



Prolonged grief and post-traumatic stress among relatives of missing persons and homicidally bereaved individuals: A comparative study

Boss (2006) claimed that the disappearance of a loved one is the most traumatic loss, because the whereabouts of the missing person are uncertain. It is important to verify this assumption, as it may contribute to psychopathology through stigmatization (Feigelman et al., 2009). Furthermore, insight into different psychological responses to different types of loss may help determining the necessity of tailored interventions.

Studies comparing symptom-levels of prolonged grief disorder (PGD)¹ and posttraumatic stress disorder (PTSD) between relatives of missing persons and homicidally bereaved individuals are scarce and inconclusive. One study showed a significantly higher lifetime-prevalence of PTSD post-homicide (9.0%) than post-disappearance (1.3%), whereas PGD-rates did not differ (Pérez-Sales et al., 2000). Conversely, another study found equal PTSD-levels, but significantly higher PGD-levels post-disappearance than post-homicide ($d=0.79$) (Powell et al., 2010). A third study showed no group-differences in PGD and PTSD (Heeke et al., 2015).

These studies were conducted in armed conflict. Additional stressors (e.g., homelessness) may confound the results. Consequently, their generalizability to a context other than armed conflict is questionable. Therefore, we compared PGD- and PTSD-levels of relatives of missing persons and homicidally bereaved individuals outside armed conflict, using data from (on-going) research-projects.

Data were available from 134 relatives of missing persons² who had been missing for more than 3 months and 331 people confronted with the homicidal loss of a loved one at least 6 months earlier. Table 1 summarizes sample characteristics. A local review board provided ethics approval.

The *Inventory of Complicated Grief (ICG)* assessed PGD-symptoms (Boelen et al., 2003). Participants rated the frequency of 19 grief reactions during the last month on 5-point scales (anchors 0="never" and 4="always"). In keeping with prior research, scores > 25 indicated probable PGD.

The *20-item PTSD Checklist for DSM-5 (PCL-5)* assessed the DSM-5 PTSD-criteria in relatives of missing persons (Blevins et al., 2015). Participants rated on scales of 0 ("not at all") to 4 ("extremely") to what extent they experienced PTSD symptoms during the preceding month. We considered scores > 1 on at least one B- and C-cluster-item and two D- and E-cluster-items as indicative of probable PTSD.

The *PTSD Symptom Scale–Self-Report (PSS-SR)* assessed the DSM-IV PTSD-criteria in homicidally bereaved individuals (Foa et al., 1993). Respondents briefly described an event that bothered them most during the past month and rated the severity of 17 PTSD-symptoms during the preceding month on scales ranging from 0="not at all" to 3="five or more times per week/almost always". Scores of > 1 on at least one experiencing, three avoidance, and two hyperarousal symptoms indicated probable PTSD.

Items that referred to "death" (ICG) or "stressful experience" (PCL-5) were replaced by references to the disappearance. Psychometric properties of the measures are adequate (Blevins et al., 2015; Boelen et al., 2003; Foa et al., 1993; $\alpha > .90$ for all measures in the current samples).

Multilevel regression-analysis was used to deal with the nested data (i.e., multiple relatives of the same missing/deceased person completed questionnaires). Type of loss was included as independent variable and PGD- or PTSD-scores as dependent variables. Gender, time since loss, and kinship to the disappeared/deceased relative (i.e., spouse, parent, child, or sibling versus other) were included as covariates. An adapted PTSD score³ for relatives of missing persons was used in the group-comparison. Because the PTSD measure in the homicidally bereaved sample could be related to other events than the homicide, we repeated the analysis for the subgroup of people explicitly referring to the homicidal loss in their event-description ($n=169$).

In relatives of missing persons, prevalence rates were 47.0% and 23.1% for probable PGD and PTSD, respectively. These rates were 83.1% for PGD and 31.4% for PTSD in homicidally bereaved individuals. Homicidally bereaved individuals scored significantly higher than relatives of missing persons on PGD-symptoms ($F(1, 243.05)=45.37, p < 0.001, d=0.86$) and PTSD-symptoms ($F(1, 291.57)=5.79, p < 0.05, d=0.28$). Similar findings for PTSD-symptoms emerged when including the subgroup of $n=169$ homicidally bereaved individuals ($F(1, 187.00)=7.72, p < 0.01, d=0.41$).

Our findings that PGD-levels and PTSD-levels are higher post-homicide than post-disappearance contrast with prior studies. This indicates the lack of generalizability of findings from studies in the context of armed conflict to populations outside these contexts. Additional war-related stressors in situations of armed conflict may account for differences. Furthermore, non-Western samples were used in previous studies. Grief may differ across cultures (Rosenblatt, 2008). In contrast to previous studies (Heeke et al., 2015; Pérez-Sales et al., 2000) we used self-reports instead of interviews, which may overestimate symptom-levels.

¹ PGD, also referred to as complicated grief or persistent complex bereavement disorder, is characterized by yearning for the deceased and intense sorrow and is distinguishable from normal grief in terms of higher intensity and longer duration.

² A missing person is defined as: "Anyone whose whereabouts is unknown whatever the circumstances of disappearance. They will be considered missing until located and their well-being or otherwise established" (Association of Chief Police Officers, 2010, pp. 15).

³ To be able to compare the PTSD levels between the samples we transformed the 5-point scale (of the PCL-5) into a 4-point scale (in accord with the PSS-SR). Furthermore, items 10–12 of the PCL-5 were not covered in the PSS-SR and were therefore excluded. Item 1, 11, and 12 were not sufficiently covered in the PCL-5 and were therefore also assessed in the sample of relatives of missing persons.

Table 1
Characteristics of the participants.

	Relatives of missing persons (<i>n</i> =134)	Homicidally bereaved individuals (<i>n</i> =331)
Gender, <i>N</i> (%)		
Men	45 (33.6)	113 (34.1)
Women	89 (66.4)	218 (65.9)
Age (years), <i>M</i> (<i>SD</i>)	57.8 (14.2)	52.7 (15.4)
Educational level, <i>N</i> (%)		
Low	32 (23.9)	–
Middle	44 (32.8)	–
High	58 (43.3)	–
Lost relative is, <i>N</i> (%)		
Partner/spouse	18 (13.4)	25 (7.8)
Child	41 (30.6)	157 (48.8)
Parent	14 (10.4)	41 (12.7)
Sibling	31 (23.1)	52 (16.1)
Other family member	28 (20.9)	28 (8.7)
Other	2 (1.5)	19 (5.9)
Number of years since loss, <i>M</i> (<i>SD</i>)	15.5 (17.0)	6.9 (6.5)
Type of disappearance, <i>N</i> (%)		
Criminal act	44 (32.8)	n.a.
Voluntarily	33 (24.6)	n.a.
Accident	33 (24.6)	n.a.
No specific suspicion	24 (17.9)	n.a.
Unique victims	89 (66.4)	254 (76.7)
Recruitment via		
Editorial office of a Tv-show about missing persons	36 (26.9)	n.a.
Peer support organizations	30 (22.4)	172 (52.0)
Non-governmental support organization	21 (15.7)	136 (41.1)
Family or friends	35 (26.1)	n.a.
Other	12 (9.0)	23 (6.9)
PGD severity, <i>grand mean</i> (<i>SE</i>)	25.44 (1.40)	39.77 (0.81)
PTSD severity, <i>grand mean</i> (<i>SE</i>)	13.71 (1.04)	19.96 (0.74)

Note. --data was not available; n.a.=not applicable; PGD=prolonged grief disorder; PTSD=posttraumatic stress disorder.

In contrast to relatives of missing persons, homicidally bereaved individuals need to deal with facts about the violent cause of death and the (presumed) perpetrator, which might be an explanation for the higher PGD- and PTSD-levels post-homicide than post-disappearance. Clearly, before conclusions can be drawn, future research should confirm the present findings. The large difference in PGD-levels suggests that PGD should be more central to treatments for people post-homicide relative to post-disappearance. Future research should further explore differences in psychopathology-symptoms and their correlates after different types of loss to inform intervention development.

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