

It's not who you lose, it's who you are: Identity and symptom trajectory in prolonged grief

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Abstract

The death of a loved one has been associated with a range of emotional and cognitive impacts, with up to 10% of the bereaved population experiencing a prolonged grief reaction. Direct investigation of the role of self-identity in the maintenance of grief symptoms is limited and has not discriminated between relationship type. This longitudinal study investigated the differences in grief symptoms over time depending on relationship to the deceased person (partner or adult child), as well as the association between long-term grief symptoms and identity, attachment, and cognitive interdependence. Data from bereaved partners and adult children in The Aarhus Bereavement Study at two- and 18-months post-bereavement were included in this study. They completed questionnaires measuring their grief symptoms at both time points, a measure of attachment at Time 1, and measures of the interdependence of their pre- and post-loss identity with the deceased, their cognitive interdependence, and everyday memory retrieval failures at Time 4. Compared with adult children, bereaved partners experienced more intense grief symptoms at both time points. Regression analysis identified that over and above immediate grief symptoms, key predictors of prolonged grief symptoms were a merged post-bereavement identity with the deceased, younger age, and everyday memory retrieval difficulties. Relationship type and pre-bereavement identity contributed to initial but not prolonged grief symptoms. We discuss these findings in terms of the role of interdependence in prolonged grief.

 $\textbf{Keywords} \ \ Prolonged \ grief \cdot Bereavement \cdot Identity \cdot Attachment \ Style \cdot Memory$

Bereavement has been defined as the death of a loved one and is a significant and difficult life experience with impacts on physical, cognitive, and emotional health (e.g., (Kersting

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et al., 2011; Shear & Skritskaya, 2012). Bereaved individuals experience immediate disruptions to their mood, including increased depression and anxiety symptomatology, but the majority will adjust to the significant loss without long term impairment (Bonanno & Kaltman, 2001; Prigerson et al., 2008). It has been estimated, however, that up to 10% of those bereaved will go on to experience prolonged grief reactions, such that their immediate responses do not resolve over time. Symptoms of prolonged grief include yearning and preoccupation with the deceased, identity loss, anger and reduced positive affect, and these symptoms are associated with functional impairment (e.g., Lundorff et al., 2017; Nielsen et al., 2017; Stahl & Schulz, 2014; Thomsen et al., 2018) as well as increased risk of self-harm and suicide (Latham & Prigerson, 2004; Szanto et al., 2006).

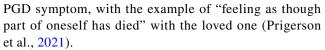


Prolonged Grief Disorder

Clinical terminology used to describe prolonged grief reactions previously included Complicated Grief (Shear et al., 2011) and Persistent Complex Grief Disorder (Diagnostic and Statistical Manual of Mental Disorders, 5th Edition, American Psychiatric Association, 2013), but has now landed on Prolonged Grief Disorder (PGD: Prigerson et al., 2009; Djelantik et al., 2020). While PGD is often comorbid with depression, anxiety disorders, and posttraumatic stress disorder (Komischke-Konnerup et al., 2021), research has consistently found that prolonged grief symptoms are distinct from other disorders following bereavement (see Shear et al., 2011 for a comprehensive review). These clinical observations contributed to the inclusion of the new bereavement-specific mental health classification of Prolonged Grief Disorder into both the International Classification of Diseases, Version 11 (World Health Organization, 2019), and the DSM-5 Text Revision (Prigerson et al., 2021). The ICD-11 describes PGD as a pervasive grief response to the loss of a loved one, characterised by symptoms of intense emotional pain and yearning or pre-occupation with the deceased person. To reach criteria for a diagnosis of PGD, the duration of the grief response needs to be associated with significant functional impairment to the bereaved, with symptoms persisting for a minimum of 6 months (WHO, 2019). The DSM 5 TR criteria stipulate the symptoms persisting at least 12 months since the loss of the loved one for adults, and 6 months for children and adolescents (Prigerson et al., 2021). Other PGD characteristics have been described as lack of acceptance of the loss, identity disturbance, loneliness, and a sense of meaninglessness and emotional detachment since the loss (Prigerson et al., 2021).

Self-identity and Prolonged Grief

Several theoretical models of grief share a prediction that identity disturbance is central to the maintenance of grief symptoms over time. These theories include Cognitive Attachment (Maccallum & Bryant, 2013), Cognitive Behavioural (Boelen et al., 2006), and Meaning Reconstruction (Gillies & Neimeyer, 2006) models. Indeed, identity disturbance is one of the diagnostic criteria for differentiating clinically significant grief reactions from normal grief (APA, 2013; Prigerson et al., 2009, 2021; Shear et al., 2011), although specific criteria vary across diagnostic manuals. The ICD-11 includes "identity disruption" and "inability to move on" (WHO, 2019). The DSM-5-TR refers to identity disturbance as a possible



The Cognitive Attachment Model in the bereavement literature predicts a reciprocal relationship between selfidentity and memory retrieval processes that operate to maintain grief symptoms. The model emphasises the way in which an individual's *self-identity* can influence the adaption to grief via memories of the deceased person, appraisals and coping strategies. Merged and independent identity are used to describe the degree to which a bereaved individual's identity is constructed around their deceased. The Cognitive Attachment Model predicts that bereaved people who have a strongly merged (versus independent) sense of identity with the deceased person will be biased to recall loss-related autobiographical memories, and that this loss focus along with other moderating factors such as attachment style and rumination leads the bereaved individual to perseverate on the loss and maintaining grief symptoms over time (Maccallum & Bryant, 2013). Empirical evidence suggests that bereaved individuals with PGD recall more autobiographical memories linked with the deceased (Maccallum & Bryant, 2008), and that the severity of grief symptoms is associated with the extent to which the loss is considered central to one's life-story (Boelen, 2009; Eckholdt et al., 2018), and prolonged grief is associated with weaker self-concept clarity (Bellet et al., 2020; Boelen et al., 2012). However, research has not directly examined interdependent identity and the maintenance of grief symptoms over time.

Additional evidence for the role of interdependent identity in prolonged grief symptoms come from research on attachment style. An adult's insecure attachment style (e.g., attachment anxiety or attachment avoidance) increases the risk of a bereaved individual developing emotional difficulties such as PGD (e.g., Boelen & Klugkist, 2011; Fraley & Bonanno, 2004; Maccallum & Bryant, 2018; Meier et al., 2013). Particularly, Attachment Anxiety is characterised by an overdependency on attachment figures to provide a sense of security and to cope with life demands (e.g., Mikulincer et al., 2003). This type of insecure, interdependent attachment predicts adverse grief responses following the death of a loved one (e.g., Currier et al., 2015; Fraley & Bonanno, 2004; Meier et al., 2013). Attachment Avoidance is characterised by a general distrust of others and avoidance and withdrawal from close relationships (e.g., Mikulincer et al., 2003). Attachment avoidance has also been linked with prolonged grief symptoms in some research, although the findings have been been more mixed (e.g., Boelen & Klugkist, 2011), particularly in the context of moderating variables such as personality factors and relationship quality (Wijngaards-de Meij et al., 2007). However, despite the central position of identity within bereavement models and the proposal that merged self-identity that leads to problematic



grief responses (Maccallum & Bryant, 2013), there are very few studies that have directly examined the role of self-identity in PGD.

Cognitive Interdependence and Bereavement

One feature of close relationships, particularly intimate couple relationships, is that they involve cognitive interdependence in addition to identity interdependence (Harris et al., 2014; Sutton, 2018). That is, people in close relationships can come to rely on each other to support everyday cognitive functioning, developing joint "transactive memory" systems (Barnier et al., 2018b; Harris et al., 2014; Wegner, 1987). Such transactive memory systems may benefit the cognitive performance of individuals who develop them, such that older couples remember substantially better when recalling together compared to separately (Barnier et al., 2018a). Despite the benefits of transactive memory systems while both individuals are alive, one prediction is that loss of close partner with whom one had cognitive interdependence will lead to cognitive and memory disruptions following bereavement. In the current study, we examined the potential impact of cognitive interdependence on prolonged grief symptoms, in addition to the impact of merged identity.

The Present Study

In the current study, we aimed to directly examine the role of merged, interdependent identity and cognition in trajectories of grief symptoms over time. The majority of previous studies are cross-sectional, examining post- but not pre-loss identity, and therefore have not examined the way in which attachment, self-identity and cognitive processes might operate differently on immediate vs. prolonged grief symptoms, nor whether these processes depend on the relationship with the deceased (e.g., partner vs. child; degree of cognitive interdependence). As such, the ways in which a pre-loss and post-loss self-identity interact to maintain grief symptoms, and how these effects vary according to relationship type, remains unknown.

As the pathology of PGD is reflected in both the presence of grief symptoms and the persistence of these symptoms over time, longitudinal research is necessary to explore the risk factors associated with the development and maintenance of PGD. The first aim of this longitudinal study was to assess the pre- and post-loss interdependence in identity, as well as attachment and cognitive interdependence, as risk factors for the maintenance of grief symptoms over time. A second aim was to examine potential differences in the link between identity, attachment, cognitive interdependence

and PG symptoms according to the relationship with the deceased (i.e. parent or adult child). To achieve these aims, we employed two complementary analytical approaches. First, we adopted a categorical approach to assess differences in grief symptoms, self-identity, attachment, and cognitive interdependence between bereaved partners versus bereaved adult children in the sample. Second, we adopted a continuous approach with the entire sample, which aimed to assess predictors of grief maintenance, including severity of immediate grief symptoms, demographic variables, relationship type, self-identity, attachment, and cognitive interdependence. We expected that partners compared to children would have stronger immediate and delayed grief symptomatology, and that prolonged grief symptoms would be predicted by post-loss identity, centrality of event to life story, anxious attachment, and cognitive interdependence.

Method

Participants

Participants for the present study were bereaved individuals who had experienced the death of either a partner or a parent. They completed the reported measures in the context of their participation in the longitudinal Aarhus Bereavement Study, a cohort managed by the last author (see Lundorff et al., 2021 for full details, broader aims and methods). The Aarhus Bereavement (TAB) study is multi-wave large cohort study examining natural and prolonged grief reactions. National registers in Denmark were used to identify individuals living within the Aarhus metropolitan area who lost a spouse between January 2017 and March 2018. The individuals were sent information about the study and invited to participate in the research, approximately one month following the death of their spouse. To recruit the child participants, spousal participants were also invited to share information about the research with their adult children. The TABstudy adheres to the General Data Protection Regulation of the European Union [2016/679] and complies with the ethical standards of the Helsinki Declaration of 1975, as revised in 2008. Data were collected and managed using the research electronic data capture (REDCap) tool hosted at Aarhus University, Denmark.

All participants provided written informed consent and received self-report questionnaires at two-months and 18-months post-loss, with intervening questionnaires administered at 6-months and 11-months with different measures not related to the current study. To accommodate different needs, participants chose between receiving the questionnaire by email or postal service. At Time 1 (T1), we analysed responses from 1,187 bereaved participants. Of these, 807 had experienced the death of a spouse



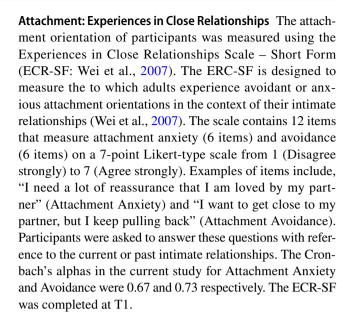
(70% women, 30% men; $M_{age} = 70.16$) and constituted our "Partner" condition. The remaining 380 participants had experienced the death of a parent (59% women, 41% men; $M_{age} = 44.20$) and constituted our "Adult Child" condition. At Time 2 (T2), and for any analyses requiring both T1 and T2 data, we analysed responses from 892 bereaved participants. Of these, 616 had experienced the death of a spouse (70% women, 30% men; $M_{age} = 71.35$) and constituted our "Partner" condition. The remaining 276 had experienced the death of a parent (60% women, 40% men; $M_{age} = 45.96$) and constituted our "Adult Child" condition. This discrepancy in participant numbers between Time 1 and Time 2 was due to participants dropping out of the larger study in the interval, representing a > 75% retention rate for participants over the 18 months and 4 rounds of data collection.

Measures

Participants completed a range of measures over multiple time points as part of their participation in the larger TAB study. For the purposes of the current research, we analysed data using the following self-administered questionnaires:

Grief symptoms: Prolonged Grief-13 Symptoms were measured using the Prolonged Grief-13 (PG-13: Prigerson et al., 2009). The PG-13 is a 13-item scale designed to measure the severity and frequency of grief symptoms such as yearning for the deceased, shock, numbness, distress and difficulty accepting the loss, avoidance of reminders of the loss, difficulty engaging in life, difficulty finding meaning and purpose, and identity disturbance. In addition to these 11 items regarding symptoms, one item assesses duration of symptoms, and one assesses functional impairment. The items were rated using 5-point scale from 1 (not at all) to 5 (several times a day or overwhelmingly). Higher scores indicate elevated grief symptoms. Example of PG-13 items include: "In the past month, how often have you felt yourself longing or yearning for the person you lost?". The Cronbach's alpha for the scale in the present study was 0.90 at T1. The PG-13 was completed at both T1 and T2.

Centrality of Events Scale The Centrality of Events Scale (CES: Berntsen & Rubin, 2006) was developed to measure the extent to which the loss event is central to the bereaved individual's self-identity and life story. In the short-form 7-item CES, items were rated on 5-point Likert-type scale from 1 (Totally Disagree) to 5 (Totally Agree). An item example is "This event has become a reference point for the way I understand myself and the world.". The Cronbach's alpha in the current study was 0.88. The CES was completed at T1.



The Inclusion of Other in the Self Scale (IOS) The IOS is a single-item pictorial measure of the extent to which one perceives an overlap in identity between themselves and another person or group. It consists of seven Venn diagram-like pairs of circles that vary in the different degrees of overlap (1 = no overlap to 7 = almost complete overlap). One of the circles in each pair was labelled "self" and the second circle was labelled "other". Participants were asked to select one pair of circles from the seven that "best describes your relationship with [your deceased partner/parent]." They were asked to make this identity rating once when thinking about prior to the loss, and a second time for their current post-loss identity. The IOS has demonstrated adequate test—retest reliability and validity (see Aron et al., 1992, 2004). The IOS for both pre- and post- lost were completed at T2.

Transactive Memory Systems Scale for Couples (TMSS-C) To measure cognitive interdependence, participants completed the 15-item TMSS (Lewis, 2003) adapted for couples (Hewitt & Roberts, 2015) to assess three components of transactive memory systems: specialisation, credibility and co-ordination. In both samples, we asked participants to reflect on and report their pre-loss reliance on deceased person for cognitive support. Example items include, "The specialised knowledge of both my partner/parent and myself was needed to complete tasks" and "My partner/parent and I worked together in a well-coordinated fashion". The TMSS-C was completed at T2.

Everyday Memory Questionnaire—Revised (EMQ-R) To measure cognitive difficulties post-loss, we administered the EMQ-R. The EMQ-R (Royle & Lincoln, 2008) is a 13-item questionnaire with two main factors: retrieval and attentional tracking. Participants rated the frequency with



which they performed certain behaviours through choosing one of five options: (a) Once of less in the last month, (b) More than a month but less than a week, (c) About once a week, (d) More than once a week or less than once a day, and (e) Once or more a day. Examples of items include, "Having to check whether you have done something that you should have done" and "Forgetting to tell somebody something important, perhaps forgetting to pass on a message or remind someone of something." The Cronbach's alpha for the scale in the present study was 0.94. The EMQ-R was completed at T2.

Procedure

Participants received questionnaires by hard copy mail or by email, depending on their nominated preference. They gave informed consent for their participation in the research. Participants completed a battery of questionnaires at two time points for the current study. T1 questionnaires were completed two-months post-loss and included demographics, grief symptoms, centrality of the event, and attachment. T2 questionnaires were completed 18-months post-loss and including grief symptoms, identity and cognitive measures.

Results

Does grief depend on relationship to the deceased?

First, we examined whether there were differences between partners and children in immediate grief symptoms and centrality of event, maintenance of symptoms over time, and interdependence with the deceased. This analysis indicated that partners and children differed in their immediate responses to bereavement. In cases where Leven's test showed significant departure from equality of variances, an adjusted t-statistic is reported. Partners were significantly higher than children on immediate grief symptoms and centrality of event at T1, two-month post-loss, t(1185) = 4.92, p < .001 and t(1185) = 8.75, p < .001, respectively (see Table 1). Partners and children also differed in their ongoing responses to bereavement. At T2, 18-months post-loss, partners' grief symptoms were still significantly higher than the adult children, t(890) = 4.16, p < .001. Partners reported having a more of a merged self-identity with the deceased prior to the loss than did children, t(890) = 7.54, p < .001. Partners also reported more cognitive interdependence than children, with slightly higher scores on the TMSS-C, t(890) = 2.88, p = .004, while children reported more everyday memory failures than partners, t(890) = 3.23, p = .001. However, other measures of interdependence were similar across relationship types, with no difference for post-loss

Table.1 Comparison of partners and adult children across independent variables from T1 and T2

Variable	Partners	Children	95% CI of the differ- ence	
PG-13 Immediate (T1)	27.06 (8.71) [11–54]	22.14 (8.87) [11–52]	3.85-5.99	
Centrality of Event (T1)	25.62 (5.42) [7–35]	22.26 (6.47) [7–35]	2.60-4.11	
ECR Avoidance (T1)	14.01 (5.37) [6–34]	15.19 (6.15) [6–35]	0.41-1.86	
ECR Anxiety (T1)	18.42 (6.10) [6–39]	19.51 (6.30) [6–40]	0.34–1.84	
PG-13 Prolonged (T2)	22.21 (7.62) [11–52]	18.05 (6.84) [11–42]	3.15–5.16	
IOS Pre-loss (T2)	4.98 (1.68) [1–8]	4.08 (1.56) [1–7]	0.67-1.13	
IOS: Post-loss (T2)	3.77 (1.89) [1–7]	3.72 (1.66) [1–7]	-0.21–0.31	
TMSS-C (T2)	53.16 (4.44) [30–66]	52.13 (5.15) [32–66]	0.33-1.73	
EMQ (T2)	9.24 (9.41) [0–52]	11.60 (10.41) [0–50]	0.94–3.79	

Values for each participant group are means, with standard deviations in parentheses and the minimum and maximum scores for each group in square brackets

identity, t(890) = 0.42, p = .677. Children reported higher anxious and avoidant attachment scores than partners, t(1185) = 3.07, p = .002 and t(1185) = 2.84, p = .005 respectively.

Does maintenance of grief symptoms depend on relationship?

To test the prediction that Partners would maintain grief symptoms over time, compared to Adult Children, a repeated Analyses of Variance (ANOVA) was conducted. The model included grief symptoms as the dependent variable, and relationship type and time post-bereavement (two months [T1] and 18-months [T2]) as the independent variables. The ANOVA yielded a large main effect of time, such that, across relationship types, participants reported significantly higher grief symptoms immediately post-bereavement (T1) compared to 18-months post-bereavement (T2), F(1,890) = 448.55, p < 0.001, indicating on-average recovery over time. There was also a main effect of relationship, F(1,890) = 62.10, p < 0.001, such that Partners reported higher levels of grief than Adult Children across time points. However, there was no significant interaction between time and relationship, F(1, 890) = 0.31, p = 0.580. Therefore, the severity of grief symptoms decreased at a similar rate for both relationship types over time (see Fig. 1).



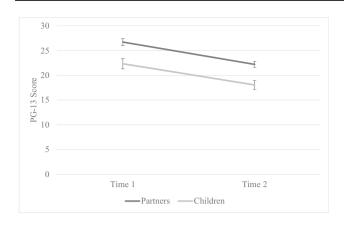


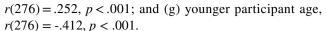
Fig. 1 Grief symptoms across time points, for partners and adult children

Is There a Relationship Between Grief Symptoms, Identity, and Cognitive Interdependence?

Next, we examined whether immediate and prolonged grief symptoms were associated with age, shared identity, attachment style, and cognitive interdependence. At T1, we collected broader identity measures (centrality of events and attachment style) and at T2, we collected direct shared identity (Inclusion of Other in the Self) and cognitive interdependence measures (everyday memory failures and transactive memory). We examined associations between these variables and grief symptoms at T2 separately for Partners and Adult Children.

For Partners, the severity of grief symptoms at T2 was associated with; (a). higher immediate T1 grief symptoms, r(616) = .742, p < .001, (b) higher centrality of event score at T1, r(616) = .395, p < .001, (c) lower avoidant attachment scores, r(616) = .019, p = .024, and higher anxious attachment scores, r(616) = .166, p < .001; and (d) higher pre- and post-loss Inclusion of Other in Self score, r(616) = .296, p < .001 and r(616) = .401, p < .001 respectively; (e) and more everyday memory difficulties, r(616) = .353, p < .001. There was no correlation of T2 grief symptoms with participant age, r(616) = .068, p = .091, nor with transactive memory scores, r(616) = .027, p = .500. Overall, for partners, prolonged grief was associated with interdependent identity but not with interdependent cognition.

For adult children, grief symptoms at T2 were associated with; (a) higher immediate T1 grief symptoms, r(276) = .784, p < .001, (b) higher centrality of event scores, r(276) = .533, p < .001; (c) both higher avoidant attachment r(276) = .206, p < .001, and anxious attachment scores, r(276) = .279, p < .001; (d) higher pre- and post-loss Inclusion of Other in Self score, r(276) = .285, p < .001 and r(276) = .334, p < .001; (e) more everyday memory difficulties, r(276) = .523, p < .001; (f) transactive memory scores,



In general, these patterns were similar regardless of the type of relationship with the deceased (partner or adult child), with a central association between grief symptoms and interdependent identity for both participant groups. However, there were some key differences. In the case of attachment style, there was an interesting divergence between relationship types for avoidant attachment. Avoidant attachment style was associated with higher levels of grief symptoms for adult children, but lower levels of grief symptoms for partners, albeit with a weak negative relationship for the latter group. In addition, there was no significant association between grief symptoms at T2 and transactive memory for partners, but there was for adult children. There was also a significant negative association between age and grief symptoms at T2 for adult children, but not for partners, suggesting that the death of a parent at a younger age increases risk for prolonged grief.

Can We Predict Maintenance of Grief Symptoms?

Given these patterns of multiple positive relationships between measures, we examined whether there was unique variance in grief symptoms at T2 that could be accounted for by the identity and cognitive interdependence measures, over and above demographic variables, and taking into account severity of symptoms at T1. We therefore conducted a stepwise regression to predict grief symptoms at T2 scores for the total sample. Table 2 provides the variables entered at each step, and the statistics associated with each model.

At Step 1, we entered demographic variables of age, gender, and relationship type (Partner vs. Adult child). At Step 2, we entered the early psychological predictors measured at T1 (centrality of events and attachment style). At Step 3, we entered the cognitive interdependence and identity predictors measured at T2 (transactive memory, everyday memory and self-identity). Finally, at Step 4, we controlled for T1 immediate grief symptoms, to determine which predictors accounted for unique variance over and above the strong predictor of baseline symptoms. The results of the regression indicated the Step 4 predictors explained 79% of the variance in grief scores, $R^2 = 0.63$, F(11,880) = 136.09, p < .001, with a substantial and significant increase in R^2 of 0.26 from Step 3 to Step 4. Significant predictors at Step 4 were T1 immediate grief symptoms, $\beta = 0.56$, t = 24.61, p < .001, participant age, $\beta = 0.04$, t = 3.25, p = .001, post-loss inclusion of other in the self, $\beta = 0.53$, t = 4.78, p < .001, and everyday memory scores, $\beta = 0.11$, t = 5.96, p < .001. Interestingly, once we included immediate grief scores, relationship type, centrality of event, and inclusion of the other-in-self prior to the loss were no longer significant predictors, suggesting



Table.2 Details of stepwise regression models predicting T2 grief symptoms

Model							
	В	SEB	β	t	p		
Step 1	$R^2 = 0.018$, $\Delta R^2 = 0.018$, $F(3,$						
	888) = 5.440, p = .001						
Relationship type	-1.610	0.633		-2.542	.001		
Gender	0.811	0.543	0.050	1.496	.135		
Age	0.019	0.019	0.038	1.021	.307		
Step 2	$R^2 = 0.238$, $\Delta R^2 = 0.220$, $F(3, 885) = 85.099$, $p < .001$						
Relationship Type	-0.651	0.566	-0.039	-1.151	.250		
Gender	-0.651	0.489	-0.040	-1.332	.183		
Age	0.021	0.017	0.042	1.251	.211		
Centrality of event	0.592	0.040	0.454	14.665	.000		
Attachment avoidance	-0.057	0.044	-0.042	-1.278	.202		
Attachment anxiety	0.129	0.042	0.104	3.078	.002		
Step 3		$R^2 = 0.375$, $\Delta R^2 = 0.137$, $F(4, 881) = 48.331$, $p < .001$					
Relationship type	-0.403	0.515	-0.024	-0.783	.434		
Gender	-0.084	0.447	-0.005	-0.188	.851		
Age	0.038	0.015	0.077	2.483	.013		
Centrality of event	0.431	0.039	0.330	11.027	.000		
Attachment avoidance	-0.030	0.041	-0.022	-0.732	.464		
Attachment anxiety	0.071	0.039	0.057	1.815	.070		
Pre-loss self-identity	0.420	0.157	0.094	2.680	.008		
Post-loss self-identity	0.818	0.143	0.195	5.724	.000		
Transactive memory	0.039	0.045	0.024	0.880	.379		
Everyday memory	0.202	0.022	0.258	8.989	.000		
Step 4	$R^2 = 0.794$, $\Delta R^2 = 0.255$, $F(1,$						
-	880):	880) = 605.539 , $p < .001$					
Relationship Type	0.235	0.397	0.014	0.592	.554		
Gender	-0.331	0.344	-0.020	-0.961	.377		
Age	0.038	0.012	0.078	3.249	.001		
Centrality of event	0.061	0.034	0.047	1.805	.071		
Attachment avoidance	-0.016	0.032	-0.012	-0.507	.612		
Attachment anxiety	0.023	0.030	0.019	0.772	.440		
Pre-loss self-identity	0.062	0.122	0.014	0.512	.609		
Post-loss self-identity	0.529	0.111	0.126	4.779	.000		
Transactive memory	-0.002	0.035	-0.001	-0.049	.961		
Everyday memory	0.106	0.018	0.135	5.957	.000		
T1 Immediate grief symptoms	0.564	0.023	0.652	24.608	.000		

The p values for significant predictors are highlighted using bold

they contributed to immediate grief symptoms but not the maintenance of grief over time.

An alternative analysis strategy was conducting separate regression analyses for the two relationship groups. When we did this, the same pattern of predictors was evident for both groups, except that age was a significant negative predictor of prolonged grief symptoms for Adult Children but not Partners. We therefore retained the omnibus analysis, maximising the power of our analysis.

Discussion

We investigated the role of self-identity and cognitive interdependence in the maintenance of grief symptoms over time, and the effect of relationship-type (partner or adult child) on the level of immediate and prolonged grief symptoms. Compared with adult children, bereaved partners experienced more intense grief symptoms both immediately following the death of their loved one, and 18-months following their loss. However, regardless of relationship, grief symptoms declined at a similar rate over time, suggesting that most people recover from bereavement, consistent with prior research (Mancini et al., 2015).

An Ongoing Merged Self-Identity with the Deceased Predicts Prolonged Grief Symptoms

Our key research questions focused on the role of interdependent identity in predicting the maintenance of prolonged grief symptoms over time. We used a direct measure of identity interdependence, namely the Inclusion of Others in the Self Scale (Aron et al., 1992, 2004). Consistent with the predictions of the Cognitive Attachment Model (Maccallum & Bryant, 2013), we found that overlapping identity played a key role in prolonged grief symptoms. Interestingly we also found that this role was time-specific; it was an overlapping post-bereavement identity, rather than pre-bereavement identity, that predicted the maintenance of grief symptoms over and above initial symptoms in our regression analysis. This finding has theoretical implications with regards to our understanding of the trajectory of prolonged grief and associated risk factors.

According to the "self-expansion model" (Aron et al., 1992, 2004) individuals incorporate loved ones into their own sense of self to enhance self-efficacy and their achievement of goals. Such blending of identity in couples has positive consequences for relationship quality and constructive relationship maintenance (Walsh & Neff, 2018). In the context of bereavement, however, this blending of identity has negative consequences for coping. It has been argued that an important task of coping with grief is—to some extent - to exclude the 'other-from-self' (Boelen & van den Hout, 2010). This would involve gradually becoming less "merged" with the deceased, such that a bereaved individual needs to become less reliant on the deceased's identity, resources and perspectives for their own self-identity. Our results support this hypothesis, since only post-bereavement "inclusion of other-in-self" scores predicted the maintenance of grief symptoms over and above initial grief reaction. This



suggests that those who have been more successful in the task of building a more independent-self in relation to the deceased post-loss are better able to cope with bereavement and reduce their grief symptoms over time.

Interestingly, there were no significant group difference in post-bereavement self-identity measures between relationship types. Although partners had a more overlapping preloss identity with the deceased than did children, post-loss identity ratings were similar for both groups. Regardless of the relationship to the deceased, bereaved individuals who continue to construct their identity around the deceased had greater ongoing grief symptomatology. This suggests that when considering the risk factors for grief symptoms, the bereaved individual's sense of who they are appears to be more important than who it is that they have lost—partner or parent. Most studies of identity, memory biases, and prolonged grief have focused on partners, but our results suggest that adult children show similar links between identity and prolonged grief.

The link between a post-bereavement merged self-identity and prolonged grief symptoms over and above other factors such as attachment style and centrality of event, could assist with early identification and treatment of individual at risk of developing PG symptoms. One of the biggest challenges of bereavement research is the identification of those at risk for PGD, especially since initial grief reactions are normal responses to bereavement (Fernández-Alcántara et al., 2021; Treml et al., 2020). Theoretically, Maccallum and Bryant (2013) propose that an anxious attachment is a vulnerability factor for the development of a merged identity with the deceased, and that attachment and identity interact with each other in the maintenance of prolonged grief symptoms. While attachment anxiety was associated with prolonged grief symptoms in the current study, our findings suggested that a merged self-identity (post bereavement) was a stronger and independent predictor of prolonged grief, while preloss merged identity was not. Therefore, it is not necessarily detrimental to have a merged identity with a loved one, as long as an individual can successfully decouple their identity following their loss.

These findings and this nuanced distinction between pre-loss and post-loss identity provide direction for early identification of at-risk bereaved individuals through, for example, the inclusion of post-bereavement self-identity measures with other screening measures. Our findings also highlight self-identity as a focal point for intervention. Although PGD is distinct from other psychological disorders (Maccallum & Bryant, 2013), co-morbidity with psychological disorders is high (Prigerson et al., 2021), and psychological interventions, may need to be adapted for individuals with PG symptoms (Shear & Bloom, 2017). When considering the association of merged self-identity with prolonged grief symptoms, early treatment could aim

to strengthen identity formations "outside" of attachment relationship. Narrative therapy is one therapy approach that seeks to challenge a dominant discourse that can shape people's lives in unhelpful ways, whereby the therapist helps people to co-author a new narrative about themselves (White, 2007; see also Thomsen et al., 2018).

Attachment Style and Grief Symptoms

Our results are consistent with other studies finding that anxious attachment is a consistent risk factor in the maintenance of grief symptoms, but avoidant attachment style is an inconsistent predictor of prolonged grief responses (Boelen & Klugkist, 2011; Wijngaards-de Meij et al., 2007). In our study, attachment was associated with immediate grief symptoms but was not a significant predictor of maintenance of symptoms over time. Our correlational analyses suggested a positive relationship between anxious, overdependent attachment and grief regardless of relationship. However, the relationship between grief and avoidant attachment was different in the two participant groups. For bereaved adult children, higher levels of avoidant attachment were positively related to prolonged grief symptoms. For partners, however, this relationship was reversed, whereby avoidant attachment was negatively associated with grief symptoms. One way to understand these diverging findings is to note that our measure of attachment asked about attachment styles in general, focused on a primary adult attachment figure such as a romantic partner. For partners, their primary attachment figure was therefore the deceased, such that an avoidant, less warm relationship was associated with less intense grief symptoms. For children, higher scores on attachment avoidance may indicate poorer quality alternative relationships with their own partner, for instance, and therefore a stronger reliance on their parent relationships, resulting in a positive correlation between avoidant attachment and grief symptoms for this population.

The divergent correlation depending on relationship type provides one explanation for the inconsistent results across previous studies. For example, several studies have found attachment avoidance predicts prolonged grief responses (e.g., Boelen & Klugkist, 2011) however, Mancini et al. (2009) found that attachment avoidance predicts *better* emotional outcomes for bereaved individuals with high relationship satisfaction. Our study extends the literature by finding that relationship type is another key indicator for determining the context in which attachment avoidance influences the maintenance of grief symptoms. Interestingly, however, attachment style no longer remained a significant predictor in our model once we introduce the severity of immediate grief symptoms suggesting that it contributed to immediate grief symptoms but not the maintenance of grief over time.



Cognitive Interdependence and the Consequences of Bereavement

While the findings for interdependent identity were clear and consistent, our findings for cognitive interdependence were less clear and depended on relationship. Scores on the transactive memory scale correlated with prolonged grief symptoms for children, but not for partners, and TMSS-C scores were not substantially different for children and partners, contrary to our expectations regarding the special role of partners in supporting cognition (Harris et al., 2014). However, in our regression model, everyday memory failures remained a significant predictor of prolonged grief symptoms, regardless of relationship type, and even when taking initial grief symptoms into account. This suggests that prolonged grief is associated with cognitive disruptions that may have functional consequences. The cognitive consequences of other mood disorders such as depression and anxiety are well established, with memory failures linked to inattention to surroundings and depressed mood (Carriere et al., 2008). Our research suggests that prolonged grief symptoms following bereavement are associated with everyday memory failures, perhaps because perseveration on the loss reduces attention to everyday surroundings, rather than because of a loss of a supportive transactive memory system. Such cognitive consequences of grief symptoms could be a target of clinical therapy.

Limitations and Future Directions

One of the strengths of the present study is the longitudinal design, enabling an examination of the trajectory of grief over time. There are, however, methodological limitations to consider when interpreting the findings. Our reliance on self-report measures may have contributed to the findings reported here, and particularly, the fact that pre-loss identity was rated retrospectively. It could be that over time the experience of PGD symptoms may have altered the bereaved individual's appraisals and self-reporting of pre-loss identity at 18-months post bereavement, such that those people who experienced more grief symptoms reported their pre-loss identity as more interdependent and were biased to report more memory failures. Further, while we employed standardized measures to assess our variables of interest, our survey was necessarily brief, and focused only on our key variables of interest. There are a range of other factors which we did not examine which are likely to influence trajectories of grief. These include family, individual and contextual factors that were unavailable to researchers, such as the cause of death, the quality of the relationship, pre-existing individual risk factors such as childhood trauma, and alternative sources of support available to the bereaved individual. For instance, there is empirical evidence to suggest that bereaved individuals who have lost a loved one to unnatural causes (versus non-violent causes), are at higher risk of developing mental health condition such as PGD (e.g., Djelantik et al., 2017). How these individual and contextual factors might intersect with identity is unknown.

Future cross-cultural research would be valuable in extending the present findings through assessing whether they hold in a variety of cultural settings and faith communities, where other factors may influence how identity is impacted by bereavement and how personal meaning is derived after loss. At the time of writing, there have been a large number of deaths globally over the last 18 months due to the COVID-19 pandemic, and this period has been characterised by people having restricted access to visiting loved ones while they are dying, due to infection control measures. The impact of the ability to be physically present with loved ones as they are dying on grief trajectories and the ability to create an independent identity post-loss have become important questions for researchers to address..

Conclusion

This longitudinal study is the first to directly investigate the role of interdependent self-identity in prolonged grief, and to compare patterns of associations depending on relationship type. Compared with adult children, bereaved partners experienced more intense grief symptoms both immediately following the death of their loved one, and 18-months following their loss. However, both groups showed decreasing symptoms at a similar rate over time. In addition to the severity of immediate grief symptoms, prolonged grief symptoms were predicted by post-loss (but not pre-loss) overlap in identity and number of everyday memory failures, regardless of relationship. These findings will have theoretical implications for models of prolonged grief, supporting the key role of post-loss identity. Findings will also assist early identification of individuals at-risk for the development of PGD and guide treatment planning. These findings highlight the importance of assessing post-loss identity over and above other factors such as relationship type when determining an individual's risk for prolonged grief disorder. They also emphasise the cognitive consequences of prolonged grief in its association with memory failures, which could be considered as for treatment. Future research could examine whether therapy targeting identity adjustment is particularly beneficial supporting people to recover from prolonged grief.

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Data Availability Due to restrictions on data sharing stipulated by The General Data Protection Regulation within the European Union, to protect participant privacy data cannot be made available while the study continues to be ongoing and links between data files and participants are maintained. The last author maintains the full dataset.

Code availability Not applicable.

Declarations

Conflicts of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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