Further validation of the Traumatic Grief Inventory-Self Report (TGI-SR): A measure of persistent complex bereavement disorder and prolonged grief disorder

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ABSTRACT

The Traumatic Grief Inventory Self-Report version (TGI-SR) is an 18-item self-report measure. It was designed to assess symptoms of Persistent Complex Bereavement Disorder (PCBD) included in Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 and Prolonged Grief Disorder (PGD) proposed by an international group of experts in grief. The research in this article used data from a bereaved patient sample and people who lost loved ones in the Ukrainian airplane crash in July 2014. Findings indicated that the TGI-SR is a reliable and valid tool to assess disturbed grief in research and to identify people needing a more comprehensive assessment of their grief in clinical settings.

Introduction

The death of a loved one is a ubiquitous experience. In a significant number of people, losing someone close evokes severe emotional distress. Psychiatric disorders most commonly diagnosed among bereaved people with significant mental health problems include Posttraumatic Stress Disorder (PTSD), major depression, and conditions of disturbed, non-normative grief (Maercker et al., 2013). In recent years, disturbed grief is referred to as Persistent Complex Bereavement Disorder (PCBD) in terms of Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 (American Psychiatric Association, 2013) and Prolonged Grief Disorder (PGD) in terms of the International Classification of Diseases (ICD) jargon (ICD, 2017). To some extent, PTSD, depression, and PCBD/PGD include overlapping symptoms. However, bereavement-related PTSD mainly involves distressing thoughts, feelings, and memories associated with the circumstances of the death, depression centers around dysphoria, anhedonia, and impaired hope, and PCBD/PGD focuses on distress and disbelief associated with the permanence of the separation.

There is evidence that PCBD/PGD is distinct from PTSD and depression and requires specific treatments (Boelen & Smid, 2017a; Shear, 2015). At the same time, debates about the naming and symptoms of PCBD/PGD are ongoing. In recent years, four descriptions of disturbed grief have dominated the literature. First, DSM-5 includes PCBD, encompassing symptoms under the headings of separation distress, reactive distress, and social/identify confusion. Second, Prigerson et al. (2009) proposed criteria for PGD, including separation distress plus several cognitive, emotional, and behavioral symptoms; these criteria were proposed by a large panel of experts, integrated earlier proposals from Prigerson et al. (1999) and Horowitz et al. (1997), and were found to have good construct validity in a field trial (Prigerson et al., 2009). Third, the forthcoming 11th edition of the ICD will include a condition that is also named PGD and that resembles Prigerson et al. (2009)'s criteria, but with a shorter list of symptoms (ICD, 2017). Fourth, Shear et al. (2011) proposed criteria for Complicated Grief that overlap with PCBD and PGD criteria, but also include items not listed among the PCBD and PGD criteria. Maciejewski, Maercker, Boelen & Prigerson (2016) showed that in terms of symptomatology, reliability, validity, and estimated prevalence rates PBCD as per DSM-5, PGD as per

Prigerson et al. (2009), and PGD as per ICD-11 are essentially the same entity, apart from the fact that PCBD can be diagnosed after 12, and the other conditions after six months beyond the loss.

Assessment of PCBD and PGD

The assessment of PCBD and PGD has been limited by available measures. The most commonly used measure of disturbed grief, the Inventory of Complicated Grief (ICG; Prigerson et al., 1995), includes most but not all symptoms of PCBD and PGD. Other measures of grief (e.g. Texas Revised Inventory of Grief; Futterman, Holland, Brown, Thompson, & Gallagher Thompson, 2010) focus on normative rather than disturbed reactions (e.g. sadness). The recently developed Persistent Complex Bereavement Disorder Inventory taps into PCBD but not PGD (Lee, 2015).

In the Netherlands, Boelen and Smid (2017b) designed the Traumatic Grief Inventory Self Report Version (TGI-SR) assessing symptoms of PCBD and PGD as per Prigerson et al. (2009). Items (translated from Dutch into English) are shown in Table 2 and Appendix 1. The TGI-SR includes all 16 symptoms of PCBD, one additional symptom of PGD that is not part of the PCBD criteria (i.e. item 12: "feeling stunned/shocked") and one item tapping "functional impairment" (i.e. item 13), included in criteria-sets for both PCBD and PGD. Respondents are instructed to rate the frequency of symptoms during the previous month, on five-point scales (1 = "never," 2 = "rarely," 3 = "sometimes," 4 = "frequently," and 5 = "always") while keeping in mind a recent loss, or, in case of multiple loss, one particular loss that was most distressing. The TGI-SR can be administered as consisting of two parts (see Appendix 1): part 1 is an inventory of lost loved ones and part 2 includes 18 items measuring grief reactions related to the most painful loss. The measure can be used to (i) obtain PCBD and PGD severity scores, (ii) make a provisional PCBD diagnosis and/or a provisional PGD-diagnosis signaling a need for further (interview-based) clinical assessment, (iii) monitor changes in symptom levels of PCBD and PGD in treatment and research, and (iv) assess the types of losses people have experienced (particularly relevant in samples exposed to multiple loss).

Boelen & Smid (2017b) evaluated psychometric properties of the TGI-SR using data from 327 patients from a Dutch mental health care institute specialized in psychiatric care following loss and psychotrauma. Among other things, that study showed that the 18 item TGI-SR (as well as the selection of 17 items representing PCBD criteria and the selection of 11 items tapping PGD criteria as per Prigerson et al. (2009)) formed a unitary factor with strong internal consistency. Furthermore, higher scores on the TGI-SR were associated with higher scores on indices of psychopathology and lower quality of life, attesting to the concurrent validity. In support of the measures discriminant validity, items of the TGI-SR and items tapping depression formed two distinct dimensions in a confirmatory factor analysis. A further finding was that Receiver Operating Characteristic (ROC) analysis showed that a total score of >61 optimally classified participants as meeting or not meeting the criteria for provisional PCBD and PGD diagnoses.

The current study

More research is needed to establish psychometric properties of the TGI-SR across different bereaved samples. The current study investigated psychometric properties of the TGI-SR using data from two ongoing research projects conducted in the Netherlands. The first project focuses on correlates and treatment of psychopathology following loss and trauma in psychiatric patients confronted with both natural and unnatural/violent losses. The second project examines these issues among people who lost loved ones in the Ukrainian airplane disaster on July 17 2014 (Lenferink, De Keijser, Smid, Djelantik, & Boelen, 2017). Henceforth, these samples will be referred to as the Patient Sample and the Disaster-Bereaved Sample, respectively.

In both samples, we first examined the factor structure of the TGI-SR. Because there is still a need to further explore the clustering of items of the TGI-SR and because the sample sizes were too small to allow for confirmatory analyses, exploratory factor analysis (EFA) was employed. Secondly, we examined the internal consistency (in both samples) and the temporal stability of the TGI-SR (in the Disaster-Bereaved Sample). Thirdly, we evaluated the concurrent validity in both samples. We expected that different TGI-SR scores—including scores of the summed 18 items, summed 17 PCBD items, and summed 11 PGD items—would be positively and significantly associated with concurrently assessed psychopathology, including levels of depression and post-traumatic stress. Fourthly, as a preliminary evaluation of incremental validity, we used data from the Disaster-Bereaved Sample to test the prediction that TGI-SR scores were associated with functional impairment, even when controlling for the shared variance between TGI-SR scores, depression, and posttraumatic stress. Fifthly, in both samples, we examined percentages of participants

meeting criteria for provisional diagnoses of PCBD and PGD based on scores on the TGI-SR items and used Kappa statistics to examine pairwise agreement between the two diagnoses. Sixthly, as a further test of concurrent validity, we tested the hypothesis that, when comparing people meeting versus not meeting criteria for PCBD and PGD in both samples, the former groups would have higher scores on indices of concurrently assessed psychopathology than the latter group. Seventhly, as we did in our prior study (Boelen & Smid, 2017b), we used ROC analysis to determine two cut-off cores on the TGI-SR, one for a provisional diagnosis of PCBD and the second for a provisional diagnosis of PGD as per Prigerson et al. (2009). We consecutively did so using data from both samples. Lastly, we explored whether scores on the TGI-SR varied as a function of several socio-demographic and loss-related variables.

Methods

Participants and procedure patient sample

The Patient Sample included patients from Foundation Centrum '45, a specialized Dutch centre for the diagnosis and treatment of loss related and/or psychotrauma related psychopathology. Specific populations include asylum seekers and refugees, military veterans, and police officers. Foundation Centrum '45 monitors treatment outcomes by routinely administering questionnaires to patients before, during, and at the end of treatment. Since 2014, the TGI-SR has been added to these questionnaires. For the present study, we used data from 168 patients who reported that they had experienced the death of one or more loved ones and who all mastered Dutch sufficiently to complete Dutch versions of the TGI-SR and other questionnaires. The included patients completed questionnaires immediately at the start (i.e. 0–3 months after admission; $n = 31$) or during their treatment ($n = 137$). Characteristics of the total sample are shown in Table 1. Most participants were men. The mean age was 51.6 ($SD = 11.1$). Characteristics of the losses (kinship, mode of death, and time since loss) and other traumatic events participants had been exposed to were not systematically registered. Our prior study relied on data from different patients from the same institute (Boelen & Smid, 2017b).

Participants and procedure disaster-bereaved sample

The Disaster-Bereaved Sample included 167 people who lost loved ones in the Ukrainian plane disaster

Table 1. Socio-demographic and loss-related characteristics of the samples.[a]

	Patient Sample $n = 168$	Disaster-Bereaved Sample $n = 167$
Demographic characteristics		
Gender (*n* (%))		
Men	110 (65.5)	68 (40.7)
Women	58 (34.5)	99 (59.3)
Age (y) (*M* (*SD*))	51.6 (11.1)	52.5 (15.6)
Country of birth (*n* (%))		
The Netherlands	130 (77.4)	
Other country	33 (19.6)	
Patient group (*N* (%))		
Profession related trauma	66 (39.3)	
Refugees/Asylum seekers	16 (9.5)	
Other	86 (51.2)	
Educational level (*N* (%))		
Primary to medium		50 (30.1)
High (i.e. college/university level)		116 (69.9)
Number of days since loss (*M* (*SD*))		343.9 (52.8)
Closest related deceased person was (*N* (%))		
Child or spouse		49 (29.5)
Parent or sibling		61 (36.7)
Other		56 (33.7)

[a]There were occasional missing values for some variables.

that took place on the 17 July 2014, killing all 298 passengers including 193 Dutch citizens. Participants were recruited from a number of sources, including webpages and direct mailing from support organizations involved in the psychosocial care for victims. Most participants completed secured online versions of questionnaires. A minority completed paper-and-pencil versions. Details about recruitment procedures and response rates are described elsewhere (Lenferink et al., 2017). Characteristics of the total sample are shown in Table 1. Most participants were women. The mean age was 52.5 ($SD = 15.6$) years. Most participants had completed higher education (i.e. college or university). The average time since loss was approximately one year. The closest relative that had died were a child or spouse in a third of all cases, a parent or sibling in another third, and someone else (e.g. friend) in the remaining cases.

Patient sample measures

From the Patient Sample we used data from the TGI-SR and the Brief Symptom Inventory (BSI). The TGI-SR was administered as consisting of two parts (also shown in Appendix 1): part 1 was an inventory of lost loved ones and part 2 included 18 items measuring grief reactions related to the most painful loss. The BSI (Derogatis & Melisaratos, 1983; Dutch version of De Beurs, 2004) is a 53-item self-report questionnaire providing indices of the following nine symptom dimensions (current study alpha's in parenthesis): (i) somatization ($\alpha = 0.86$), (ii) obsessive-compulsivity

($\alpha = 0.87$) (iii) interpersonal sensitivity ($\alpha = 0.81$), (iv) depression ($\alpha = 0.88$), (v) anxiety ($\alpha = 0.90$), (vi) hostility ($\alpha = 0.88$), (vii) phobic anxiety ($\alpha = 0.87$), (viii) paranoid ideation ($\alpha = 0.82$), and (ix) psychoticism ($\alpha = 0.73$). The alpha of the total scale was 0.97. Respondents rate the presence of each symptom described in each item on five-point scales ranging from 0 = "not at all" to 4 = "extremely". The measure has well-established psychometric properties (De Beurs, 2004).

Measures disaster-bereaved sample

From the Disaster-Bereaved Sample, we used data from the TGI-SR (part 2 but not part 1 was administered in this sample), the Quick Inventory of Depressive Symptomatology Self Report version (QIDS-SR), the PTSD Checklist for DSM-5 (PCL-5), and the Work and Social Adjustment Scale (WSAS). In case people had lost more relatives, the TGI-SR was completed multiple times for each relative. In the current study, TGI-SRs with the highest total scores were included in the analyses. The QIDS-SR is a 16-item well-validated measure of depressive symptomatology (Rush et al., 2003). The total score (ranging from 0–26[1]) provides an index of depression severity. The alpha in the current study was 0.81. The PCL-5 (Blevins, Weathers, Davis, Witte, & Domino, 2015; Boeschoten, Bakker, Jongedijk, & Olff, 2014) is a 20-item measure of PTSD symptoms as described in DSM-5. The total score (ranging from 0–80) provides an index overall PTSD-severity. Scores representing indices of DSM-5 clusters B ("Intrusive symptoms"), C ("Avoidance"), D ("Negative alterations in cognition and mood"), and E ("Arousal and reactivity") can be obtained by summing scores of items tapping these clusters. Research has supported its reliability and validity (Blevins et al., 2015). The total scale's alpha in the current sample was 0.93. The WSAS is a five-item measure of impairments in social and work related activities (Mundt, Marks, Shear, & Greist, 2002). Scores range from 0–40, with higher scores indicating more severe impairment. Cronbach's alpha in the current study was 0.85. Because this research project was a collaborative initiative of several research institutes, not all participants completed the same measures. Specifically, 25 randomly selected participants did not complete the PCL-5 because of their participation in another study of this research project. Three further participants did not complete the PCL-5 or QIDS-SR for other reasons.

Results

Factor structure of the TGI-SR in the patient sample

We performed three exploratory factor analyses (EFAs) examining the factor structure of (a) all 18 items, (b) the 17 items of the PCBD criteria, and (c) the 11 items of Prigerson et al.'s (2009) PGD criteria (see Table 2), respectively. Analyses were performed using principal axis factoring, implemented in SPSS.[2] In all three analyses, Kaiser-Meyer-Olkin (KMO) test values were >0.90, indicating that the sample size was adequate and Bartlett's tests of sphericity were all statistically significant (at $p < 0.001$) indicating that variables were sufficiently related to perform EFAs. The EFA with all 18 items generated two factors with eigenvalues greater than 1.0 (i.e. 9.83 and 1.17), accounting for 52.43 and 4.43% of the explained variance, respectively. Similarly, the EFA with the 17 PCBD items also generated two factors with eigenvalues greater than 1.0 (i.e. 9.33 and 1.01), accounting for 52.40 and 3.55% of the explained variance, respectively. Although the eigenvalues suggested two-factor solutions, we considered that, with both all 18 items and the 17 PCBD items, the items were best conceptualized as representing one dimension, because, in the two-factor solutions, some of the items cross-loaded on both factors and interpretability of the two factors was problematic. Moreover, in both EFAs (with all 18 items and the 17 PCBD items), the scree plots indicated that one-factor solutions adequately represented the data. Finally and importantly, factor-loadings in the one-factor solution (shown in Table 2), were all high, that is >0.50. The EFA using the 11 PGD items yielded one eigenvalue greater than one (i.e. 6.54), accounting for 55.53% of the variance; factor-loadings were all high (>0.60).

Factor structure of the TGI-SR in the disaster-bereaved sample

Similar analyses were performed in the Disaster-Bereaved Sample. In all three EFAs, KMO test values were >0.87 and Bartlett's tests of sphericity were all statistically significant (at $p < 0.001$) indicating that EFAs could be performed. The EFA with all 18 items generated four factors with eigenvalues greater than 1.0 (i.e. 7.03, 1.58, 1.16, and 1.08), accounting for 36.38, 6.13, 3.58, and 3.15% of the variance, respectively. The EFA with the 17 PCBD items generated three factors with eigenvalues greater than 1.0 (6.71, 1.42, and 1.16) explaining 36.43, 5.37, and 3.75% of the variance, respectively. The EFA using the 11 PGD

Table 2. Items of the Traumatic Grief Inventory-Self Report version (TGI-SR), factor loadings, and test-retest correlations.

		PCBD criteria	PGD criteria	Patient Sample Factor loadings			Disaster-Bereaved Loss Sample Factor loadings			Stability[a]
				All items	PCBD items	PGD items	All items	PCBD items	PGD items	
1	I had intrusive thoughts and images associated with his/her death.	B3	–	0.72	0.71		0.49	0.47		0.58**
2	I experienced intense emotional pain, sorrow, or pangs of grief.	B2	–	0.75	0.74		0.66	0.65		0.73**
3	I felt a strong longing or yearning for the deceased.	B1	B	0.63	0.63	0.63	0.63	0.63	0.59	0.69**
4	I felt confusion about one's role in life, or a diminished sense of one's identity.	C11	C1	0.69	0.70	0.68	0.65	0.66	0.63	0.54*
5	I had trouble to accept the loss.	C1	C2	0.76	0.74	0.77	0.64	0.62	0.65	0.76**
6	I avoided places, objects, or thoughts reminding me of his/her death	C6	C3	0.73	0.73	0.75	0.52	0.53	0.50	0.87***
7	I found it difficult to trust others.	C8	C4	0.65	0.66	0.67	0.49	0.50	0.49	0.54*
8	I felt bitter or anger about the loss.	C4	C5	0.74	0.72	0.76	0.45	0.44	0.45	0.34
9	I experienced difficulty to move on with my life (e.g. pursue friendships and activities).	C12	C6	0.71	0.72	0.73	0.70	0.72	0.73	0.61*
10	I felt numb over the loss.	C2	C7	0.84	0.85	0.85	0.69	0.38	0.72	0.74**
11	I felt that life is meaningless or empty without the deceased.	C10	C8	0.78	0.79	0.79	0.78	0.78	0.80	0.71**
12	I felt shocked or stunned by his/her death.	–	C9	0.71	–	0.70	0.57	–	0.55	0.50
13	I noticed that my functioning (in occupational functioning, private life, and/or social life) was seriously impaired as a result of his/her death.	D	E	0.86	0.86	0.84	0.68	0.69	0.70	0.76**
14	I had intrusive thoughts and images associated with the circumstances of his/her death.	B4		0.78	0.77		0.55	0.53		0.65**
15	I had difficulties with positive reminiscing about the deceased.	C3		0.59	0.60		0.49	0.50		0.48
16	I had maladaptive appraisals about myself in relation to the deceased or the death (e.g., self-blame).	C5		0.65	0.65		0.45	0.45		0.39
17	I experienced a desire to die in order to be with the deceased.	C7		0.59	0.59		0.52	0.52		0.74**
18	I felt alone or detached from other people.	C9		0.73	0.74		0.65	0.67		0.76**

[a]Stability refers to the (Spearman Rho) correlation of scores at two occasions. PCBD: Persistent Complex Bereavement Disorder; PGD: Prolonged Grief Disorder; TGI-SR: Traumatic Grief Inventory-Self Report version.
*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

Table 3. Correlations of TGI-SR scores with indices of psychopathology.[a]

	Summed 18 TGI-SR items	Summed 17 PCBD items	Summed 11 PGD items
Patient Sample[b]			
Brief Symptom Inventory (BSI)			
Somatization	0.49	0.50	0.48
Obsessive-compulsivity	0.48	0.49	0.50
Interpersonal sensitivity	0.39	0.40	0.40
Depression	0.48	0.49	0.47
Anxiety	0.54	0.55	0.54
Hostility	0.34	0.34	0.35
Phobic anxiety	0.50	0.51	0.52
Paranoid ideation	0.51	0.52	0.54
Psychoticism	0.55	0.56	0.55
Total score	0.57	0.58	0.57
Disaster-Bereaved Sample[c]			
Depression (QIDS-SR)	0.65	0.66	0.63
PTSD total (PCL-5)	0.82	0.82	0.78
PTSD "Intrusive symptoms" (PCL-5)	0.73	0.72	0.70
PTSD "Avoidance" (PCL-5)	0.49	0.49	0.43
PTSD "Negative alterations in cognition and mood" (PCL-5)	0.70	0.71	0.69
PTSD "Arousal and reactivity" (PCL-5)	0.66	0.66	0.62

[a]All correlations are significant at $p < .0001$.
[b]In the Patient Sample correlations were based on data from $n = 168$.
[c]In the Disaster-Bereaved Sample correlations with the QIDS-SR were based on $N = 165$ and with the PCL-5 were based on $N = 139$.
PCBD: Persistent Complex Bereavement Disorder; PCL-5:PTSD Checklist for DSM-5; PGD: Prolonged Grief Disorder; QIDS-SR: Quick Inventory of Depressive Symptomatology Self Report version; TGI-SR: Traumatic Grief Inventory-Self Report version.

items generated two factors with eigenvalues greater than 1.0 (4.96 and 1.18) explaining 40.68 and 6.50% of the variance, respectively.

Inspection of the factor-loadings in the pattern matrices in the solutions with more than one factor suggested that items 1 and 14 were related, and also pointed to clustering of items 5 (difficulties accepting), 8 (anger/bitterness), and 12 (shocked/stunned). However, interpretability of other factors emerging in these solutions was difficult. Moreover, some of the items loaded on more than one-factor, further compromising interpretability. Importantly, in all three EFAs, scree plots indicated that one-factor solutions adequately represented the data and in all the one-factor solutions, all items included had factor-loadings of >0.45 on the (unitary) factor, that, according to Tabachnick & Fidell (2007) can be considered "fair". Altogether, there were some indications that the TGI-SR tapped into distinguishable dimensions of non-normative grief. However, findings were not consistent across samples and across selections of items (i.e. all 18 items, the 17 PCBD items, or the 11 PGD items). Given that all items had "fair" factor-loadings in one-factor solutions (Tabachnick & Fidell, 2007), it was deemed accurate to treat the TGI-SR as a unitary measure of non-normative grief in the rest of our analyses.

Internal consistency of the TGI-SR

Cronbach's alphas of the TGI-SR in the Patient Sample were 0.95 (all 18 items), 0.95 (17 PCBD items), and 0.93 (11 PGD items). Alphas of the TGI-SR in the Disaster-Bereaved Sample were 0.91 (all 18 items), 0.90 (17 PCBD items), and 0.88 (11 PGD items). In none of these three combinations of items (18, 17, or 11 items) and in none of both samples did the alpha increase with more than 0.05, with the deletion of one of the items.

Temporal stability of the TGI-SR

The temporal stability of the TGI-SR was examined using data from 15 participants from the Disaster-Bereaved Sample who completed the measure twice with an interval of $M = 82.9$ ($SD = 15.5$, range 36–97) days. Spearman Rho test-retest correlations for all 18 items are shown in Table 2 and ranged from (a non-significant) $\rho = 0.34$ (Item 8) to $\rho = 0.87$, $p < 0.0001$ (Item 6). The test-retest correlation for the TGI-SR total score was $\rho = 0.89$, $p < 0.0001$.

Concurrent validity

Table 3 shows correlations of the TGI-SR scores (including the summed 18 items, 17 PCBD items, and 11 PGD items) with BSI scores from the Patient Sample and QIDS-SR and PCL-5 scores from the Disaster-Bereaved Sample. All correlations were statistically significant and in the expected direction, such that higher scores on the TGI-SR were associated with higher scores on indices of psychopathology (BSI), depression, and PTSD.

Incremental validity

In the Disaster-Bereaved Sample, TGI-SR scores were significantly associated with functional impairment tapped by the WSAS. The correlation of the WSAS with the summed 18 items was 0.63, with the summed 17 PCBD-symptoms was 0.64, and with the summed 11 PGD-symptoms was 0.63 (all p's < 0.001). A regression analysis was conducted in which WSAS-scores were regressed on the total scores of the TGI-SR, QIDS-SR, and PCL-5 (entered simultaneously) to examine the prediction that disturbed grief (tapped by the TGI-SR) was associated with functional impairment, even when controlling for the shared variance between disturbed grief, depression, and PTSD. The regression model was significant ($F(3, 138) = 47.13$, $p < 0.001$) and showed that TGI-SR scores ($\beta = 0.22$, $t = 2.06$, $p < 0.05$) and QIDS-SR scores ($\beta = 0.33$, $t = 3.32$, $p < 0.01$), but not PCL-5 scores ($\beta = 0.24$, $t = 1.89$, $p = 0.06$) explained unique variance in WSAS-scores. Similar findings were obtained using the 17 items of the PCBD criteria (in that case, the β for the TGI-SR score was $\beta = 0.23$, $t = 2.17$, $p < 0.05$) and 11 items of the PGD criteria (in that case, the β for the TGI-SR score was $\beta = 0.26$, $t = 2.65$, $p < 0.01$).

Rates of participants meeting criteria for a "provisional PCBD diagnosis" and a "provisional PGD diagnosis"

We calculated the number of people meeting criteria for a "provisional diagnosis of PCBD" based on scores on the TGI-SR. We did so, treating each item rated as $4 =$ "frequently" or $5 =$ "always" as a symptom endorsed and then follow the DSM-5 based algorithm that requires endorsement of (i) ≥ 1 Criterion B item (items 1, 2, 3, and 14), (ii) ≥ 6 Criterion C items (items 4–11 and 15–18), and (iii) the Criterion D item (item 13). We also calculated the number of people meeting criteria for a "provisional PGD diagnosis" by treating each item rated as $4 =$ "frequently" or $5 =$ "always" as a symptom endorsed and then follow Prigerson et al.'s (2009) diagnostic rule which requires endorsement of (i) the Criterion B item (item 3), (ii) ≥ 5 Criterion C items (items 4–12), and (iii) the Criterion E item (item 13).

In the Patient Sample $n = 21$ (12.5%) participants met criteria for a "provisional PCBD diagnosis" and $n = 15$ (8.9%) participants met criteria for a "provisional PGD diagnosis". The pairwise agreement of these provisional diagnoses yielded a Kappa of 0.75, reflecting "substantial agreement" (Landis & Koch, 1977). In the Disaster-Bereaved Sample, $n = 11$ (6.6%)

participants met criteria for a "provisional PCBD diagnosis" and $n = 18$ (10.8%) met criteria for a "provisional PGD diagnosis". The pairwise agreement of these provisional diagnoses yielded a Kappa of 0.66, again reflecting "substantial agreement" (Landis & Koch, 1977).

Concurrent validity of "provisional PCBD diagnosis" and "provisional PGD diagnosis"

We expected that participants meeting criteria for a "provisional PCBD diagnosis" would have higher scores on indices of psychopathology (BSI) in the Patient Sample and indices of depression, PTSD, and functional impairment in the Disaster-Bereaved Sample, compared to people not meeting these criteria. Similarly, we expected participants meeting criteria for a "provisional PGD diagnosis" to have higher scores than their counterparts not meeting these criteria. Table 4 shows mean BSI-scores in the Patient Sample, as well as mean QIDS-SR, PCL-5, and WSAS scores in the Disaster-Bereaved Sample for participants meeting and not meeting criteria for a "provisional PCBD diagnosis" and for a "provisional PGD diagnosis". T-tests testing for differences are also shown. As can be seen, participants with a provisional PCBD diagnosis and a provisional PGD diagnosis scored significantly higher on all indices compared to participants not meeting criteria for provisional PCBD or provisional PGD diagnoses.

Determination of provisional cut-off scores

We determined cut-off scores for the TGI-SR that best distinguished between participants who did and did not meet criteria for a provisional PCBD diagnosis and a provisional PGD diagnosis. First, we did so in the Patient Sample. To increase the sample size, we combined the current sample of $n = 168$ with the sample of $n = 327$ from our prior study, collected from different patients from the same institute (Boelen & Smid, 2017b) yielding a total sample of $n = 495$ patients. Table 5 summarizes the outcomes. For a provisional PCBD diagnosis, the area under the curve (AUC) for the range of cut-off points was excellent (AUC $= 0.986$ (95% CI: 0.977–0.994)). A score of ≥ 61 optimally classified participants as meeting or not meeting criteria for PCBD-caseness. This cut-off had a sensitivity of 0.975 and specificity of 0.925 (Youden's index $= 0.900$), classifying 93% of all cases correctly. With respect to PGD-caseness, the ROC-analysis yielded an AUC of 0.977 (95% CI: 0.966–0.988). A score of ≥ 59 optimally classified participants as

Table 4. Differences in psychopathology between participants meeting vs. participants not meeting provisional PCBD and PGD diagnoses.

| | Meeting criteria for provisional PCBD diagnosis? | | | | | Meeting criteria for provisional PGD diagnosis? | | | | |
| | No | | Yes | | | No | | Yes | | |
	M	SD	M	SD	t	M	SD	M	SD	t
Patient Sample[a]										
Brief Symptom Inventory										
Somatization	7.84	5.73	13.86	6.06	4.28*	8.01	5.76	14.53	6.40	4.14*
Obsessive-compulsivity	11.45	5.56	17.10	5.19	4.39*	11.65	5.66	17.33	4.79	3.76*
Interpersonal sensitivity	5.86	3.58	8.81	3.63	3.53*	5.95	3.62	9.00	3.53	3.11*
Depression	10.07	5.65	16.10	5.12	4.62*	10.31	5.83	16.07	4.03	5.04*
Anxiety	10.46	5.83	16.00	5.07	4.14*	10.64	5.87	16.33	5.11	3.62*
Hostility	6.30	4.65	9.43	4.71	2.88*	6.45	4.76	9.13	4.10	2.10*
Phobic anxiety	7.95	5.74	12.29	4.76	3.30*	8.03	5.69	13.13	4.85	3.35*
Paranoid ideation	6.75	4.28	11.86	3.84	5.18*	7.01	4.46	11.27	3.58	3.59*
Psychoticism	6.86	3.89	11.62	3.92	5.25*	7.10	4.11	11.00	3.30	3.56*
Total score	73.53	37.42	117.05	33.59	5.04*	75.16	38.38	117.80	30.53	5.03*
Disaster-Bereaved Sample[b]										
Depression (QIDS-SR)	7.16	4.22	15.36	5.73	6.07*	6.96	4.10	13.83	5.64	5.01*
PTSD total	17.25	11.71	46.89	16.58	7.14*	16.64	11.27	41.79	16.60	5.53*
"Intrusive symptoms"	1.40	1.38	4.11	1.27	5.73*	1.32	1.32	3.86	1.35	6.82*
"Avoidance"	0.39	0.71	1.33	1.00	2.78*	0.37	0.69	1.21	0.97	3.16*
"Negative alterations in cognition and mood"	1.53	1.65	4.89	2.09	5.81*	1.49	1.65	4.07	2.13	4.39*
"Arousal and reactivity"	1.48	1.59	3.89	2.26	4.27*	1.39	1.52	3.86	1.99	5.57*
Functional Impairment (WAS)	15.10	8.93	29.27	7.44	5.14*	14.84	9.08	25.89	6.94	4.99*

[a]In the Patient Sample analyses were based on $n = 168$.
[b]In the Disaster-Bereaved Loss Sample data for the QIDS-SR were based on $n = 165$ and for the PCL-5 were based on $N = 139$.
PCBD: Persistent Complex Bereavement Disorder; PCL-5: PTSD Checklist for DSM-5; PGD: Prolonged Grief Disorder; QIDS-SR: Quick Inventory of Depressive Symptomatology Self Report version; TGI-SR: Traumatic Grief Inventory-Self Report version; WSAS: Work and Social Adjustment Scale.
*$p < 0.001$.

Table 5. Operating characteristics of total scores on the TGI-SR (range: 1–90) for identifying probable PCBD and probable PGD caseness in the Patient Sample ($n = 495$).

PCBD caseness				PGD caseness			
TGI-SR score	Sensitivity	Specificity	Youden's J index	TGI-SR score	Sensitivity	Specificity	Youden's J index
≤46	1.000	≤0.587	≤0.587	≤46	1.000	≤0.575	≤0.575
47	1.000	0.599	0.599	47	1.000	0.587	0.587
48	1.000	0.630	0.630	48	1.000	0.618	0.618
49	1.000	0.649	0.649	49	1.000	0.637	0.637
50	1.000	0.673	0.673	50	1.000	0.660	0.660
51	1.000	0.697	0.697	51	1.000	0.684	0.684
52	1.000	0.721	0.721	52	1.000	0.708	0.708
53	1.000	0.760	0.760	53	1.000	0.745	0.745
54	1.000	0.772	0.772	54	1.000	0.757	0.757
55	1.000	0.805	0.805	55	1.000	0.790	0.790
56	0.987	0.827	0.814	56	1.000	0.814	0.814
57	0.975	0.844	0.819	57	0.986	0.830	0.816
58	0.975	0.853	0.828	58	0.986	0.840	0.826
59	0.975	0.880	0.855	**59**	**0.986**	**0.866**	**0.852**
60	0.975	0.899	0.874	60	0.958	0.880	0.838
61	**0.975**	**0.925**	**0.900**	61	0.944	0.903	0.847
62	0.962	0.935	0.897	62	0.930	0.913	0.843
63	0.937	0.945	0.882	63	0.915	0.925	0.840
64	0.911	0.957	0.868	64	0.887	0.936	0.823
65	0.873	0.971	0.844	65	0.859	0.953	0.812
66	0.797	0.981	0.778	66	0.789	0.965	0.754
≥67	≤0.722	≥0.986	≤0.708	≥67	≤0.718	≥0.972	≤0.690

PCBD: Persistent Complex Bereavement Disorder; PGD: Prolonged Grief Disorder; TGI-SR: Traumatic Grief Inventory Self-Report version.
Bold values refer to optimal cut-off scores.

meeting or not meeting criteria for PGD-caseness. This cut-off had a sensitivity of 0.986 and specificity of 0.866 (and a Youden's index of 0.852), classifying 88.3% of all cases correctly.

Similar cut-off scores were determined using the Disaster-Bereaved Sample ($n = 167$). Table 6

summarizes the outcomes. For a provisional PCBD diagnoses, the AUC was excellent (AUC = 0.975 (95% CI: 0.939–1.00)). A score of ≥62 optimally classified participants as meeting or not meeting criteria for PCBD-caseness. This cut-off had a sensitivity of 0.909 and specificity of 0.968 (Youden's index = 0.877),

Table 6. Operating characteristics of total scores on the TGI-SR (range: 1–90) for identifying probable PCBD and probable PGD caseness in the Disaster-Bereaved Sample ($n = 167$).

	PCBD caseness				PGD caseness		
TGI-SR score	Sensitivity	Specificity	Youden's J index	TGI-SR score	Sensitivity	Specificity	Youden's J index
≤46	1.000	≤0.500	≤0.500	≤46	1.000	≤0.523	≤0.523
47	1.000	0.519	0.519	47	1.000	0.544	0.544
49	1.000	0.558	0.558	49	1.000	0.584	0.584
50	1.000	0.577	0.577	50	1.000	0.604	0.604
51	1.000	0.641	0.641	51	1.000	0.671	0.671
52	1.000	0.699	0.699	52	1.000	0.732	0.732
53	1.000	0.718	0.718	53	1.000	0.752	0.752
54	1.000	0.750	0.750	**54**	**1.000**	**0.785**	**0.785**
55	1.000	0.782	0.782	55	0.944	0.812	0.756
56	0.909	0.801	0.710	56	0.944	0.839	0.783
57	0.909	0.846	0.755	57	0.889	0.879	0.768
58	0.909	0.872	0.781	58	0.778	0.893	0.671
59	0.909	0.897	0.806	59	0.778	0.919	0.697
60	0.909	0.910	0.819	60	0.778	0.933	0.711
61	0.909	0.942	0.851	61	0.722	0.960	0.682
62	**0.909**	**0.968**	**0.877**	62	0.611	0.973	0.584
63	0.818	0.974	0.792	63	0.556	0.980	0.536
64	0.818	0.987	0.805	64	0.500	0.987	0.487
65	0.727	0.987	0.714	65	0.444	0.987	0.431
66	0.636	0.987	0.623	66	0.389	0.987	0.376
≥67	≤0.636	≥0.994	≤0.630	≥67	≤0.389	≥0.993	≤0.382

PCBD: Persistent Complex Bereavement Disorder; PGD: Prolonged Grief Disorder; TGI-SR: Traumatic Grief Inventory Self-Report version.
Bold values refer to optimal cut-off scores.

classifying 96% of all cases correctly. A score of ≥54 optimally classified participants as meeting or not meeting the criteria for PGD-caseness (AUC = 0.957 (95% CI: 0.925–0.990)). This cut-off had a sensitivity of 1.00 and specificity of 0.785 (Youden's index = 0.785), classifying 80.8% of all cases correctly.

Demographic and loss-related correlates of TGI-SR scores

In the Patient Sample, scores on all summed 18 items of the TGI-SR, the summed 17 PCBD items, and summed 11 PGD items did not differ as a function of age and gender. Participants born outside the Netherlands had higher scores than participants born in the Netherlands on the summed 18 items of the TGI-SR ($M = 53.5$, $SD = 16.2$ vs. $M = 41.2$, $SD = 14.7$, $t(161) = 4.21$), the summed 17 PCBD items ($M = 50.1$, $SD = 15.2$ vs. $M = 38.7$, $SD = 13.9$, $t(161) = 4.12$), and the summed 11 PGD items ($M = 33.6$, $SD = 10.6$ vs. $M = 25.7$, $SD = 7.9$, $t(161) = 4.11$, all p's < 0.001). Patient groups (i.e. patients from the categories "profession related trauma", "refugees/asylum seekers", and "others") differed significantly on the summed 18 items of the TGI-SR ($F(2, 163) = 3.19$) and the 11 PGD items ($F(2,163) = 4.18$, p's < 0.05), and near-significantly on the 17 PCBD items ($F(2,163) = 2.93$, $p < 0.06$). *Post-hoc* tests showed that refugees/asylum seekers scored significantly higher than the "others" (p's < 0.05); differences between refugees/asylum seekers and victims of profession-related trauma and

between victims of profession-related trauma and "others" were not statistically significant (p's > 0.11).

In the Disaster-Bereaved Sample, participants with college/university level education had lower scores than participants with other (lower) education on the summed 18 items of the TGI-SR ($M = 44.5$, $SD = 11.0$ vs. $M = 52.7$, $SD = 11.7$, $t(164) = -4.34$), the summed 17 PCBD items ($M = 41.2$, $SD = 10.3$ vs. $M = 49.9$, $SD = 11.3$, $t(164) = -4.30$), and the summed 11 PGD items ($M = 28.4$, $SD = 7.5$ vs. $M = 34.2$, $SD = 7.8$, $t(164) = -5.81$, all p's < 0.001). Scores did not differ as a function of gender, age, time since loss, and relationship with the closest loved one.

Discussion

The current study built on Boelen and Smid (2017b) and provided a further evaluation of psychometric properties of the TGI-SR; an 18 item self-report measure of symptoms of PCBD as per DSM-5 (American Psychiatric Association, 2013) and PGD as per Prigerson et al. (2009). Data were available from a "Patient Sample" including 168 patients from a mental health care centre specialized in loss and psychotrauma and a "Disaster-Bereaved Sample" including 167 people who lost loved ones in the Ukrainian airplane crash in July 2014. Exploratory factor analysis indicated that the 18 items included in the TGI-SR, but also the selection of 17 PCBD items and 11 PGD items formed a single dimension. These findings are in line with our initial evaluation of the TGI-SR

(Boelen & Smid, 2017b). Moreover, findings link up with other prior studies in which symptoms of disturbed grief formed a unitary dimension, including earlier studies with the Dutch version of the revised Inventory of Complicated Grief (ICG-R; Boelen & Hoijtink, 2009). The internal consistency of the TGI-SR (full scale, PCBD and PGD items) was good to excellent, attesting to the reliability of measure. With data from a subgroup from the Disaster-Bereaved Sample, we found that the (1–3 months) temporal stability of the 18 individual items varied but that, importantly, the stability of the total scale was high.

Several findings supported the validity of the TGI-SR. In the Patient Sample scores on the TGI-SR (full scale, PCBD and PGD items) were moderately to highly correlated with different domains of psychopathology—including depression and somatization—tapped using the BSI. In the Disaster-Bereaved Sample, scores on the TGI-SR were strongly correlated with indices of depression as well as overall loss-related PTSD and PTSD symptom clusters (including re-experiencing and avoidance) as defined in DSM-5 (American Psychiatric Association, 2013). Taking into account prior evidence that disturbed grief is associated with a host of negative outcomes (e.g. Prigerson et al., 2009; Shear, 2015) these associations of TGI-SR scores with all these measures attest to the TGI-SR's concurrent validity.

In the Disaster-Bereaved Sample, scores on the TGI-SR were significantly correlated with impairments in functioning—tapped with the WSAS—even when controlling for the shared variance of TGI-SR scores with indices of PTSD and depression. This finding supports the incremental validity of the TGI-SR and accords with prior evidence that symptoms of PCBD and PGD predict unique variance in functioning beyond PTSD and depression (Bonanno etal., 2007).

We used a DSM-5 based scoring rule to determine the number of participants meeting criteria for a provisional PCBD diagnosis and the scoring rule from Prigerson et al. (2009) to determine how many people met criteria for a provisional diagnosis of PGD. Rates were 12.5 and 6.6% for a provisional PCBD diagnosis in the Patient Sample and Disaster-Bereaved Sample, respectively and 8.9 and 10.8% for a provisional PGD diagnosis in both samples, respectively. These numbers are in line with earlier studies finding prevalence rates of 5–20% (see Lundorff et al., 2017; Shear, 2015). Rates are somewhat lower than expected given the nature of both samples; although it is known that resilience is a common response to loss, more severe distress could have been expected in these samples. The relatively low rates in the Patient Sample may be due to the fact that

many patients had already started treatment at the time data were gathered (which likely alleviated distress) and not all patients sought help for disturbed grief. That prevalence rates in the current Patient Sample were lower compared to the rates observed in our previous study (Boelen & Smid, 2017b) may be due to the fact that that earlier study included a higher number of refugees and asylum seekers (i.e. 29.1compared to 9.5% in the current study)—groups that are more vulnerable to multiple trauma and loss and subsequent psychopathology (Hengst, Smid, & Laban, 2018). The relatively low rates of PCBD and PGD in the Disaster-Bereaved Sample may be due to the fact that this sample included individuals with relatively high education and social-economic status—factors known to be associated with lower risk of distress (Burke & Neimeyer, 2013). However, we hasten to add that, because these provisional rates were based on self-reported symptoms, PCBD and PGD prevalence rates observed in our study only provide an "indication" of the number of people experiencing clinically significant PCBD and PGD.

A further notable finding was that—in both samples included in our study—the pairwise agreement of the provisional diagnoses of PCBD as per DSM-5 and PGD as per Prigerson et al. (2009) was "substantial". This finding adds to prior evidence that PCBD and PGD as per Prigerson et al. (2009) are largely the same constructs (Maciejewski et al., 2016). In addition, the agreement between these diagnoses offers confidence that research findings (concerning e.g. underlying mechanisms and treatments) based on one these criteria-sets can be generalized to people meeting criteria for the other set. As expected, in both samples, people meeting criteria for provisional PCBD and PGD diagnoses had higher levels of psychopathology and functional impairment. These results add to prior evidence that disturbed grief is associated with a host of negative outcomes (Boelen & Smid, 2017a; Shear, 2015) and lend further support to the TGI-SR's validity.

We performed ROC analyses to determine TGI-SR cut-off scores distinguishing best between participant meeting versus not meeting criteria for provisional diagnoses of PCBD and PGD. In both the Patient and Disaster-Bereaved Samples, AUC values were >0.90 indicating that the TGI-SR has excellent predictive accuracy in terms of distinguishing between participants with and without provisional diagnoses of PCBD and PGD (Andresen, Catlin, Wyrwich, & Jackson-Thompson, 2003; Metz, 1978). Cut-offs differed somewhat between diagnoses and between samples. Based on our findings in the Patient Sample, cut-offs of ≥61 and ≥59 could be used as indicative for possible diagnoses of PCBD and PGD, in clinical and research

efforts with clinical patients. Based on our findings in the Disaster-Bereaved Sample, cut-offs of ≥62 and ≥54 could be used as indicative for probable PCBD and PGD, when evaluating people confronted with traumatic loss. Alternatively, we could recommend using a score of ≥54 as indicative of clinically significant PCBD and PGD—taking into account that, across our ROC analyses, this cut-off yielded optimal sensitivity (of 1.00) and specificity of ≥0.750 (as is shown in Tables 5 and 6). As this cut-off is meant to quickly identify bereaved people with a high likelihood of clinically significant grief—in need of additional testing to determine formal clinical diagnoses—using that score as a single indicator seems useful in clinical and research settings.

There are several strengths to this study. First, the inclusion of a racially, ethnically, and economically diverse sample of bereaved persons (the Patient Sample) supports the study's ecological validity. Second, the inclusion of the Disaster-Bereaved Sample enabled us to confirm that the TGI-SR has promising psychometric properties among people confronted with traumatic loss—people with elevated risk of severe emotional distress (cf. Kristensen, Weisaeth, & Heir, 2012). Third, the present study adds to the utility of the TGI-SR by offering cut-off scores to identify people at risk for clinically significant PCBD and PGD without using complex diagnostic algorithms. These cut-offs can be used for initial symptom screening in clinical settings and large scale screening of disturbed grief in research.

This study also has limitations. First and foremost, one important limitation is that PCBD and PGD caseness was based on the self-reported endorsement of TGI-SR items rather than clinical interviews; the cut-off scores can therefore, as noted earlier, not be used to obtain formal diagnoses as that would require expert clinical interviewing. Secondly, a further caveat is that limitations of the sample sizes did not allow us to examine whether factor structure, reliability, and validity indices varied between different subsamples (e.g. differing by age, gender, and mode of death). A third limitation is that, in the Patient Sample, no data were available about characteristics of the loss (e.g., time, cause of death, and kinship). Our prior study with a different group of patients from the same mental health care institute showed that patients were mostly confronted with multiple loss, mostly due to unnatural causes (Boelen & Smid, 2017b); although it is conceivable that the current findings are generalizable to such individuals, caution should be applied in doing so. A fourth limitation is that we did not include a measure of

disturbed grief, other than the TGI-SR; therefore, the convergent and divergent validity (associations of TGI-SR with conceptually similar vs. dissimilar measures) still need to be studied. A fifth limitation is that we tested PGD criteria as proposed by Prigerson et al. (2009) that do not fully overlap with PGD criteria that possibly will end up in the forthcoming ICD-11 (ICD, 2017); thus, the validity of the TGI-SR as a measure of PGD as per ICD-11 needs to be studied in future research. Finally, as we evaluated the Dutch TGI-SR, our findings not necessarily generalize to non-Dutch versions of the TGI-SR. Future studies are needed to examine the generalization of the current findings to other bereaved samples, should develop norm-scores specific to different groups and should compare findings obtained from self-report and clinician administered versions of the TGI. In addition, more research is needed to test the short-term temporal stability, additional aspects of validity (e.g. convergent, divergent, and predictive validity), and the use of the TGI-SR as a measure of treatment effects.

Notwithstanding these considerations, the current findings add to our prior study (Boelen & Smid, 2017b) in providing further evidence that the TGI-SR is a useful tool to assess disturbed grief in adults. With its brief format, the TGI-SR can be completed in 5-10 min. As such, it is feasible for screening for disturbed grief in community based settings and identification of people needing a more comprehensive assessment of their grief in clinical settings.

Notes

1. Originally, the total score of the QIDS-SR ranges from 0–27, but we omitted the last answer category of the "Recurrent thoughts of death/suicide" item for ethical reasons.
2. Principal axis factoring was considered an appropriate EFA approach to address our study aims and more appropriate than, for instance, principal component analysis because—roughly—this latter approach implies that the underlying dimension is an outcome of individual items, whereas principal axis factoring implies that the underlying dimension is a latent construct affecting item scores (Fabrigar & Wegener, 2012.

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Appendix 1

Traumatic Grief Inventory Self Report version (TGI-SR)

Name:
Date of birth:
Instruction: This questionnaire contains two parts. Part 1, asks about the losses of loved ones you have been confronted with and part 2 asks you to what extent you experience grief reactions related to the most distressing loss you have experienced.

Part 1:
In this part you are asked to:

1. Indicate whether or not you have experienced the death of the person mentioned.
2. Write down the date of the day that the deceased persons died.
3. Indicate if these persons died to violent causes (by which we mean death due to homicide, suicide, or some unnatural cause).

(1) I have been confronted with the death of (please write down the name):	(2) Date of death:	(3) Death was due to a violent cause:
Partner 1		Yes/No
Partner 2		Yes/No
Child 1		Yes/No
Child 2		Yes/No
Child 3		Yes/No
Father		Yes/No
Mother		Yes/No
Brother 1		Yes/No
Brother 2		Yes/No
Sister 1		Yes/No
Sister 2		Yes/No
Friend/acquaintance 1		Yes/No
Friend/acquaintance 2		Yes/No
Other relative 1		Yes/No
Other relative 2		Yes/No

Part 2
In this part you are asked to do the following:

1. From the persons who died, listed in Part 1, please select one person whose death is currently mostly on your mind or is currently most distressing you. Write down the name of this person. The loss that is currently mostly on my mind/ distressing, is the death of: _____ .
2. Below, several grief-reactions are listed. Please indicate how often you have experienced each reaction in the past month, in response to the death of this person

1	I had intrusive thoughts or images related to the person who died.	1	2	3	4	5
2	I experienced intense emotional pain, sadness, or pangs of grief.	1	2	3	4	5
3	I found myself longing or yearning for the person who died.	1	2	3	4	5
4	I experienced confusion about my role in life or a diminished sense of self.	1	2	3	4	5
5	I had trouble accepting the loss.	1	2	3	4	5
6	I avoided places, objects, or thoughts that reminded me that the person I lost has died.	1	2	3	4	5
7	It was hard for me to trust others.	1	2	3	4	5
8	I felt bitterness or anger related to his/her death.	1	2	3	4	5
9	I felt that that moving on (e.g., making new friends, pursuing new interests) was difficult for me.	1	2	3	4	5
10	I felt emotionally numb.	1	2	3	4	5
11	I felt that life is unfulfilling or meaningless without him/her.	1	2	3	4	5
12	I felt stunned, shocked, or dazed by his/her death.	1	2	3	4	5
13	I noticed significant reduction in social, occupational, or other important areas of functioning (e.g., domestic responsibilities) as a result of his/her death.	1	2	3	4	5
14	I had intrusive thoughts and images associated with the circumstances of his/her death.	1	2	3	4	5
15	I experienced difficulty with positive reminiscing about the lost person.	1	2	3	4	5
16	I had negative thoughts about myself in relation to the loss (e.g., thoughts about self-blame).	1	2	3	4	5
17	I had a desire to die in order to be with the deceased	1	2	3	4	5
18	I felt alone or detached from other individuals.	1	2	3	4	5

(1 = "never, " 2 = "rarely, " 3 = "sometimes, " 4 = "frequently," and 5 = "always")