chi square was used to compare the fit of the one- versus five-factor model. A maximum of six responses (3%) were missing for each item. Missing data were handled using default option in Mplus, which is full information maximum likelihood. Paired *t* tests and Cohen's *d* effect sizes

were used to examine differences in means of anger subtypes. A Bonferroni-corrected alpha level below .006 (i.e., .05/9) was considered significant for these nine pairwise comparisons.

In order to examine the associations between emerging latent posttraumatic anger factors and PGD and PTSD levels, structural equation modeling was used. PGD and PTSD levels were regressed on the posttraumatic anger factors while including known risk factors for PGD and PTSD as covariates by regressing PTSD and PGD on covariates. These covariates included gender (0 = male, 1 = female), age (in years), kinship (0 = other than spouse/child, 1 = spouse/child,), educational level (0 = lower than university, 1 = university), and time since loss (in years).

Results

Participant Characteristics

Table 1 shows the characteristics of the participants. Three out of four participants were female, half of the sample had a university degree, and one out of 10 had lost multiple others in an RTA. One third lost a child in the RTA and one fifth a partner. On average, the RTA took place 5 years earlier. About half of the people (48%) scored above the cutoff for probable caseness of PGD, and one out of four people (27%) scored above the cutoff for probable PTSD caseness.

Dimensionality of the PAQ

The fit indices for the unidimensional model and the five-factor model are shown in Table 2. The unidimensional model showed a poor fit as evidenced by low CFI and TLI values and high RMSEA and SRMR values. For the five-factor model, the CFI and TLI values were close to .90, which reflected an acceptable fit. The RMSEA and SRMR were below .10, indicating acceptable fit. The five-factor model showed a significantly better fit than the unidimensional model, corrected $\Delta\chi^2 = 242.33$ (4.41), $p < .001$.

The standardized factor loadings for the five-factor model are presented in Table 3. Associations between factors varied from $r = .24$ to .60 (see Table 3). Removing the item with factor loadings below .60 did not substantially improve the fit indices, $\chi^2(80) = 284.55$, $p < .001$, RMSEA = .11, 90% CI [.10, .10], CFI = .87, TLI = .83, SRMR = .09. We therefore retained the five-factor model including all items.

Table 1
Characteristics of Participants

Gender, *N* (%)	
Male	56 (26.8)
Female	153 (73.2)
Age, *M* (*SD*)	51.96 (13.09)
Level of education, *N* (%)	
Lower than university	115 (55.0)
University	94 (45.0)
Number of people that died due to an RTA, *N* (%)	
1	192 (91.9)
2	13 (6.2)
3	2 (1.0)
4	2 (1.0)
Deceased relative is my. . ., *N* (%)	
Partner/spouse	44 (21.1)
Child	76 (36.4)
Parent	35 (16.7)
Sibling	34 (16.3)
Other	20 (9.6)
Witnessed the RTA, *N* (%)	
No	169 (90.4)
Yes	18 (9.6)
Time since loss in years, *M* (*SD*)	4.63 (5.69)
PGD levels, *M* (*SD*)	31.40 (8.93)
PTSD levels, *M* (*SD*)	23.06 (15.64)

Note. $N = 209$. PGD = prolonged grief disorder; PTSD = posttraumatic stress disorder; RTA = road traffic accident.

Intensity of Anger Across the Five Anger Domains

Mean scores (and standard deviations) of items representing the five anger types are also presented in Table 4. Paired *t* tests showed that mean levels of anger at perpetrators was higher than anger at the justice system, $t(208) = 9.68$, $p < .001$, $d = .66$, anger at third persons, $t(208) = 7.43$, $p < .001$, $d = .53$, anger at oneself, $t(208) = 9.25$, $p < .001$, $d = .79$, and a desire for revenge, $t(208) = 9.96$, $p < .001$, $d = .56$. In addition, mean levels of anger at third persons were significantly higher than anger at oneself, $t(208) = 4.87$, $p < .001$, $d = .33$. All other pairwise comparisons were nonsignificant (all $ps > .006$).

Associations Between Posttraumatic Anger and PGD and PTSD Symptom Levels

In a structural equation model, we regressed PGD and PTSD symptom levels on the five latent posttraumatic anger factors while controlling for the effects of gender, educational level, kinship to the deceased, and time since loss. The standardized regression coefficients are shown in Table 5 and graphically displayed in Figure 1. Anger toward oneself was the only anger domain that was significantly associated with symptom levels of PGD. Anger toward oneself and a desire for revenge were both significantly related to PTSD levels.

We reran the models excluding items from the TGI-SR+ (Item 8; now only Item 2 was used to represent Symptom C4) and PCL-5 (Item 15) that showed content overlap with the PAQ. The findings did not change meaningfully; similar significant associations were found (detailed outcomes are available on request).

Discussion

This is one of the first studies examining the associations of anger with PGD and PTSD symptoms in bereaved people and the first study investigating the specific relationships between anger directed at different targets and PGD and PTSD. Data were available from over 200 bereaved people, mostly people who were women, middle aged, and confronted with the death of a partner or child in an RTA 4 years ago, on average. Anger was assessed using the PAQ, a measure designed to capture targets of anger, including anger at the justice system, third persons, the self, and perpetrators and anger expressed as a desire for revenge (Orth & Maercker, 2009). Our first goal was to examine if these anger domains were distinguishable in our traumatically bereaved sample. That was indeed the case. Outcomes of our confirmatory factor analysis confirmed that a unitary model did not fit the data, whereas a model with PAQ items representing the five dimensions

Table 2
Fit Indices Factor Models Posttraumatic Anger Questionnaire

Model	CFI	TLI	RMSEA [90% CI]	SRMR	AIC	BIC	SS-BIC	Chi square	*df*
1-factor model	0.553	0.500	0.158 [0.149, 0.167]	0.131	13,995.57	14,196.11	14,005.99	1,055.38	170
5-factor model	0.857	0.830	0.092 [0.082, 0.102]	0.092	12,946.89	13,180.85	12,959.05	443.31	160

Note. $N = 209$. AIC = Akaike information criterion; BIC = Bayesian information criterion; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; SS-BIC = sample size adjusted Bayesian information criterion; TLI = Tucker-Lewis index; CI = confidence interval.

they were designed to measure fit the data well. The findings indicate that Orth and Maercker's (2009) findings of a five-factor structure of posttraumatic anger, observed in a heterogenous (non-bereaved) traumatized sample, are generalizable to people confronted with traumatic bereavement. Our application of confirmatory, rather than exploratory, factor analyses provides an important extension of these findings. This means that similar anger domains are distinguishable across people confronted with trauma or loss. This is not surprising because both are potential traumatic events that are associated with anger. Furthermore, in the wording of the PAQ, items belonging to the same factor start in a similar manner (e.g., all items belonging to the factor "anger at perpetrator" start with "I was angry at the perpetrator because. . ."). The similarity in construction of the items within each subscale may increase the likelihood of finding support for the intended factor structure.

A second goal of our study was to examine the linkage of the anger domains tapped by the PAQ with symptom levels of both PGD and PTSD. Findings showed that anger at the self was the only anger domain uniquely associated with PGD severity when controlling the shared variance between anger domains and between PGD and PTSD severity. Items measuring anger at the self reflect both self-blame for not having prevented the accident as well as a sense of anger regarding one's vulnerability (see Table 3). Interestingly, Field et al. examined expressions of blame toward the self and blame toward the deceased person among people who lost a partner and found more severe grief to coincide with elevated self-blame but not blame toward the deceased (Field et al., 2000). Taken together, findings suggest that anger at the self in the context of loss can be meaningfully distinguished from anger directed at external targets and appear to contribute to elevated grief. Grieving is all about adjusting one's roles, self-view, and identity to separation from a loved one that, in part, defined these roles, view, and identity (Maccallum & Bryant, 2013). Therefore, speculatively, the linkage of persistent grief with self-focused anger may stem from a strong focus on the self and one's internal world more than the external world.

With respect to PTSD severity, we found anger at the self and a desire for revenge (but not anger at the justice system, third parties, or perpetrators) to be related with symptom levels. Interestingly, Orth and Maercker (2009) found anger at the self and anger at the perpetrator to be associated with PTSD severity in their

Table 3
Standardized Factor Loadings of Five-Factor Model of Posttraumatic Anger Questionnaire

Item	Anger at justice system	Anger at third persons	Anger at self	Anger at perpetrator	Desire for revenge
I was angry at the police, courts, or administration because					
They did not prevent the accident.	.556				
They did not do their work well enough.	.885				
They dealt with me without comprehension.	.853				
They only care about the perpetrators and not the victims.	.746				
I was angry at other people because					
They did not prevent the accident.		.539			
They treated me badly in the time since the event.		.800			
They did not show understanding for my situation.		.814			
They had the good luck not to become a victim of a crime.		.516			
I was angry at myself because					
I did not prevent the accident.			.474		
I should have behaved differently when the accident happened.			.495		
I still feel weak and vulnerable because of the accident.			.898		
I cannot cope with the event as well as I would expect myself to.			.822		
I was angry at the perpetrator because					
He caused so much harm in my life.				.887	
My well-being was so unimportant to him.				.900	
He fails to accept his guilt.				.938	
He behaved badly even in the time after the accident.				.954	
I imagined					
How the perpetrator would be a victim one day.					.772
How the perpetrator will once really have to suffer.					.763
How I will pay back the perpetrator for what he or she did to me.					.990
How I will get even with the perpetrator.					.965

Note. $N = 209$.

Table 4
Internal Consistency, Means (Standard Deviations), and Bivariate Associations Between Subtypes of Anger

Anger subtype	α	*M* (*SD*)	Anger at third persons	Anger at self	Anger at perpetrator	Desire for revenge
Anger at justice system	.841	3.38 (5.02)	.391***	.242**	.582***	.516***
Anger at third persons	.739	4.30 (4.72)		.561***	.511***	.336***
Anger at self	.763	2.83 (4.07)			.275***	.245**
Anger at perpetrator	.953	7.69 (7.67)				.598***
Desire for revenge	.939	3.81 (6.22)				

Note. $N = 209$.
** $p < .01$; *** $p < .001$.

heterogenous (nonbereaved) traumatized sample. Our findings echo theirs to the extent that, in both studies, anger at third persons and the justice system was less strongly directly related to traumatic stress than anger at the self and the people held accountable for the traumatic event. We found the externalized anger to manifest in a desire for revenge, whereas Orth and Maercker (2009) found this to manifest in anger at the perpetrator; this difference might be due to most (i.e., 56%) participants in the latter study knowing the perpetrator, while in our study, the perpetrator/persons held accountable were sometimes unknown. Last, the fact that we found that a desire for revenge was related to PTSD, but not PGD, offers support that while PGD and PTSD are strongly associated, they differ meaningfully. This is in line with findings from a recent factor analytic study including a partly overlapping sample that showed that PTSD and PGD are related yet distinct (Lenferink, van den Munckhof, et al., 2021).

Importantly, although our measures of PGD and PTSD symptomatology included anger items, results did not meaningfully change when we removed these items. Thus, the impact of anger on these symptoms was not just a measurement artifact stemming from anger being included among the PGD and PTSD symptoms. It is also noteworthy that, of all anger domains, statements on anger at the perpetrator were most strongly endorsed (similar to findings of Orth and Maercker, 2009), while these did not emerge as unique correlates of PGD and PTSD severity in our structural model. This is relevant as it shows that expressions of anger most strongly expressed are not necessarily the ones most strongly driving emotional distress.

Table 5
Standardized Regression Coefficients for Measurement and Structural Model Including Covariates

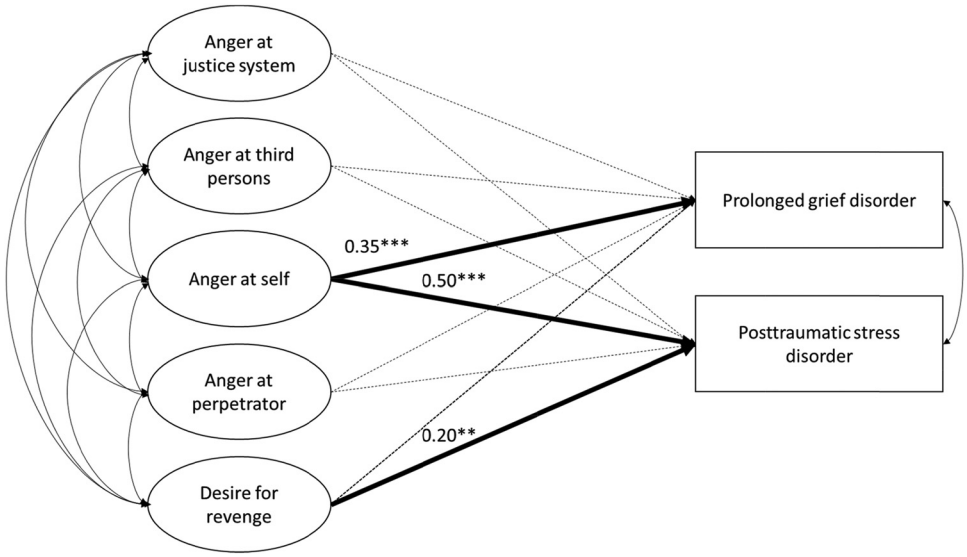
Variables	β	*SE*	*p* value
Symptom levels of prolonged grief disorder			
Anger at justice system	0.003	0.073	.967
Anger at third persons	0.163	0.089	.067
Anger at self	0.346	0.073	<.001
Anger at perpetrator	0.146	0.081	.070
Desire for revenge	0.106	0.068	.117
Gender (1 = female)	0.190	0.051	<.001
Age in years	0.065	0.058	.260
Kinship (1 = deceased is partner or child)	0.313	0.055	<.001
Education (1 = university)	−0.115	0.055	.037
Time since loss in years	−0.139	0.074	.059
Symptom levels of posttraumatic stress disorder			
Anger at justice system	0.095	0.070	.172
Anger at third persons	0.151	0.093	.104
Anger at self	0.502	0.077	<.001
Anger at perpetrator	0.048	0.073	.509
Desire for revenge	0.201	0.069	.004
Gender (1 = female)	0.180	0.051	<.001
Age in years	0.065	0.058	.260
Kinship (1 = deceased is partner or child)	0.132	0.049	.007
Education (1 = university)	0.062	0.048	.197
Time since loss in years	−0.124	0.035	<.001

Note. $N = 207$. Two people had missing data on covariates and were excluded from analyses. Standardized regression coefficients for model including covariates.

Several limitations should be taken into account when interpreting findings. First and foremost, considering that this was a cross-sectional study, conclusions about the direction of causality between anger and PGD and PTSD following deaths of loved ones in RTAs cannot be drawn. There is evidence of a reciprocal linkage between posttraumatic anger and PTSD in (nonbereaved) traumatized samples (Orth et al., 2008); it would be interesting for future longitudinal studies to examine if similar reciprocal associations exist between multidimensional anger and emotional distress following traumatic bereavement. A second potential limitation is that we did not include trait and state anger nor other concepts conceptually related to posttraumatic anger; thus, the importance of domains of posttraumatic anger vis-à-vis other domains still warrants further scrutiny. Third, 74 people who answered "not applicable" to the PAQ items referring to a "perpetrator" were excluded from this study. This study therefore only includes people bereaved by an RTA who identify themselves with the word "perpetrator." Reducing our sample size may have resulted in a loss of statistical power to detect meaningful associations. However, it is unlikely that it impacted our findings because we found that anger toward a perpetrator was not uniquely linked to PGD and PTSD, while it was the most strongly endorsed subtype of anger in our sample. Fourth, women, people who are middle aged, people who hold a university degree, and those whose loss took place less recently (i.e., 5 years on average) were overrepresented in our sample. Thus, generalization of our findings to men, people who are not middle aged, people without a university degree, and people who are more recently bereaved must be done with caution.

Notwithstanding these considerations, the current study offers several contributions to practice and literature. First, it adds to prior evidence that a person's anger following negative life events may have different targets, rather than being a unidimensional construct. Second, it provides valuable evidence showing that different anger domains are differentially associated to psychopathology following deadly RTAs, with self-directed anger contributing to persistent separation distress and both self-direct anger and a desire for revenge fueling traumatic distress. Pending future evidence that anger maintains psychopathology following fatal

Figure 1
Confirmatory Factor Analysis and Structural Equation Modeling



Note. Dashed line represents nonsignificant associations. To ease interpretation, covariates (while included in the model) are not displayed.
** $p < .01$. *** $p < .001$.

RTAs, the findings potentially have clinical implications. For instance, in treating elevated PGD, attention should be paid to targeting self-directed anger. Self-directed anger is closely linked to guilt. The latter is positively linked to PGD and PTSD in, for example, suicide bereaved people (Wagner et al., 2021). In people with PTSD, imagery rescripting plus imaginal exposure have shown to be more effective in reducing guilt than imaginal exposure alone (Arntz et al., 2007). Examining the effects of imagery rescripting for targeting self-directed anger and guilt in treatment for PGD is a relevant but unexplored area.

In alleviating PTSD, attention should also be paid to alleviating the desire for revenge, which might drive bereaved victims to engage in aggression and violence. Interventions used may include cognitive restructuring to target exaggerated responsibility and guilt and underlying self-directed anger and teaching anger management skills (Taft et al., 2017). In addition, considering that anger may serve to deflect from the emotional pain connected with the loss, helping a person to process the loss could reduce the need to engage in angry thoughts, feelings, and actions. Continuing to examine manifestations and consequences of different anger domains among people confronted with traumatic bereavement seems useful in order to further increase our understanding of processes underlying their suffering and to improve treatment options to alleviate that suffering.

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