A Systematic Review of the Relationship Between Negative Cognitions and Prolonged Grief Symptoms

Maya Carina Schneider

Master these – Clinical Forensic Psychology & Victimology

S4365755
February 2024
Vakgroep Psychologie
Rijksuniversiteit Groningen
Thesebegeleider: Dr. Maarten Eisma

Abstract

Prolonged grieving refers to the severe, ongoing, and incapacitating grief that a small percentage of adult bereaved individuals suffer from. Negative cognitions have been proposed to be pivotal in the development and perpetuation of prolonged grief symptoms. We conducted a systematic review of the relationship between grief-related negative cognitions and prolonged grief symptoms since there is a lack of reviews addressing the diverse manifestations of distorted cognitions and their effects on prolonged grief symptoms. The current systematic review was preregistered in PROSPERO's international registry of systematic reviews under registration ID CRD42023471254. By searching PsychInfo, PubMed, and Web of Science in September, 2023, we identified and summarized quantitative correlational research on the relationships between grief-related negative cognitions and prolonged grief. Seventeen studies with a total of 4,794 participants were included. The presented cross-sectional studies consistently demonstrated grief-related negative cognitions to be a stable correlate of prolonged grief symptoms, including cognitions about the self, life, the world, and the future, as well as catastrophic misinterpretations and (albeit less consistently) self-blame. Longitudinal studies further supported the notion that these grief-related negative cognitions are not merely concurrent but can predict and persist over time, indicating their potential role in the development and maintenance of prolonged grief symptoms. In future research it would be valuable to focus on these specific types of negative cognitions, and to further explore longitudinal associations and intervention effects. Acquiring a nuanced understanding of such associations could hold clinical importance and carry implications for future research endeavors and the development and application of interventions.

Keywords: Negative cognitions; Negative beliefs; Typical beliefs; Prolonged grief; Complicated Grief

Introduction

Grief is an intrinsic response to the loss of a loved one (e.g., parent, spouse, child). In the face of such loss, most people navigate through this grief process with resilience, adapting to the new reality and ultimately finding a way to integrate the absence of the deceased into their lives (Boelen et al., 2006). However, for certain individuals, grief takes a different and more complex path (Lechner-Meichsner et al., 2021; Eisma, 2023). *Prolonged grief*, as characterized by Lechner Meisner et al. (2021), is marked by a constellation of symptoms, including intense yearning, preoccupation with the deceased, and enduring feelings of sadness, guilt, denial, and blame for an extended period. *Prolonged Grief Disorder* (PGD) has been officially recognized and recently incorporated as a separate diagnosis in recent revisions of the most commonly used diagnostic handbooks (ICD-11, World Health Organisation, 2018; DSM-5-TR, American Psychiatric Association; Eisma, 2023), reflecting the growing understanding of its clinical significance and impact.

Within the growing literature on the treatment of prolonged grief, one proposed malleable risk factor of theoretical and clinical significance is negative cognitions (Boelen et al., 2006). *Negative cognitions* are a form of cognitive distortions characterized by pessimistic, self-defeating, and overly negative beliefs about oneself, others, and the world. They have been proposed to play a pivotal role in developing and perpetuating prolonged grief symptoms (Boelen et al., 2006). Negative cognitions are not a uniform construct but rather a complex spectrum of distorted thoughts and beliefs theorized to influence emotions, behaviors, and overall psychological well-being (Boelen et al., 2006). According to Bryant et al. (2018), these negative thinking patterns manifest in various forms complemented by individual working mechanisms, encompassing global negative cognitions, self-blame, catastrophic misinterpretations, and counterfactual cognitions (Glickman et al.,2016).

Within the context of prolonged grief, negative cognitions are proposed to complicate the grieving process, potentially leading to an extended and more distressing experience of bereavement (Boelen et al., 2006). Following the notion of Boelen et al. (2006), *global negative cognitions* about the self ("I am worthless since he died"), one's life ("My life is meaningless"), and the future ("My future is blank") are suggested to play a vital role in the grieving process. Such cognitions might shape the recall of autobiographical memories, biasing them toward negative interpretations and reinforcing pessimistic worldviews. More specifically, the process of accommodation (i.e., adjusting existing cognitive structures or mental schemas to incorporate new information or experiences), or the failure thereof, and integrating the loss onto one's worldview might result in persistent negative global cognitions that influence memory recall in several ways. For example, negative global cognitions may lead to selective attention towards negative information. Individuals with prolonged grief symptoms may be more likely to encode and remember information that is congruent with their negative cognitions.

Furthermore, negative global cognitions may contribute to memory distortions, where individuals with prolonged grief symptoms recall events in a way that aligns and thus reinforces their negative assumptions about the self, life, world, and future. Consequently, strong emotions such as sadness, depression, and anxiety are likely to be triggered and maintained. These beliefs may maintain problems by strengthening negative moods and yearnings, potentially acting as a self-fulfilling prophecy, where a belief or expectation influences a person's behavior so that it causes the belief or expectation to come true. Furthermore, global negative cognitions may motivate avoidance strategies, impeding emotional processing and acceptance of the loss (Boelen et al., 2003, 2006, 2008, 2009). First, negative cognitions about the self may lead to diminished confidence and feelings of helplessness and anxiety. Second, negative beliefs about the world may lead to bitterness and

detachment from others. Third, negative cognitions about life's meaning may result in apathy and withdrawal, complicating the acceptance of the loss. Finally, adverse beliefs about the future may lead to despair and an inability to set new goals or adapt to new life circumstances (Boelen et al., 2003, 2006, 2009).

In addition to negative beliefs, another form of negative cognitions believed to be involved in prolonged grief are catastrophic misinterpretations. *Catastrophic misinterpretations* entail exaggerated and catastrophic interpretations of grief reactions, such as "Once I would start crying, I would lose control" (Boelen & Spuij, 2008). These misinterpretations involve viewing typical grief symptoms as indicative of a more severe and threatening condition, such as going insane. They may lead to heightened anxiety by interpreting benign physical sensations or emotional responses as signs of imminent danger or severe dysfunction. These misinterpretations may cause individuals to engage in maladaptive coping strategies, such as avoidance or suppression, which is thought to maintain or exacerbate symptoms (Boelen et al., 2003; Boelen et al., 2006; Boelen & Spuij, 2008). Furthermore, avoidance strategies may prevent the updating of autobiographical memories with corrective experiences (Boelen et al., 2006).

Other influential negative cognitions have been identified as well. *Self-blame* is another manifestation of negative cognitions that can lead individuals to hold themselves responsible for the death of their loved one (Boelen et al., 2003, 2006; Boelen & Spuij, 2008). It is a cognitive process where individuals attribute the cause of the loss to their own actions or lack thereof. This self-criticism may manifest beliefs such as "I should have done more to prevent the loss" or "It is my fault they are gone." Self-blame then not only intensifies the feelings of guilt but also hampers the process of healthy mourning and adaptation by causing ruminative thinking and hindering acceptance of the (Boelen et al., 2006; Bryant et al., 2018).

Finally, *counterfactual cognitions* are a distinct element of negative cognitions related to self-blame (Glickman et al., 2016). These cognitions often involve ruminating on what might have been done differently, leading to feelings of guilt or self-blame regarding the death. Through counterfactual reasoning, individuals imagine alternative scenarios that could have prevented the loss, such as "If I had only done something different, my loved one would still be alive, or he would not have died at the time or in the way that he did." They typically focus on personal actions or inactions that, if altered, are believed to have changed the outcome. This form of reasoning may intensify feelings of guilt and responsibility within the grieving process (Glickman et al., 2016; Boelen et al., 2003; Boelen et al., 2006; Boelen & Spuij, 2008). Capturing these different negative cognitions is crucial when studying prolonged grief to allow a more nuanced understanding of the underlying processes. Each facet may distinctly influence emotional states, behavioral responses, and overall psychological well-being.

Boelen et al. (2006) conducted empirical research to examine the role of negative cognitions and avoidance strategies in emotional problems following bereavement. They found that negative beliefs about the future and life predicted prolonged grief at 16 to 19 months post-loss, beyond initial prolonged grief symptoms and relevant background variables. Further, Boelen (2009) found that negative cognitions about the self, life, and the future were associated with difficulties recovering from loss. Boelen and Klugkist (2011) researched the mediating role of cognitive behavioral processes in the relationship between three cognitive- and behavioral tendencies and prolonged grief symptom severity. These were (a) insufficient integration of the loss with autobiographical knowledge about the self and the lost person, (b) negative cognitions, and (c) anxious and depressive avoidance behaviors. They found (a) insufficient integration of the loss with autobiographical knowledge to be significantly associated with prolonged grief symptom severity and to mediate the influence

of personality variables (neuroticism, attachment anxiety, attachment avoidance) on prolonged grief symptoms, (b) negative cognitions about the life, the future, and catastrophic misinterpretations of grief reactions to mediate linkages between personality variables (neuroticism, attachment anxiety, attachment avoidance) and prolonged grief symptom severity, and (c) anxious and depressive avoidance behaviors emerged as significant unique mediators of the associations of neuroticism, attachment anxiety, and attachment avoidance with prolonged grief severity. In research conducted by Boelen et al. (2015) on the impact of violent loss, negative cognitions about the self and the future and catastrophic misinterpretations were significant mediators of prolonged grief following violent loss. Finally, Boelen and Spuji (2008) found negative cognitions about the self, world, life, and future, as well as catastrophic misinterpretations and self-blame, to strongly predict prolonged grief in adolescent girls after the loss of a loved one.

Existing empirical investigations have substantiated the relevance of negative cognitions in the persistence of prolonged grief symptoms. However, no systematic reviews have synthesized this empirical knowledge. Therefore, it is unclear if and to what extent negative cognitions increase grief severity. The primary aim of the current review is to address the knowledge gap of how different types of negative cognitions are concurrent and temporally related to prolonged grief symptoms following bereavement by providing a comprehensive and in-depth examination of empirical research. The aim is to gain a better understanding of the associations between negative cognitions and the development and persistence of prolonged grief symptoms.

By systematically integrating the relevant research, we hope to clarify the current state of the literature regarding the associations between negative cognitions and prolonged grief symptoms as well as identify research gaps in knowledge for adequately answering the research question "*What are the concurrent and longitudinal relationships between various*

types of negative cognitions and prolonged grief symptoms following bereavement?”. These findings could give important indications for future research and provide indications for clinical practice.

Method

Search Strategy

This systematic review, registered under ID CRD42023471254 in PROSPERO’s international registry of systematic reviews, was conducted to explore the domains of prolonged grief and grief-related negative cognitions.

Dr. Maarten Eisma, an experienced systematic reviewer, searched PsycINFO, PubMed, and Web of Science on the 24th of September 2023. Keywords encompassed "negative thoughts" OR "typical beliefs" OR "negative cognitions "OR "grief cognitions" OR "grief-related cognitions" OR "grief beliefs" OR "negative beliefs" OR "catastrophic misinterpretations" OR "grief-related beliefs" AND "grief" OR "prolonged grief" OR "complicated grief" OR "pgd" OR "pcbd" OR "traumatic grief" OR "disturbed grief" OR "pathological grief. Our search yielded 68 hits in PsychINFO, 38 hits in PubMed, and 56 hits in Web of Science. A total of 162 potentially relevant papers were therefore gathered. After that, Covidence removed 72 duplicates, and six duplicates were removed by the student, leaving 84 papers for screening. Covidence, a systematic review management tool, was utilized for the screening. Two Master students screened the papers independently in Covidence. When encountering disagreements, those were discussed until a consensus was reached. Subsequently, full texts of studies fulfilling the requirements were obtained and assessed for ultimate eligibility, leaving 33 papers to review systematically. The final selection for the present systematic review contained sixteen papers.

The PRISMA flowchart (see Figure 1) graphically illustrates the flow of information through the different phases of the systematic review.

Inclusion and Exclusion Criteria

The study included bereaved samples, defined as individuals who have experienced the death of a close person of any age group. We only included peer-reviewed English-language articles reporting on quantitative empirical studies to ensure interpretability and quality. Further, we only included studies published after 1995 since the first validation paper on an instrument assessing prolonged grief was published that year (Inventory of Complicated Grief; Prigerson et al., 1995). We excluded studies that included a non-bereaved sample, samples that were exposed to a non-death loss, and studies that did not report prolonged grief symptoms, as this was outside the scope of the current systematic review. The minimum sample size criterion was set at 20 participants to detect at least a large effect with adequate power between the two domains of interest. (r = .80, Cohen, 1988)

Data Extraction and Quality Assessment

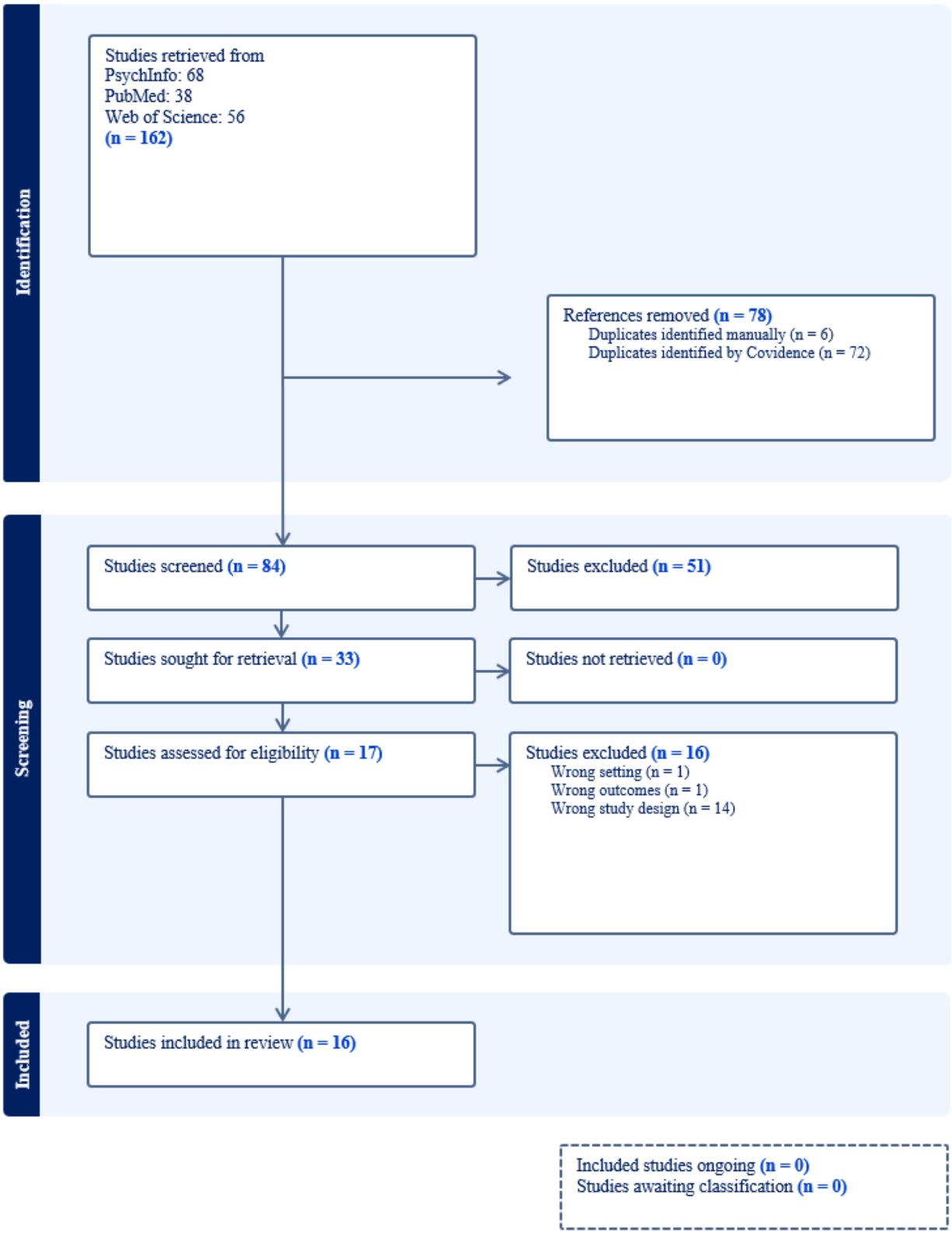
We extracted data on the first author, year of publication, research country, sample size, and sample demographics, including age and gender. Moreover, loss-related features such as the number of bereaved individuals, time since loss, cause of death, and relationship to the deceased were collected. Further, we extracted data on the study designs, negative cognition measures, and prolonged grief measures. For cross-sectional studies, exclusively zero-order correlations were reported to enable straightforward interpretations and allow for comparison.

We conducted a quality assessment, in line with Eisma and Stroebe (2021), rating research according to six criteria, which are the following: Sample characteristic, study design, control group, negative cognition measure, negative cognition – prolonged grief associations, and whether effect sizes were given. Finally, we summed scores on each criterion to a total score (see Table 1).

More specifically, what we did was the following. First, we checked whether a comprehensive description of sample characteristics was provided, which included age, gender, mean time since loss, relationship with the deceased, and cause of the loss. A comprehensive description of the sample characteristics was rated as 1 versus 0 for a non-complete description. Second, we checked on the study designs. Longitudinal design was rated with 1 versus 0 for cross-sectional design. Third, we checked whether a control group was present (1 point) or absent (0 points). Fourth, the employed measures of negative cognitions (name, number of items, mean scores, adaptations) and the employed measures of prolonged grief (name, number of items, mean scores, adaptations) were examined. If validated measures were used, they were scored as 1 (yes) instead of 0 (no). Fifth, the results of the findings of the statistical relationships between the measures of grief-related negative cognitions and prolonged grief (included effect sizes, if reported) were noted and scored with 1 (effect size was reported) versus 0 (effect sizes were not reported). Scores on the overall study quality ranged from 0 to 6, where higher scores indicate higher quality. The two master students discussed inconsistencies in the extracted data until a consensus was reached. After that, researcher Dr. M. Eisma double-checked the outcome.

Figure 1

Prisma Flowchart Depicting the Different Phases of Data Extraction Graphically.



Results

Study Characteristics

Table 2 shows the study characteristics. The current systematic review systematically investigated sixteen empirical studies with a total of 4,812 participants. Overlapping data were not considered. Thirteen research papers (81%; Boelen et al., 2003; Boelen & Spuji, 2008; Boelen, 2009; Boelen & Van den Bout, 2010; Boelen, 2010; Boelen & Klugist, 2011; Boelen, 2012; Boelen et al., 2015; Boelen et al., 2016; Cesur & Durak-Batigün, 2018, 2020; Doering et al., 2021; Liu et al., 2021) reported cross-sectional studies, while in three studies (19%) (Boelen et al., 2006; Boelen, van den Bout & van den Hout, 2010; Boelen & Lenferink, 2019), participants were measured repeatedly at multiple time points.

To assess negative cognitions, the Grief Cognition Questionnaire (GCQ) (Boelen & Lensvelt-Mulders, 2005) was used in fifteen (94%) papers. This instrument assesses global negative beliefs about the self, life, the world, and the future, self-blame, negative cognitions about the appropriateness of one's reactions, and catastrophic misinterpretations of grief reactions. A shortened and adapted Turkish version was used in two studies (Cesur, 2018; Cesur-Soysal & Durak Batigün, 2020). One study (6%) assessed negative cognitions by administering the Grief-Related Threatening Misinterpretations Questionnaire (GTMQ). The instrument measures endorsement of catastrophic misinterpretations of grief reactions (Boelen, van den Hout & van den Bout, 2010).

To assess prolonged grief, three studies (19%) made use of the Inventory of Complicated Grief (ICG). Eight studies (50%) administered the Dutch version of the more extended Inventory of Complicated Grief-Revised (ICG-r). Furthermore, three studies (19%) administered the PDG scale (Prigerson et al., 2009). This is a brief measure based on the Inventory of Complicated Grief, modified to tap the criteria set of 2009 for Prolonged Grief Disorder (PGD; Prigerson et al., 2009).

Sample Characteristics

To summarize the (unweighted) sample characteristics, the mean age of the 4,794 participants across sixteen studies was 41.69 years (*SD* = 11.55). In total, 82% of women participated in the studies. The average time since the loss was 4.36 years (52.35 months; *SD* = 65.84). The study populations were Dutch (71%; 12/16), Turkish (12%; 2/16), German (6%; 1/16), and Canadian (6%; 1/16).

Considering the relationship with the deceased, all studies included participants with various types of relations to the person they lost. The most common categories were losing a spouse or partner, losing a child, and losing a parent (see Table 2). For most participants, the cause of the death was natural (e.g., illness). Two studies exclusively included participants bereaved due to unnatural causes, such as homicide, suicide, or accidents (12%; Boelen et al., 2015; Boelen et al., 2016).

Study Quality

In Table 1, the study quality assessments are summarized. In all the studies included the sample characteristics were described comprehensively. Three studies (19%) had a longitudinal design, and thirteen studies (81%) a cross-sectional design. One research paper (6%) included a control group. Regarding the instruments used, thirteen out of sixteen (81%) used validated measurement tools. However, for grief instruments, one study (6%) used a shortened version of the ITG; in two other studies (13%), a shortened version of the ICG-r was administered. These adaptations of the three instruments (19%) were not validated. Effect sizes were reported in six (38%) out of sixteen studies.

Table 1

Quality Assessment of the Included Studies.

Study	Sample characteristics	Study design	Control group	NC measure	PG measure	NC-PG results, effect size given	Total score
Boelen (2003)	Y	N	N	Y	N	Y	3
Boelen (2006)	Y	Y	N	Y	N	N	3
Boelen (2008)	Y	N	N	Y	Y	Y	4
Boelen (2009)	Y	N	N	Y	Y	Y	4
Boelen & van den Bout (2010)	Y	N	N	Y	Y	N	3
Boelen & van den Bout & van den Hout (2010)	Y	Y	N	Y	Y	Y	5
Boelen (2010)	Y	N	N	Y	Y	N	3
Boelen	Y	N	N	Y	N	Y	3

Study	Sample characteristics	Study design	Control group	NC measure	PG measure	NC-PG results, effect size given	Total score
(2011)							
Boelen (2012)	Y	N	N	Y	Y	N	3
Boelen (2015)	Y	N	Y	Y	Y	N	5
Boelen (2016)	Y	N	N	Y	Y	N	3
Boelen (2019)	Y	Y	N	Y	Y	N	4
Cesur (2018)	Y	N	N	Y	Y	N	3
Cesur-Soysal (2020)	Y	N	N	Y	Y	N	3
Doering (2021)	Y	N	N	Y	Y	Y	4
Liu (2021)	Y	N	N	Y	Y	N	3

Note. NC = Negative Cognitions, PG = Prolonged Grief.

Main findings

Sixteen studies (13 cross-sectional studies and three longitudinal studies) were analyzed on the association between grief-related negative cognitions and prolonged grief symptoms.

Negative Global Cognitions

One study of 16 (6%) assessed *negative global cognitions* as one construct (i.e., without distinguishing between self, life, world, and future). *Global negative cognitions* (r = .25, p < .001) and catastrophic misinterpretations (r = .27, p < .001) significantly positively correlated with prolonged grief symptoms (Boelen & van den Bout, 2010).

Negative Cognitions about the Self

All nine studies (56%) that assessed the cross-sectional association between negative cognitions about *the self* and prolonged grief symptoms found them to be positively and significantly associated. (Boelen et al., 2003; Boelen & Spuij, 2008; Boelen, 2009; Boelen et al., 2016; Cesur & Durak-Batigün, 2018; Cesur-Soysal & Durak-Batigün, 2020; Doering et al., 2021; Liu et al., 2021). The strength of the associations ranged from r = .57 (moderate) to r = .72 (strong; all p < .05). Longitudinally, Boelen et al. (2006) found that negative cognitions about *the self* were strongly positively and significantly correlated with prolonged grief symptoms across three time points after loss (r = .72 at 1-4 months, .68 at 7-10 months, .57, at 16-19 months). Further, Boelen (2019) found negative cognitions about *the self* to be significantly associated with class membership in a latent class analysis of prolonged grief. The high prolonged grief symptom class reported the highest levels of negative cognitions about *the self*. These findings were consistent at both the initial assessment and the 6-month follow-up.

Negative Cognitions about the World

All five (31%) studies that investigated the association between negative cognitions about *the world* and prolonged grief symptoms found them to be positively and significantly associated (Boelen et al., 2003; Boelen & Supij, 2008; Cesur & Durak-Batigün, 2018; Cesur-Soysal & Durak-Batigün, 2020; Doering et al., 2021). Correlations were found to be moderate to strong, ranging from $r = .53$ to $r = .86$ (all $p < .05$). Boelen et al. (2003) reported beliefs about the world explaining 3% of the variance in prolonged grief symptoms after controlling for relevant background variables (i.e., age, gender) and loss-related variables (i.e., kinship with deceased, cause of death) in a hierarchical regression model.

Negative Cognitions about Life

Out of sixteen studies that investigated the associations between grief-related negative cognitions and prolonged grief symptoms, six studies (38%) assessed global negative cognitions about *life* cross-sectionally. The associations were found to be significantly positively correlated with prolonged grief symptoms in all studies (Boelen et al., 2003; Boelen & Spuij, 2008; Boelen, 2009; Boelen et al., 2016; Doering et al., 2021). The strength of the associations was found to be strong, ranging from $r = .61$ to $r = .76$ (all $p < .05$).

Three studies (50%) out of these six reported the explained variance, showing that beliefs about life explained 37% (Boelen et al., 2003), 52% (Boelen & Spuij, 2008), and 54% (Boelen, 2009) of the variance in prolonged grief symptoms after controlling for relevant background variables and loss-related variables, such as gender, age, sex, kinship with the deceased, age of the deceased, and cause of death.

In a longitudinal study design, Boelen et al. (2006) found negative cognitions about *life* to be strongly positively and significantly correlated with prolonged grief symptoms

across three time points after loss (r = .68 at 1-4 months, .64 at 7-10 months, .61 at 16-19 months).

Negative Cognitions about the Future

Eight research papers (50%) investigated the association between negative cognitions *about the future* and prolonged grief, and all found them to be positively and significantly associated with prolonged grief symptoms (Boelen et al., 2003; Boelen & Spuij, 2008; Boelen, 2009; Boelen & Klugkist, 2011; Boelen, 2012; Boelen et al., 2015; Boelen et al., 2016; Censur & Durak-Batigün, 2018; Censur-Soysal & Durak-Batigün, 2020; Doering et al., 2021; Liu et al., 2021). All eight studies (50%) found the association to be strong (r = > .60, p < .05).

In a longitudinal research design, Boelen et al. (2006) investigated negative cognitions about *the future* to be strongly positively and significantly associated with prolonged grief symptoms across three time points (r = .69, T1 at 1-4 months post-loss, r = .66, T2 at 7-10 months post-loss, r = .70, T3 at 16-19 months post-loss). Furthermore, Boelen et al. (2006) performed a hierarchical aggression analysis and found negative cognitions about *the future* and *life* to be predictors of prolonged grief symptoms post-loss, independent of initial prolonged grief symptoms, T1 (ΔR^2 at T2= .03, .04, respectively; ΔR^2 at T3= .03, .05, respectively) when controlling for relevant loss background and loss variables such as age, sex, time from loss, kinship to the deceased, and cause of loss.

One of these eight studies (6%) looking into the association with negative cognitions about *the future* reported explained variance, showing that these cognitions explained 36% of the variance in prolonged grief after controlling for relevant background variables (i.e., age, gender) and loss-related variables (i.e., kinship with deceased, cause of death; Boelen et al., 2003).

Catastrophic Misinterpretations

All eight studies (50%) that cross-sectionally examined the associations between catastrophic misinterpretations and prolonged grief symptoms found the associations to be positively and significantly associated (Boelen & Spuij, 2008; Boelen, 2009; Boelen & van den Bout, 2010; Boelen, 2010; Boelen & Klugist, 2011; Boelen, 2012; Boelen et al., 2016; Censur & Durak-Batigün, 2018). The researchers found associations that ranged between r = .27 and r = .86 (all $p < .05$).

In a longitudinal study design, Boelen, van den Bout and van den Hout (2010) found catastrophic misinterpretations to significantly predict prolonged grief symptoms at follow-up measurement (T2, r = .78) when controlling for baseline levels of prolonged grief symptoms (baseline r = .86). In that study, catastrophic misinterpretations explained an additional 1.7% of the variance in prolonged grief symptoms beyond baseline prolonged grief severity.

Three studies (19%) of seven reported explained variance in prolonged grief by catastrophic misinterpretations. Two of these studies reported that catastrophic misinterpretations explained 36% (Boelen et al., 2003), or 50% (Boelen, 2009) in the variance of prolonged grief symptoms after controlling for relevant background variables (i.e., age, gender) and loss-related variables (i.e., kinship with the deceased, cause of death). Boelen, van den Bout and van den Hout (2010) reported catastrophic misinterpretations explaining 64% of the variance in prolonged grief severity at timepoint one (six months post-loss). At timepoint two (12 months post-loss), catastrophic misinterpretations at that time point explained an additional 1.7% of the variance in prolonged grief severity beyond prolonged grief at timepoint one.

Self-blame and Counterfactual Cognitions

Three studies focused on the association between self-blame and prolonged grief symptoms. Two of these studies (67%), namely Boelen et al. (2003) and Doering et al. (2021), found self-blame to be positively and significantly associated with prolonged grief severity. The found associations were moderate in size (r = .35 to r = 0.48, p < .05). However, one study (34%), Boelen and Spuij (2008), did not find a significant correlation between self-blame and prolonged grief symptoms (r = .18, p <.005.).

Discussion

In this systematic review, the primary aim was to investigate the concurrent and prospective associations between various types of grief-related negative cognitions and prolonged grief symptoms following bereavement. We aimed to answer the research question, "*What are the concurrent and longitudinal relationships between various types of negative cognitions and prolonged grief symptoms following bereavement?"* by providing a comprehensive and in-depth examination of the available empirical research.

Thirteen studies (75%) included in the analysis opted for a cross-sectional research design, and three studies (19%) administered a longitudinal research design, measuring participants at multiple time points. Cross-sectionally significant associations between prolonged grief symptoms and global negative cognitions about *the self, life, the world, the future*, catastrophic misinterpretations, and self-blame were revealed. In six studies (38%) out of 16, associations between negative global cognitions about *the self* and prolonged grief were investigated, and all of them found significant associations ranging from r = .57 to r = .72 (moderate – strong effects). Associations between negative global cognitions about *life* and prolonged grief were investigated in six studies (38%) out of 16. All of them found significant effects with exclusively strong effect sizes (r = .61 to r = .76). Five studies (31%) out of 16 investigated and found associations between negative global cognitions about *the*

world and prolonged grief to be significant and of medium to strong effect size (r = .53 to r = .86). Negative global cognitions about *the future* were strongly associated with prolonged grief in all eight studies out of 16 that investigated this association (50%; r = > .60).

The findings on catastrophic misinterpretations and prolonged grief ranged from weak to strong effects (r = .27 to r = .86) in seven studies (44%), and they were found to be significant across all studies. Finally, self-blame was found to be moderately associated with prolonged grief (r = 0.35 to r = 0.48) in two studies (13%) out of three studies that investigated the association.

Taken together, all cross-sectional studies except one found a significant association between grief-related negative cognitions and prolonged grief symptoms, suggesting a robust association, at least when measured cross-sectionally. Moreover, these results were held across multiple time points, even in the three available longitudinal studies. This indicates that any changes in prolonged grief symptoms tend to go together with changes in these grief-related negative cognitions, with negative cognitions at subsequent time points predicting prolonged grief over and above baseline levels.

More specifically, Boelen et al. (2006) found that negative cognitions about *the self, life,* and *the future* were strongly associated with prolonged grief symptoms at all three studied time points. Further, negative cognitions predicted later prolonged grief symptoms, independent of initial symptom levels (r = .57 to r = .70). Boelen, van den Bout and van den Hout (2010) found catastrophic misinterpretations strongly and significantly associated with prolonged grief symptoms across two time points. Additionally, catastrophic misinterpretations explained 1.7% of the variance in prolonged grief at follow-up, over and beyond the predictive effect of catastrophic misinterpretations at the first time point.

Boelen and Lenferink (2019) analyzed latent classes of prolonged grief in a longitudinal study design. They found that negative cognitions about *the self* were

significantly higher in the high symptom class compared to the low symptom and predominantly prolonged grief symptom class. The longitudinal analysis indicated that these negative cognitions about *the self* persisted over time, as evidenced by the 6-month follow-up assessment.

Self-blame, as one of the grief-related negative cognitions of interest, however, was not investigated in the longitudinal studies that are included in this review.

Several theoretical and clinical implications can be drawn upon the findings. Firstly, even if the additional variance explained by catastrophic misinterpretations in prolonged grief symptoms at follow-up was small (1.7%; Boelen, van den Bout & van den Hout, 2010), it still holds theoretical importance because it supports the premise of the underlying theory of prolonged grief, which posits that maladaptive interpretations of the grief experience contribute to the maintenance of prolonged grief symptoms. The theoretical importance lies in the confirmation that specific cognitive processes, like catastrophic misinterpretations, are relevant to the development and persistence of prolonged grief symptoms.

Additionally, the findings of the analysis suggest that engaging in negative cognitions early in the grieving process can predict later prolonged grief symptoms. Therefore, it seems like there is a need for early intervention strategies to address and mitigate negative thought patterns soon after a loss occurs to potentially prevent a normal grieving process from developing into prolonged grief. What might be a beneficial approach in prevention and treatment efforts for reducing prolonged grief symptoms might be comprehensive grief support programs. Such programs could include various therapeutic modalities, support groups, and education components that specifically address negative cognitions about the self, world, life, future, catastrophic misinterpretations, and self-blame, given their assumed central role in prolonged grief. Lastly, based on the findings of the included longitudinal data, it appears that prolonged grief symptoms can persist over time, so long-term monitoring and

follow-up care would be of great importance. Periodic assessments can help identify any recurrence of grief-related negative cognitions or the emergence of new challenges, allowing for timely intervention.

In conclusion, the presented studies consistently demonstrated grief-related negative cognitions to be a stable correlate of prolonged grief symptoms, including those about the self, life, the world, the future, as well as catastrophic misinterpretations, and (albeit less consistently) self-blame. These associations were moderate to strong, with variations in effect sizes across different types of grief-related negative cognitions. Longitudinal studies further support the notion that these negative cognitions are not merely concurrent but can predict and persist over time, indicating their potential role in the development and maintenance of prolonged grief symptoms.

Strengths

The strength of the present research manifests in the included longitudinal research designs investigating the influence of grief-related negative cognitions and prolonged grief symptoms. Longitudinal study designs with long-term follow-up assessments provide a more nuanced approach, enabling observing dynamic changes.

When turning towards the chosen method in the present systematic review, a notable strength lies in the study's preregistration, a step taken before data collection. By preregistering the research, transparency was prioritized, the credibility of our outcomes was enhanced, and the potential for bias was minimized.

Moreover, the usage of Covidence can be noted as another strength. The platform helps guide through the evaluation, selection, and extraction process while helping to maintain consistency and accuracy in the assessment. Further, Covidence is designed to align with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, promoting adherence to best practices in reporting systematic reviews.

Limitations and Future Directions

Despite its strengths, this review also has some limitations worth noting. First, when evaluating the chosen method of the current research, a notable limitation would be the inclusion of literature exclusively in English and only peer-reviewed publications. By following this inclusion criteria, it is possible that data from publications in other languages or non-published research (e.g., dissertations) were missed. For future research, we suggest broadening the scope of the included literature.

Second, the present research did not cover intervention studies, but doing so could be of great importance. To render an even more comprehensive picture of the influence of each of the grief-related negative cognitions and individual differences in grief reactions, it would be beneficial to examine intervention studies. Intervention studies provide insights into the practical implications of modifying negative cognitions in a clinical setting. By investigating trials targeting grief-related negative cognitions, it can be evaluated whether addressing these cognitions has a meaningful impact on reducing or preventing prolonged grief symptoms. Finally, intervention studies are important to acquire a holistic insight into the interplay between negative cognitions and prolonged grief symptoms.

Further, the present review focuses on zero-order correlations, which can be considered a strength and limitation. Zero-order correlations are a straightforward measure allowing for comparison. However, these correlations do not control the influence of confounding variables, potentially oversimplifying intricate relationships. Although it has not been the scope of the present systematic review, it is worth noting that the unique influences of negative cognitions on prolonged grief symptoms remain ambiguous but would be worth studying further. In short, existing longitudinal studies are promising, but more research is needed. For future studies, we suggest well-designed large-scale multi-wave longitudinal studies with multiple post-loss measurements of prolonged grief and covariates.

Finally, a limiting factor of this review is that although it was systematic, no meta-analysis was conducted. With a meta-analysis, generalizability is reinforced due to the synthesis of results from diverse studies, populations, or settings. Another vital insight gathered through a meta-analysis would be correction methods that account for publication bias in the effect size estimation. A meta-analysis can assess and quantify publication bias, a phenomenon where studies with statistically significant results are more likely to be published. Addressing publication bias helps ensure more accurate representations of the available evidence.

The present results should also be interpreted in light of the limitations of the existing literature on which this review is based. First of all, the data gathered from the cross-sectional research designs suggests that all grief-related negative cognitions of interest seem to play a crucial role in the development of prolonged grief symptoms. While cross-sectional studies offer valuable insights, their findings primarily capture between-person differences, revealing that individuals scoring high on prolonged grief symptoms are more likely to score high on negative cognitions. This implies a connection between the presence of negative cognitions and the development of prolonged grief symptoms. However, it does not necessarily infer that intervening in these negative cognitions would mitigate the likelihood or severity of developing prolonged grief symptoms. Causal links cannot be tested, and causal conclusions cannot be drawn in such study design. It is thus a limitation of the existing literature (and consequently, the present review) that it primarily consists of cross-sectional findings.

Second, another noteworthy concern is the sample sizes of the included studies. To detect a small correlation (r = .20), at least 190 participants are needed for adequate power (80%). In line with this concern is the finding of Boelen and Spuij (2008), who assessed 30 participants and found the association between self-blame and prolonged grief symptoms to be weak and not significant (r = .18). Notably, five studies (31%) exhibited low power,

which could have contributed to inflated effect sizes due to sampling variation and publication bias. When interpreting these effect sizes, the potential impacts of publication bias should always be considered, as it might lead to an overestimation of the overall effect sizes. For future research, we suggest including large-scale samples and accounting for publication bias through meta-analytic methods.

Finally, the participants of the studies included in this systematic review were predominantly female, which, according to Eisma and Stroebe (2021), is common in bereavement research. As a result, it is difficult to generalize the findings to other populations.

Conclusion

In summary, despite the limitations mentioned above, our systematic review offers an overview of quantitative research on both the concurrent as well as longitudinal associations between multiple grief-related negative cognitions and prolonged grief in the aftermath of bereavement. Our review shows these associations are robust, with effect sizes ranging from moderate to strong across studies. This suggests that negative cognitions likely play an essential role in prolonged grief. We can affirm a link between negative cognitions and prolonged grief symptoms, and the results suggest that this applies to various types of grief-related negative cognitions, such as negative global cognitions about *the self, life, world, and future*, catastrophic misinterpretations, self-blame, and prolonged grief symptoms. Although the reviewed literature consists mainly of cross-sectional research, existing longitudinal findings are promising.

In future research, exploring more longitudinal associations and intervention effects, whilst focusing on these specific types of negative cognitions, would be valuable. Further, future research could explore various sources of individual differences in these effects, such as type of loss and relationship with the deceased, as these remain unknown. Gaining a

nuanced comprehension of these factors could be clinically significant and have implications for upcoming research initiatives, as well as for the design and implementation of interventions.

Table 2

Summary of the findings on negative cognitions and prolonged grief.

Study (first author, year)	N (total bereaved sample)	Sample characteristics	Study design	NC measure	PG measure	Findings
Boelen (2003)	329 bereaved	Dutch, 81% female participants, mean age = 49.67 years, mean time since loss = 2.37 years. Relationship with the deceased: 67% lost a partner, 17% lost a child, 12% lost a parent, 4.0% lost a sibling; Cause of loss: 49% due to illness, 11% due to an accident, 10% due to suicide, 2% due to homicide, and 28% due to other causes.	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure.	ITG (Prigerson & Jacobs, 2001) is a 30-item measure. In this study, a 22-item adaptation, which represented emotional and behavioral symptoms, was used.	Significant positive correlations were found between NCs about the self (r = .58), NCs about the world (r = .57), NCs about life (r = .67), and NCs about the future (r = .64) PG symptoms. Self-blame (r = .35) and PG symptoms significantly correlated.
Boelen (2006)	97 bereaved	Dutch, 74% females, mean age = 44.52 years, mean time since loss = 2.55 months. Relationship with deceased: 43% lost a partner, 10% lost a child, 37% lost a parent, 10% other; Cause of loss: 5% due to an illness, 12% due to accident/ suicide/ homicide, 26% due to unexpected medical cause, 4% due to other causes.	Longitudinal, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure.	ICG-r (Prigerson and Jacobs, 2001b), a 30-item measure. In this study, a A shortened version with 21 items representing emotional and behavioral symptoms, was used.	NCs about the self (T1: r = .72, T2: r = .68, T3: r = .57), NCs about life (T1: r = .68, T2: r = .64, T3: r = .61), and NCs about the future (T1: r = .69, T2: r = .66, T3: r = .70) were significantly positively correlated with PG symptoms at all three time points. Negative cognitions about the future and life

Study (first author, year)	N (total bereaved sample)	Sample characteristics	Study design	NC measure	PG measure	Findings
						predicted PG at T1, beyond initial PG at T1 ($\triangle R^2$ T2 = 0.03, 0.03, 0.04; ($\triangle R^2$ T3 = 0.02, 0.03, 0.05).
Boelen (2008)	30 bereaved	Dutch, 100% female, mean age = 16.13 years, time since loss = 28.4 months. Relationship with the deceased: 57% lost a parent, 43% lost another relative; Cause of loss: 77% due to natural causes, 23% due to unnatural causes (accident, homicide).	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure.	ICG-r (Prigerson and Jacobs, 2001b), a 29-item measure, Dutch version.	NCs about the self (*r* = .60), NCs about the world (*r* = .53), NCs about life (*r* = .72), NCs about the future (r = .68), self-blame (*r* = .18) and catastrophic misinterpretations (*r* = .66) were significantly positively correlated with PG symptoms.
Boelen (2009)	254 bereaved	Dutch, 89% female, mean age = 42.2 years, time since loss = 41.90 months. Relationship with the deceased: 33% lost a partner, 18% lost a child, 5% lost a sibling, 35% lost a parent, 9% lost another relative; Cause of loss: 52% due to illness, 9% due to an accident/ suicide/ homicide, and 39% due to other causes.	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure.4 subscales were used.	ICG-r (Prigerson and Jacobs, 2001b), a 29-item measure, Dutch version.	NCs about the self (*r* = .62), NCs about life (*r* = .74), NCs about the future (*r* =.74), and catastrophic misinterpretations (r = .71) were significantly positively correlated with PG symptoms.

Study (first author, year)	N (total bereaved sample)	Sample characteristics	Study design	NC measure	PG measure	Findings
Boelen & van den Bout (2010)	161 bereaved	Dutch, 80% female, mean age = 53.5 years, time since loss = 4.29 years. Relationship with deceased: 53% lost a partner, 10% lost a parent, 25% lost a child, 12% lost another relative; Cause of loss: 58% due to illness, 12% due to accident/ suicide/ homicide, 18% due to unexpected medical causes, 12% due to other causes.	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure. Four subscales were used.	ICG-r (Prigerson and Jacobs, 2001b), a 29-item measure, Dutch version.	Global negative cognitions (r = .25) and catastrophic misinterpretations (r = .27) were significantly positively correlated with PG symptoms.
Boelen, van den Bout & van den Hout (2010)	82 bereaved	Dutch, 89% female, mean age = 42.5 years, time since loss = 2.8 months; Relationship with the deceased: 45% lost a partner or child, 55% lost another relative; Cause of loss: 10% due to accident/ suicide/ homicide, 90% due to illness or unexpected medical cause.	Longitudinal, survey	GTMQ (Boelen and Van den Hout, 2008), 6-item measure.	ICG-r (Prigerson and Jacobs, 2001b), a 29-item measure, Dutch version.	There was a significant positive correlation between catastrophic misinterpretations and PG symptoms concurrent and prospective (baseline r = .86 and at T2 r = .78). Catastrophic misinterpretations explained an additional 1.7% of the variance in PG symptoms at T2 beyond T1 PG severity.

Study (first author, year)	N (total bereaved sample)	Sample characteristics	Study design	NC measure	PG measure	Findings
Boelen (2010)	400 exclusively bereaved	Dutch, 89% females, mean age = 41.90 years, time since loss = 41.90 months. Relationship with the deceased: 31% lost a partner, 16% lost a child, 12% lost a sibling, 41% lost another relative; Cause of loss: 16% due to an accident/ suicide/ homicide, 84% due to non-violent causes.	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure. Four subscales were used.	ICG-r (Prigerson and Jacobs, 2001b), a 29-item measure, Dutch version.	Catastrophic misinterpretations (r = .48) were significantly positively correlated with PG symptoms.
Boelen (2011)	348 exclusively bereaved	Dutch, 91% females, mean age = 42.4 years, time since loss = 24.9 years. Relationship with the deceased: 34% lost a partner, 16% lost a child, 31% lost a parent, 19% lost another relative; Cause of loss: 52% due to an illness, 10% due to accident/ suicide/ homicide, 24% due to unexpected medical causes, and 14% due to other causes.	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure.	ICG-r (Prigerson and Jacobs, 2001b), a 20-item measure due to the removal of overlapping items.	NCs about the future and catastrophic misinterpretations significantly mediated the relationship between neuroticism and PG symptoms.

Study (first author, year)	N (total bereaved sample)	Sample characteristics	Study design	NC measure	PG measure	Findings
Boelen (2012)	264 exclusively bereaved	Dutch, 85% females, mean age = 46.5 years, time since loss = at At least six months. Relationship with the deceased: 52% lost a partner, 7% lost a child, 41% lost another relative; Cause of loss: 56% due to illness, 11% due to an accident, 10% due to suicide, 2% due to homicide, 21% due to other causes.	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure.	PGD scale, a short form of the ICG (Prigerson et al., 2009), an 11-item measure.	NCs about the future and catastrophic misinterpretations significantly mediated the relationship between loss centrality and PG symptoms.
Boelen (2015)	712 exclusively bereaved	Dutch, 75% females, mean age = 54.6 years, time since loss = 2.73 years. Relationship with the deceased: 67% lost a partner, 9% lost a child, 24% lost other loved one; Cause of loss: 13% due to homicide, 19% due to suicide, 68% due to an accident.	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure.	PGD scale, a short form of the ICG (Prigerson et al., 2009), an 11-item measure.	NCs about the self, NCs about the future, and catastrophic misinterpretations were significant mediators of the impact of violent loss of PG symptom levels.
Boelen (2016)	331 exclusively bereaved	Dutch, 66% females, mean age = 52.6, time since loss = 6.9 years. Relationship with the deceased: 8% lost a partner, 49% lost a child, 13% lost a parent, 16%	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure. Three	ICG-r (Prigerson and Jacobs, 2001b), a 21-item measure, Dutch version.	NCs about the self (r = .69), NCs about life (r = .72), and NCs about the future (r = .73), as well as catastrophic misinterpretations (r = .72),

Study (first author, year)	N (total bereaved sample)	Sample characteristics	Study design	NC measure	PG measure	Findings
		lost a sibling, 14% lost another relative; Cause of loss: 100% due to homicide.		subscales were used.		correlated significantly and positively with PG symptoms.
Boelen (2019)	322 exclusively bereaved	Dutch, 74% females, mean age = 55.46 years, mean time since loss = 3.40 months. Relationship with the deceased: 30% lost a partner or child, 70% lost another relative; Cause of loss: 9% due to accident/ suicide/ homicide, 91% due to natural causes.	Longitudinal, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure. Four subscales were used.	PGD scale, short from the ICG (Prigerson et al., 2009), an 11-item measure.	Latent class analysis revealed three classes of PG severity: high, moderate, and low. NC about self, life, and future were lowest in the low symptom class and highest in the high symptom class. NC about the self, life future, and catastrophes were significantly correlated with prolonged grief symptoms among all class members.
Cesur (2018)	300 exclusively bereaved	Turkish, 76% females, mean age = 34.90 years, time since loss = 5.01 years. Relationship with the deceased: 12% lost their mother, 18% lost their father, 1% lost a child, 1% lost a partner, 5% lost a sibling, 32% lost a	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure.	ICG-r (Prigerson & Jacobs, 2001b), a 30-item measure.	NCs about self (r = .59), NCs about the world (r = .64), NCs about the future (r = .64), and catastrophic misinterpretations (r = .64) were significantly positively correlated with PG symptoms.

Study (first author, year)	N (total bereaved sample)	Sample characteristics	Study design	NC measure	PG measure	Findings
		grandparent, 18% lost a second-degree relative, 13% lost a friend; Cause of loss: 51% due to sudden illness, 28% due to expected illness, 21% due to accident/ suicide/ homicide.				
Cesur-Soysal (2020)	475 exclusively bereaved	Turkish, 75% females, mean age = 29.70 years, mean time since loss = 4.71 years. Relationship with the deceased: 38% lost a first-degree relative, 50% lost a second-degree relative, 12% lost a friend; Cause of loss: 57% due to sudden illness, 19% due to expected illness, 24% due to accident/ suicide/ homicide.	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure. The Turkish version consists of 30 items.	ICG (Prigerson et al., 1995), a 19-item Measure.	NCs about the self (r = .59), NCs about the world (r = .58), and NCs about the future (r = .66) were significantly positively correlated with PG symptoms.
Doering (2021)	585 exclusively bereaved	German, 88% females, mean age = 40.2 years, Mean time since loss = 35.3 months. Relationship with the deceased: 25% lost spouse/ partner, 16% lost a child, 41% lost a parent,	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure.	ICG-D (Lumbeck et al., 2013), a 19-item measure.	NCs about the self (r = .72), NCs about the world (r = .86), NCs about life (r = .76), and NCs about the future (r = .76) as well as self-blame (r = .48) were found to correlate significantly

Study (first author, year)	N (total bereaved sample)	Sample characteristics	Study design	NC measure	PG measure	Findings
		7% lost a sibling, 22% lost a grandparent, 13% lost another; Cause of loss: 68% due to a natural cause, 0.2% due to an accident, 9% due to suicide, 1% due to a homicide, and 12% due to other causes.				positively with PG symptoms.
Liu (2021)	104 exclusively bereaved	Canadian, 81% females, mean age = 21.0 years, meantime since loss = 5.29 years. Relationship with the deceased: 49% lost an extended family member, such as a grandparent, 13% lost an immediate family member, such as a sibling or a parent, and 33% preferred not to answer the question. Cause of loss: not specified.	Cross-sectional, survey	GCQ (Boelen and Lensvelt-Mulders, 2005), 38-item measure.	ICG (Prigerson et al., 1995), a 19-tem Measure.	NCs about the self and NCs about the future were significantly associated with PG symptoms. NCs about the world did not show a significant direct relationship with PG symptoms. Self-blame was significantly related to PG symptoms.

Note. NC = Negative Cognitions, PG = Prolonged Grief, GCQ = Grief Cognitions Questionnaire, GTMQ = Grief-related Threatening Misinterpretations Questionnaire, TBQ = Typical Beliefs Questionnaire, CG = Complicated Grief, ITG = Inventory of Traumatic Grief, ICG-r = Inventory of Complicated Grief-revised, ICG = Inventory of Complicated Grief, PGD scale = Prolonged Grief Disorder Scale; T1 = first timepoint of measurement, T2 = second timepoint of measurement, T3 = third timepoint of measurement. $\triangle R^2$ = Change in explained variance when controlling for the relevant variables in a hierarchical regression analysis. B = Beta coefficients from univariate ANOVA.

References

Boelen (2009). The centrality of a loss and its role in emotional problems among bereaved people. *Behavior Research and Therapy, 47*(7), 616–622. https://doi.org/10.1016/j.brat.2009.03.009

Boelen (2009a). A Sense of 'unrealness' about the death of a loved one: An exploratory study of its role in emotional complications among bereaved individuals. *Applied Cognitive Psychology*, *24*(2), 238–251. https://doi.org/10.1002/acp.1557

Boelen (2012). Variables mediating the linkage between loss centrality and post-loss psychopathology. *The Journal of Nervous and Mental Disease*, *200*(9), 801–806. https://doi.org/10.1097/nmd.0b013e318266ba02

Boelen, P. A., & Klugkist, I. (2011). Cognitive behavioral variables mediate the associations of neuroticism and attachment insecurity with Prolonged Grief Disorder severity. *Anxiety, Stress & Coping: An International Journal*, *24*(3), 291–307. https://doi.org/10.1080/10615806.2010.527335

Boelen, P. A., & Lenferink, L. (2019). Symptoms of prolonged grief, posttraumatic stress, and depression in recently bereaved people: Symptom profiles, predictive value, and cognitive behavioral correlates. *Social Psychiatry and Psychiatric Epidemiology*, *55*(6), 765–777. https://doi.org/10.1007/s00127-019-01776-w

Boelen, P. A., & Lensvelt-Mulders, G. (2005). Psychometric properties of the Grief Cognitions Questionnaire (GCQ). *Journal of Psychopathology and Behavioral Assessment*, *27*(4), 291–303. https://doi.org/10.1007/s10862-005-2409-5

Boelen, P. A., & Spuij, M. (2008). Negative cognitions in loss-related emotional distress in adolescent girls: A preliminary study. *Journal of Loss and Trauma*, *13*(5), 441–449. https://doi.org/10.1080/15325020802171292

Boelen, P. A., & Van Den Bout, J. (2010). Anxious and depressive avoidance and symptoms of prolonged grief, depression, and -posttraumatic stress disorder. *Psychologica Belgica*, *50*(1–2), 49. https://doi.org/10.5334/pb-50-1-2-49

Boelen, P. A., De Keijser, J., & Smid, G. E. (2015). Cognitive–behavioral variables mediate the impact of violent loss on post-loss psychopathology. *Psychological Trauma: Theory, Research, Practice, and Policy*, *7*(4), 382–390. https://doi.org/10.1037/tra0000018

Boelen, P. A., Keijsers, L., & Van Den Hout, M. A. (2012). The role of self-concept clarity in prolonged grief disorder. *Journal of Nervous and Mental Disease*, *200*(1), 56–62. https://doi.org/10.1097/nmd.0b013e31823e577f

Boelen, P. A., Van Den Bout, J., & Van Den Hout, M. A. (2003). The role of cognitive variables in psychological functioning after the death of a first-degree relative. *Behavior Research and Therapy*, *41*(10), 1123–1136. https://doi.org/10.1016/s0005-7967(02)00259-0

Boelen, P. A., Van Den Bout, J., & Van Den Hout, M. A. (2006). Negative cognitions and avoidance in emotional problems after bereavement: A prospective study. *Behavior Research and Therapy*, *44*(11), 1657–1672. https://doi.org/10.1016/j.brat.2005.12.006

Boelen, P. A., Van Den Bout, J., & Van Den Hout, M. A. (2010). A prospective examination of catastrophic misinterpretations and experiential avoidance in emotional distress following loss. *Journal of Nervous and Mental Disease*, *198*(4), 252–257. https://doi.org/10.1097/nmd.0b013e3181d619e4

Boelen, P. A., Van Den Bout, J., De Keijser, J., & Hoijtink, H. (2003). Reliability and validity of the Dutch Version of the Inventory of Traumatic Grief (ITG). *Death Studies*, *27*(3), 227–247. https://doi.org/10.1080/07481180302889

Boelen, P. A., Van Den Hout, M. A., & Van Den Bout, J. (2006). A Cognitive-behavioral conceptualization of complicated grief. *Clinical Psychology-science and Practice*, *13*(2), 109–128. https://doi.org/10.1111/j.1468-2850.2006.00013.x

Boelen, P. A., Van Denderen, M., & De Keijser, J. (2015). Prolonged grief, posttraumatic stress, anger, and revenge phenomena following homicidal loss. *Homicide Studies*, *20*(2), 177–195. https://doi.org/10.1177/1088767915580674

Bryant, R. A., Kenny, L., Joscelyne, A., Rawson, N., Maccallum, F., Cahill, C., & Hopwood, S. (2017). Predictors of treatment response for cognitive behavior therapy for prolonged grief disorder. *European Journal of Psychotraumatology*, *8*(sup6). https://doi.org/10.1080/20008198.2018.1556551

Cesur, G., & Batıgün, A. D. (2018). A Turkish adaptation of the grief cognitions questionnaire: Factor analysis, reliability and validity. *Current Psychology*, *40*(1), 72–80. https://doi.org/10.1007/s12144-018-9983-7

Cesur-Soysal, G., & Batıgün, A. D. (2020). Prolonged grief, emotion regulation and loss-related factors: An investigation based on cognitive and behavioral conceptualization. *Death Studies*, *46*(6), 1316–1328. https://doi.org/10.1080/07481187.2020.1846639

Doering, B. K., & Eisma, M. C. (2016). Treatment for complicated grief. *Current Opinion in Psychiatry*, *29*(5), 286–291. https://doi.org/10.1097/yco.0000000000000263

Doering, B. K., Boelen, P. A., Eisma, M. C., & Barke, A. (2021). Validation of a German version of the Grief Cognitions questionnaire and establishment of a short form. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.620987

Eisma, M. C. (2023). Prolonged grief disorder in ICD-11 and *DSM*-5-TR: Challenges and controversies. *Australian and New Zealand Journal of Psychiatry*, *57*(7), 944–951. https://doi.org/10.1177/00048674231154206

Eisma, M. C., & Stroebe, M. (2021). Emotion regulatory strategies in complicated grief: A Systematic Review. *Behavior Therapy*, *52*(1), 234–249. https://doi.org/10.1016/j.beth.2020.04.004

Glickman, K., Shear, M. K., & Wall, M. M. (2016). Mediators of outcome in complicated grief treatment. *Journal of Clinical Psychology*, *73*(7), 817–828. https://doi.org/10.1002/jclp.22384

Lechner-Meichsner, F., Mauro, C., Skritskaya, N., & Shear, M. K. (2021). Change in avoidance and negative grief-related cognitions mediates treatment outcome in older adults with prolonged grief disorder. *Psychotherapy Research*, *32*(1), 78–90. https://doi.org/10.1080/10503307.2021.1909769

Liu, J. J. W., Taillefer, S. E., Tassone, A., & Vickers, K. S. (2019). The importance of bereavement cognitions on grief symptoms: Applications of cognitive processing therapy. *Death Studies*, *45*(7), 552–562. https://doi.org/10.1080/07481187.2019.1671537

Lumbeck, G., Brandstätter, M., & Geissner, E. (2012). Erstvalidierung der deutschen Version des „Inventory of Complicated Grief" (ICG-D). *Zeitschrift Fur Klinische Psychologie Und Psychotherapie*, *41*(4), 243–248. https://doi.org/10.1026/1616-3443/a000172

Prigerson, H. G., Horowitz, M. J., Jacobs, S., Parkes, C. M., Aslan, M., Goodkin, K., Raphael, B., Marwit, S. J., Wortman, C. B., Neimeyer, R. A., Bonanno, G. A., Block, S. D., Kissane, D. W., Boelen, P. A., Maercker, A., Litz, B. T., Johnson, J. G., First, M. B., & Maciejewski, P. K. (2009). Prolonged Grief Disorder: Psychometric validation of criteria proposed for DSM-V and ICD-11. *PLOS MEDICINE*, *6*(8), e1000121. https://doi.org/10.1371/journal.pmed.1000121

Prigerson, H. G., Maciejewski, P. K., Reynolds, C. F., Bierhals, A. J., Newsom, J. T., Fasiczka, A. L., Frank, E., Doman, J., & Miller, M. W. (1995). Inventory of

complicated grief: A scale to measure maladaptive symptoms of loss. *Psychiatry Research*, *59*(1–2), 65–79. https://doi.org/10.1016/0165-1781(95)02757-2