

University of Groningen

Cognitive reappraisal, emotional expression and mindfulness in adaptation to bereavement

Eisma, Maarten C.; Janshen, Antje; Huber, Lukas F.T.; Schroevers, Maya J.

Published in:
Anxiety, Stress and Coping

DOI:
[10.1080/10615806.2023.2165647](https://doi.org/10.1080/10615806.2023.2165647)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2023

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Eisma, M. C., Janshen, A., Huber, L. F. T., & Schroevers, M. J. (2023). Cognitive reappraisal, emotional expression and mindfulness in adaptation to bereavement: A longitudinal study. *Anxiety, Stress and Coping*, 36(5), 577-589. Advance online publication. <https://doi.org/10.1080/10615806.2023.2165647>

Copyright

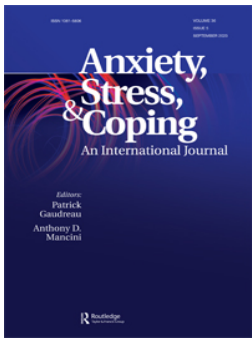
Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.



Anxiety, Stress, & Coping

An International Journal

ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/gasc20>

Cognitive reappraisal, emotional expression and mindfulness in adaptation to bereavement: a longitudinal study

Maarten C. Eisma, Antje Janshen, Lukas F. T. Huber & Maya J. Schroevers

To cite this article: Maarten C. Eisma, Antje Janshen, Lukas F. T. Huber & Maya J. Schroevers (2023) Cognitive reappraisal, emotional expression and mindfulness in adaptation to bereavement: a longitudinal study, *Anxiety, Stress, & Coping*, 36:5, 577-589, DOI: [10.1080/10615806.2023.2165647](https://doi.org/10.1080/10615806.2023.2165647)

To link to this article: <https://doi.org/10.1080/10615806.2023.2165647>



© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 13 Jan 2023.



Submit your article to this journal [↗](#)



Article views: 1722





View related articles [↗](#)



View Crossmark data [↗](#)



Cognitive reappraisal, emotional expression and mindfulness in adaptation to bereavement: a longitudinal study

Maarten C. Eisma ^a, Antje Janshen^a, Lukas F. T. Huber^a and Maya J. Schroevers ^b

^aDepartment of Clinical Psychology and Experimental Psychopathology, University of Groningen, Groningen, The Netherlands; ^bDepartment of Health Psychology, University of Groningen/University Medical Center Groningen, Groningen, The Netherlands

ABSTRACT

Background and Objectives: Maladaptive emotion regulation strategies increase prolonged grief and depressive symptoms following bereavement. However, less is known about the role of adaptive emotion regulation strategies in adaptation to loss. Therefore, we examined the concurrent and longitudinal associations of three putative adaptive emotion regulation strategies (cognitive reappraisal, emotional expression, and mindfulness) with prolonged grief and depression symptoms.

Design: A two-wave longitudinal survey.

Methods: A sample of 397 bereaved Dutch adults (89% female, mean age 54 years) completed validated questionnaires to assess trait cognitive reappraisal, emotional expression, mindfulness and prolonged grief and depression symptoms at baseline (T1) and 344 participants completed symptom measures again six months later (T2).

Results: Zero-order correlations demonstrated that mindfulness, cognitive reappraisal and emotional expression relate negatively to T1 and T2 prolonged grief and depression symptoms. In multiple regression analyses, controlling for relevant background variables, all emotion regulation strategies related negatively to T1 prolonged grief and depression symptoms. In multiple regression analyses, controlling for T1 symptoms and background variables, mindfulness predicted lower T2 depression symptoms.

Conclusions: Adaptive emotion regulation strategies relate negatively to post-loss psychopathology symptoms, yet only mindfulness longitudinally predicts lower depression symptoms. Dispositional mindfulness may be a protective factor in psychological adaptation to bereavement.

ARTICLE HISTORY

Received 16 July 2022

Revised 24 December 2022

Accepted 2 January 2023


KEYWORDS

positive reappraisal;
emotional suppression;
coping; emotion regulation;
complicated grief

Introduction

The death of a loved one can be a highly distressing experience. Therefore, bereaved adults may develop mental health problems, including anxiety disorders, major depression, and posttraumatic stress disorder (Zisook et al., 2014). Additionally, a minority of bereaved individuals develops severe, persistent, and disabling grief, termed prolonged grief. Diagnoses characterized by such grief responses, termed prolonged grief disorder (PGD), have been included in the International Classification of Diseases (ICD-11: World Health Organization, 2018) and the text revision of the Diagnostic

CONTACT Maarten C. Eisma  m.c.eisma@rug.nl

 Supplemental data for this article can be accessed online at <https://doi.org/10.1080/10615806.2023.2165647>.

© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

and Statistical Manual of Mental Disorders (DSM-5-TR, American Psychiatric Association, 2022). Effective psychological interventions have been developed to ameliorate prolonged grief symptoms and related mental health problems, such as cognitive-behavioral therapy and complicated grief therapy (Boelen et al., 2007; Eisma et al., 2015; Shear et al., 2016). A systematic review found that psychological interventions for prolonged grief on average to have moderate effect sizes on post-loss psychopathology (Johannsen et al., 2019). A better understanding of changeable risk factors of post-loss psychopathology may help to improve current treatments.

Prolonged grief is characterized by severe emotional disturbances, e.g., yearning, sorrow, bitterness, guilt, anger, loneliness, and meaninglessness. Adaptation to bereavement requires effective strategies to manage these emotions. Therefore, emotion regulation is critical in the development and reduction of severe grief reactions (Eisma & Stroebe, 2021). Mental health problems that frequently co-occur with prolonged grief, such as depression, are also characterized by severe emotional disturbances (Komischke-Konnerup et al., 2021). While prolonged grief shares some affective features with depression (e.g., sadness, inability to experience positive mood) a distinctive feature of prolonged grief is separation distress (e.g., severe and persistent yearning for the deceased). Effective emotion regulation may thus also ameliorate prolonged grief and comorbid emotional problems. Emotion regulation is commonly defined as the way one influences one's experienced emotions, whether controlled or automatic, and conscious or unconscious (Gross, 1998). Individuals regulate their emotions in a variety of ways. Emotion regulation strategies are proposed to be either adaptive or maladaptive (Naragon-Gainey et al., 2017). A recent systematic review of empirical research on the relationships between emotion regulation strategies and prolonged grief symptoms has demonstrated that there is an overrepresentation of studies on putative maladaptive emotion regulation strategies, such as rumination or avoidance (Eisma & Stroebe, 2021). However, research aiming to elucidate the role of putative adaptive emotion regulation strategies in psychological adaptation to bereavement is scarce. The systematic review identified three emotion regulation strategies that may be helpful to bereaved adults: cognitive reappraisal, emotional expression, and mindfulness.

First, cognitive reappraisal is the ability to reinterpret and change the way one thinks about emotional situations (Gross & John, 2003). Positive reappraisal is the cognitive process by which stressful situations are reconstrued as valuable or beneficial. Following bereavement, cognitive reappraisal may help to reinterpret negative experiences, including secondary stressors (Eisma & Stroebe, 2021), thereby decreasing associated emotional distress. A large survey in Nigeria found a small positive association between deliberate rumination (akin to positive reappraisal) and prolonged grief symptoms (Chukwuorji et al., 2018). Another recent study showed a small negative association between cognitive reappraisal and depressive symptoms in bereaved adults (Chen & Fagundes, 2022). Together, the evidence hints towards a negative concurrent association between cognitive reappraisal and prolonged grief and depressive symptoms. This aligns with meta-analyses of research in non-bereaved samples reporting a small negative concurrent association of cognitive reappraisal with anxiety and depression (Aldao et al., 2010; Hu et al., 2014). However, longitudinal analyses among non-bereaved samples show mixed results; some survey studies show significant longitudinal effects on psychopathology symptoms whereas others do not (e.g., Brewer et al., 2016; Dawel et al., 2021). A lack of longitudinal research on this topic in bereaved samples makes it unclear if cognitive reappraisal could ameliorate post-loss psychopathology.

Second, emotional expression is the proposed adaptive counterpart of emotional suppression, a maladaptive emotional coping strategy that attempts to inhibit either the expression or the experience of emotions. Suppressing one's emotional reactions may deplete cognitive resources and can, in the long term, lead to distress, negative feelings about the self, as well as avoidant and anxious behavior (Aldao et al., 2010; Cutuli, 2014). Following loss, bereaved individuals might fear social disconnection when expressing their negative feelings to others, stimulating the suppression of emotions in social situations. Additionally, bereaved individuals may have trouble accepting their loss and avoid being confronted with its reality and associated negative emotions. This is proposed

to hinder the integration of knowledge about the separation from the deceased with existing autobiographical knowledge in memory, leading to persistence of grief (Boelen, 2006). The suppression of emotions may co-occur with such avoidance strategies and may have similar effects. Accordingly, a recent survey of 630 predominantly bereaved (89%) and traumatized youth found a moderate positive correlation of emotional suppression with prolonged grief symptoms (Dodd et al., 2020) and smaller study among bereaved children yielded similar results (Kaplow et al., 2013). However, a study of bereaved adults did not support an association between emotional suppression and depressive symptoms (Chen & Fagundes, 2022). Mixed findings may be due to the fact that the positive associations of emotional suppression with levels of different types of psychopathology are estimated to be small (Hu et al., 2014) and therefore difficult to detect. Longitudinal and experimental research in non-bereaved samples shows that emotional expression sometimes does and sometimes does not predict lower psychopathology levels (e.g., Arditte & Joormann, 2011; Dawel et al., 2021; Ehring et al., 2010; Larsen et al., 2013; Matheson & Anisman, 2003). Thus, emotional expression potentially reduces psychopathology, yet due to mixed findings and a lack of longitudinal research among bereaved adults, it is unclear if this is also the case following loss.

Third, mindfulness can be defined as an open and receptive awareness that arises through paying attention, on purpose, in the present moment, non-judgmentally (Brown & Ryan, 2003; Kabat-Zinn, 2003). Mindfulness may help bereaved people through increased awareness of distressing thoughts and feelings, feeling how their body responds to these experiences, being open to these experiences and allowing them to be, and observing them with curiosity and kindness, nonjudgmentally (Farb et al., 2014). By engaging in mindfulness, negative thoughts and feelings may be perceived as more objective and less personal, providing a space to manage them in a more adaptive way and improving rationality (Quaglia et al., 2015). For example, one may more easily step out habitual unhelpful thinking and behavior (e.g., rumination, avoidance) which could improve the way one deals with negative loss-related emotions (Eisma et al., 2013).

A few empirical studies have examined the relation between mindfulness and post-loss psychopathology. A large cross-sectional survey among recently bereaved Chinese adults showed that mindfulness was negatively associated with anxiety, depression and prolonged grief symptoms (Tang et al., 2019). Another large cross-sectional survey recently replicated the negative association of mindfulness with depression and prolonged grief symptoms (Huang, 2022). Moreover, a mindfulness-based cognitive therapy intervention lowered depression symptoms but not prolonged grief symptoms in a non-randomized controlled pilot trial (O'Connor et al., 2014). In an open pilot trial of mindfulness-based care symptoms of depression, anxiety, and posttraumatic stress significantly decreased (Thielemann et al., 2014). Lastly, a larger randomized controlled trial tested the effects of mindfulness therapy against progressive muscle relaxation and a waitlist (Knowles et al., 2021). The results showed a significant reduction in prolonged grief symptoms over time in the mindfulness and progressive muscle relaxation groups. Yet, mindfulness did not significantly reduce prolonged grief symptoms relative to the waitlist. In summary, there is evidence for a cross-sectional association between mindfulness and bereavement-related psychopathology. Applying mindfulness techniques may thus reduce post-loss psychopathology, yet results from trials have been inconsistent.

Despite their potential theoretical and clinical importance, research on adaptive emotion regulation strategies in bereaved adults has been limited and results are mixed. Notably, no studies to date have yet aimed to clarify the longitudinal associations between the disposition to engage in adaptive emotion regulation strategies and post-loss psychopathology. Therefore, we will examine the concurrent and longitudinal relations between putative adaptive emotion regulation strategies with prolonged grief symptoms by applying multivariate models to longitudinal survey data. We hypothesize that cognitive reappraisal, emotional expression and mindfulness relate negatively to prolonged grief symptoms both concurrently and longitudinally. Since depression symptoms often co-occur with prolonged grief symptoms, and adaptive emotion regulation could similarly ameliorate such mental health problems, a secondary aim was to explore the concurrent and longitudinal associations of the three adaptive emotion regulation strategies with depressive symptoms.

Methods

Procedure and participants

The Ethical Committee Psychology of the University of Groningen approved this study (registration number: PSY-1819-S-0173). The study hypotheses and analyses were preregistered at [aspredicted.org](https://aspredicted.org/mw8ra.pdf) (<https://aspredicted.org/mw8ra.pdf>). The data was collected as a part of a larger longitudinal survey study on psychological adaptation to loss. Participants were eligible for this study if they had experienced a loss within the past five years. Participants were recruited via a website that contained a grief self-test and the content network of Google (Google Ads). The advertisement led to a website containing information about study goals and procedures. After providing online informed consent, participants could access a survey programmed in Qualtrics. At the end of the survey, participants were asked if they would be interested in participating in a longitudinal survey study. Those who were interested ($N = 561$) received invitations to complete another survey six and 12 months later. Two reminders were sent at each time point, two and three weeks after the initial invitation.

The present data is from the second and third wave of the survey. For reading ease, we refer to the second wave of the study as T1 and the third wave as T2. At T1, 397 adults (89% female; mean age: 53.68 years ($SD = 12.74$)) who experienced a loss on average 18.02 ($SD = 14.81$) months ago participated. A majority had experienced a non-violent loss (87%) of a partner (48%) or parent (31%). In total, 344 (87%) people who completed the T1 survey also filled out the T2 survey. Sample characteristics are shown in [Table 1](#).

Measures

Sociodemographic and loss-related characteristics

To assess sociodemographic characteristics (e.g., age, gender, and educational level) and characteristics of the loss and the deceased (e.g., time since loss, relationship with the deceased, gender of the deceased, cause of death, expectedness of the loss), we administered a self-constructed questionnaire.

Table 1. Sample Characteristics.

	Baseline ($N = 397$)	Follow-up ($N = 344$)
Gender, n (%)		
Female	352 (89)	305 (89)
Age in years, M (SD)	53.68 (12.74)	53.83 (12.55)
Level of education ^a , n (%)		
Lower education	167 (42)	144 (42)
Higher education	230 (58)	200 (58)
The deceased was, n (%)		
Partner	192 (48)	173 (50)
Parent	122 (31)	102 (30)
Sibling	21 (5)	16 (5)
Child	46 (12)	39 (11)
Other person ^c	16 (4)	14 (4)
Time since the loss in months, M (SD)	18.02 (14.81)	23.93 (14.64)
Cause of death ^b , n (%)		
Nonviolent	344 (87)	303 (88)
Violent	53 (13)	41 (12)
Gender of the deceased, n (%)		
Male	269 (68)	232 (67)
The loss was, n (%)		
Expected	132 (33)	116 (34)
Unexpected	198 (50)	173 (50)
Both or neither	67 (17)	55 (16)

Note. ^a Higher education = college and university, Lower education = education levels lower than college or university; ^b Non-violent loss = natural deaths and coronavirus deaths, Violent loss = accident, murder and suicides; ^c Other person (at T1) = multiple losses (38%), friend (6%), uncle (6%), grandmother (6%), niece/nephew (13%), grandchild (13%), ex-partner (13%), did not indicate (6%).

Cognitive reappraisal and emotional expression

Cognitive reappraisal and emotional expression were measured using the subscales of the Emotion Regulation Questionnaire (ECQ; Gross & John, 2003; Dutch version: Koole, 2004). Six items of the cognitive reappraisal subscale and 4 items of the emotional expression subscale were included. Sample items are: "I control my emotions by changing the way I think about the situation I'm in." (cognitive reappraisal) and "I keep my emotions to myself" (emotional expression). Participants had to indicate on a 7-point scale which ranged from 1 (strongly disagree) to 7 (strongly agree) to what extent they agree with each statement regarding themselves. Lower scores on the emotional expression scale indicated higher emotional expression. For ease of interpretation, a minus was added to the total scores of this scale, so that higher scores would indicate higher emotional expression. Higher scores on cognitive reappraisal indicate higher levels of cognitive reappraisal. In this sample, the reliability of the cognitive reappraisal subscale was good ($\alpha = .85$). The reliability of the emotional expression subscale was acceptable ($\alpha = .79$).

Mindfulness

A 6-item abbreviated version of the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003; Dutch 6-item version: Schroevers et al., 2008) was utilized to assess mindfulness. A sample item is: "I find myself doing things without paying attention." Participants indicated how frequently they have certain experiences on a 6-point scale ranging from 1 (almost always) to 6 (almost never). A total score can be calculated with higher scores indicating higher levels of mindfulness (range 6–30). The reliability of the MAAS was excellent ($\alpha = .92$).

Prolonged grief symptoms

To assess prolonged grief symptoms, we used the 22-item Traumatic Grief Inventory-Self Report Plus (TGI-SR+; Lenferink et al., 2022). The TGI-SR + can be used to assess symptoms of Persistent Complex Bereavement Disorder per DSM-5, and PGD per ICD-11 and DSM-5-TR. Participants had to indicate to what extent they experienced symptoms in the previous months on a 5-point scale ranging from 1 (never) to 5 (always). The total score was used as a general measure of prolonged grief symptoms in the main analyses. The internal consistency of the TGI-SR + was excellent (at T1, $\alpha = .94$; at T2, $\alpha = .94$).

Symptoms of depression were measured using the 16-item Quick Inventory of Depressive Symptomatology (QIDS; Rush et al., 2003; Dutch version: Lako et al., 2014). Participants were asked to indicate on a 4-point scale ranging from 0 to 3 (varying anchors) how frequently they experience symptoms of depression (e.g., feeling restless, loss of concentration). The reliability of the QIDS was good (at T1, $\alpha = .82$; at T2, $\alpha = .80$).

Statistical analyses

First, we investigated the zero-order correlations between cognitive reappraisal, emotional expression, mindfulness, and prolonged grief and depression symptoms. Furthermore, we compared sociodemographic (age, gender, educational level), loss-related (time since loss, relationship with the deceased, sex of the deceased, cause of death, expectedness of the loss), independent (cognitive reappraisal, emotional expression, and mindfulness), and dependent variables (prolonged grief and depression symptoms) of study completers and people who only completed the T1 survey. We planned independent t-tests (for continuous variables) and Chi-squared tests (for categorical variables). We planned to use non-parametric tests in case assumptions were violated.

Second, we conducted four separate multiple regression analyses of all the sociodemographic variables and loss-related characteristics on prolonged grief symptoms and depression symptoms at T1 and T2 (the models predicting T2 symptom levels controlled for T1 symptom levels). Background variables that were found to be significant predictors of prolonged grief or depression levels at T1 and/or T2 were included in the main regression analyses for all outcomes.

We checked the assumptions of our main regression analyses regarding the relations of the three emotion regulation strategies with prolonged grief and depression symptoms. We inspected multicollinearity and linearity, normality of residuals, and homoscedasticity, using scatterplots, normal probability plots, and residual plots, respectively. The existence of outliers was inspected using Mahalanobis distances and we decided to remove outliers prior to our main regression analyses.

In the main analysis, four hierarchical regression analyses were conducted. In the first analysis, prolonged grief symptoms at T1 was the dependent variable. In the first step, relevant background variables were included as control variables. In the second step, cognitive reappraisal, emotional expression, and mindfulness were added as predictors. Next, another hierarchical regression was conducted including prolonged grief symptoms at T2 as the dependent variable. In the first step, the prolonged grief symptoms at T1 were added as a predictor. In the second step, relevant background variables were included as control variables. In the third step, cognitive reappraisal, emotional expression, and mindfulness were added as predictors. Next, two similar regression analyses were run using depression symptoms at T1 and T2 as a dependent variable, respectively.

Lastly, due to qualitative differences between current and past pathological grief criteria sets (Eisma et al., 2022a) sensitivity analyses were conducted to check if outcomes would vary if we used symptoms of ICD-11 and DSM-5-TR prolonged grief disorder as dependent variables. We ran two regressions analyses that were identical to the previous hierarchical regression analyses but included the summed scores for the DSM-5-TR and for the ICD-11 items of the TGI-SR + for prolonged grief disorder (scoring rules see: Lenferink et al., 2022) at T1 and T2 as independent variables.

All analyses were conducted using SPSS version 27 (IBM Corporation, 2020).

Results

Preliminary analyses

Since the assumption of normality was mildly violated for some variables, we calculated nonparametric zero-order correlations between T1 cognitive reappraisal, emotional expression, mindfulness, and T1 and T2 prolonged grief symptoms and depression symptoms (see Table 2).

Next, we investigated the differences in characteristics of the participants who completed the T1 and T2 survey and those who only completed the T1 survey. Significant differences were found on loss-related variables and demographics. Participants who completed both surveys were older, $U(397) = 6961.00$, $p = .006$, more likely to have experienced nonviolent loss, 88% vs. 77%, $\chi^2(1) = 4.5$, $p = .033$, compared to participants who only completed T1. No significant differences were found on the demographic variables gender and education level and the loss-related variables time since loss, gender of the deceased, relationship with the deceased, and loss expectedness.

Subsequently, we conducted four separate multiple regression analyses regressing all sociodemographic and loss-related characteristics on prolonged grief symptoms and depression at T1 and T2 (see Supplemental Tables 1 and 2). All variables that were significant predictors of any of these dependent variables were included in the main analyses as control variables. Therefore, we included educational level, time since loss, relationship with the deceased, cause of death, and expectedness of the loss in the main analyses.

We also checked the assumptions for the main analyses. Minor violations of the assumption of homoscedasticity and normality were observed. However, potential problems caused by the

Table 2. Nonparametric Zero-order Correlations between Main Variables.

	Prolonged grief T1	Prolonged grief T2	Depression T1	Depression T2
Cognitive reinterpretation	-.21**	-.21**	-.18**	-.17*
Emotional expression	-.35**	-.29**	-.29**	-.27**
Mindfulness	-.53**	-.49**	-.60**	-.53**

Note. * $p < .01$. ** $p < .001$

violation of the normality assumptions were countered by the large sample used in this study following the central limit theorem (Ernst & Albers, 2017). Heteroscedasticity does not represent a problem because estimations are consistent and unbiased if the variance is finite (Chatterjee & Hadi, 2006).

Hierarchical regression analyses of cognitive reappraisal, emotional expression, and mindfulness on prolonged grief and depression symptoms

The results of regression analyses for prolonged grief symptoms are shown in Table 3. The first model which included T1 prolonged grief symptoms as the dependent variable was significant, $F(12, 368) = 23.05, p < .001$. The previously identified control variables explained 14% of the variance in T1 prolonged grief symptoms, $\Delta F(9, 371) = 6.85, p < .001$. In the second step, the independent variables cognitive reappraisal, emotional expression, and mindfulness explained an additional 29% of the variance, $\Delta F(3, 368) = 61.57, p < .001$. Cognitive reappraisal ($\beta = -.10, p = .013$), emotional expression ($\beta = -.22, p < .001$), and mindfulness ($\beta = -.43, p < .001$) contributed significantly to the model. After including cognitive reappraisal, emotional expression, and mindfulness, the background variables time since loss, relationship with the deceased, and cause of death remained significant predictors of T1 prolonged grief symptoms.

The second model which included T2 prolonged grief symptoms as the dependent variable was also significant, $F(13, 321) = 50.93, p < .001$. In the first step, prolonged grief symptoms at T1 explained 65% of the variance in T2 prolonged grief symptoms, $\Delta F(1, 333) = 609.19, p < .001$. In the second step, relevant sociodemographic and loss-related characteristics explained an additional 2% of the variance in T2 prolonged grief symptoms, $\Delta F(9, 324) = 2.22, p < .020$. In the third step, cognitive reappraisal, emotional expression, and mindfulness explained an additional 1% in the variance of T2 prolonged grief symptoms, yielding a non-significant model test, $\Delta F(3, 321) = 2.09, p = .102$. Cognitive reappraisal ($\beta = -.03, p = .453$), emotional expression ($\beta = .05, p = .167$), and mindfulness ($\beta = -.07, p = .062$) did not contribute significantly to model. The background variables educational level and expectedness of the loss remained significant predictors of T2 prolonged grief symptoms after adding the emotion regulations strategies to the model.

A sensitivity analysis using summed scores of the DSM-5-TR items of the TGI-SR + for prolonged grief disorder and the summed scores of the ICD-11 items of the TGI-SR + for prolonged grief

Table 3. Hierarchical Regression Analyses of the Relationships between Emotion Regulation Strategies and Prolonged Grief Symptoms.

Prolonged grief	T1					T2				
	ΔF (df)	ΔR^2	β	B [95%CI]	p	ΔF (df)	ΔR^2	β	B [95%CI]	p
Step 1	-	-				609.19 (1)	.65			<.001
T1 symptoms								.74	0.75 [0.66; 0.83]	<.001
Step 2	6.85 (9)	.14			<.001	2.22 (9)	.02			.020
Education			.06	1.97 [-0.62; 4.56]	.136			.10	3.28 [1.20; 5.36]	.002
Kinship 1			-.22	-7.52 [-10.45; -4.59]	<.001			-.06	-2.00 [-4.43; 0.44]	.108
Kinship 2			-.04	-2.94 [-8.79; 2.90]	.323			.03	2.24 [-2.81; 7.29]	.384
Kinship 3			.04	1.80 [-2.49; 6.10]	.410			-.01	-0.46 [-3.92; 3.00]	.794
Kinship 4			-.04	-5.05 [-14.54; 4.43]	.296			-.02	-2.58 [-11.06; 5.90]	.549
Time since loss			-.11	-0.13 [-0.21; -0.04]	.005			.03	0.04 [-0.04; 0.11]	.315
Cause of death			.10	5.02 [0.82; 9.21]	.019			.03	1.52 [-1.97; 5.01]	.392
Expectedness 1			-.07	-2.22 [-5.17; 0.72]	.138			-.08	-2.68 [-5.00; -0.35]	.024
Expectedness 2			.02	0.71 [-2.97; 4.40]	.704			-.01	-0.25 [-3.21; 2.71]	.867
Step 3	61.57 (3)	.29			<.001	2.09 (3)	.01			.102
Cognitive reinterpretation			-.10	-0.26 [-0.46; -0.05]	.013			-.03	-0.06 [-0.23; 0.10]	.453
Emotional expression			-.22	-0.67 [-0.93; -0.42]	<.001			.05	0.15 [-0.07; 0.37]	.167
Mindfulness			-.43	-1.14 [-1.37; -0.91]	<.001			-.07	-0.20 [-0.40; 0.01]	.062

Note. The following variables were dummy-coded: Education = lower education (1) vs. higher education (0); Kinship 1 = parent (1) vs. partner (0); Kinship 2 = sibling (1) vs. partner (0); Kinship 3 = child (1) vs. partner (0); Kinship 4 = other person (1) vs. partner (0); Cause of death = violent (1) vs. nonviolent (0); and Expectedness 1 = expected (1) vs. unexpected (0); Expectedness 2 = both or none (1) vs. unexpected (0)

Table 4. Hierarchical Regression Analyses of the Relationships between Emotion Regulation Strategies and Depression Symptoms.

Depression	T1					T2				
	ΔF (df)	ΔR^2	β	B [95%CI]	p	ΔF (df)	ΔR^2	β	B [95%CI]	p
Step 1	-	-				450.97 (1)	.58			<.001
T1 symptoms								.66	0.62 [0.54; 0.71]	<.001
Step 2	2.09 (9)	.05			.030	2.07 (9)	.02			.031
Education			.05	0.48 [-0.34; 1.30]	.254			.07	0.65 [-0.02; 1.32]	.057
Kinship 1			-.13	-1.37 [-2.30; -0.45]	.004			-.07	-0.73 [-1.50; 0.05]	.067
Kinship 2			-.04	-0.96 [-2.81; 0.89]	.310			.03	0.67 [-0.92; 2.25]	.408
Kinship 3			.01	0.17 [-1.19; 1.53]	.803			-.02	-0.31 [-1.43; 0.81]	.584
Kinship 4			-.01	-0.37 [-3.37; 2.63]	.809			-.04	-1.42 [-3.92; 1.07]	.262
Time since loss			-.01	-0.01 [-0.03; 0.02]	.732			.04	0.01 [-0.01; 0.04]	.322
Cause of death			.04	0.58 [-0.75; 1.91]	.389			.05	0.78 [-0.35; 1.90]	.174
Expectedness 1			.02	0.21 [-0.73; 1.14]	.666			-.05	-0.50 [-1.26; 0.25]	.188
Expectedness 2			-.04	-0.53 [-1.70; 0.64]	.371			.03	0.45 [-0.53; 1.42]	.366
Step 3	74.52 (3)	.36			<.001	3.15 (3)	.01			.025
Cognitive reinterpretation			-.11	-0.08 [-0.15; -0.02]	.010			-.05	-0.04 [-0.09; 0.02]	.165
Emotional expression			-.13	-0.13 [-0.21; -0.04]	.003			-.04	-0.04 [-0.11; 0.03]	.293
Mindfulness			-.55	-0.45 [-0.52; -0.38]	<.001			-.11	-0.08 [-0.15; -0.01]	.020

Note. The following variables were dummy-coded: Education = lower education (1) vs. higher education (0); Kinship 1 = parent (1) vs. partner (0); Kinship 2 = sibling (1) vs. partner (0); Kinship 3 = child (1) vs. partner (0); Kinship 4 = other person (1) vs. partner (0); and Expectedness 1 = expected (1) vs. unexpected (0); Expectedness 2 = both or none (1) vs. unexpected (0)

disorder as dependent variables (instead of the sum score of the TGI-SR+), yielded nearly identical results. Significant effects remained significant and in the same direction, and are reported in Supplemental Tables 3 and 4.

The results of the regression analyses for depressive symptoms are shown in Table 4. The first model which included T1 depression symptoms as the dependent variable was significant, $F(12, 368) = 21.13$, $p < .001$. In the first step, relevant loss-related and sociodemographic characteristics explained 5% of the variance in T1 depression symptoms, $\Delta F(9, 371) = 2.09$, $p < .030$. In the second step, cognitive reappraisal, emotional expression, and mindfulness explained an additional 36% of the variance in T1 depression symptoms, $\Delta F(3, 368) = 74.52$, $p < .001$. All three factors contributed significantly to the model: cognitive reappraisal ($\beta = -.11$, $p = .010$), emotional expression ($\beta = -.13$, $p = .003$), and mindfulness ($\beta = -.55$, $p < .001$). After including these variables, only the control variable relationship with the deceased remained a significant predictor of T1 depression symptoms.

The second model which included T2 depression symptoms as the dependent variable was also significant, $F(13, 318) = 38.61$, $p < .001$. In the first step, depression symptoms at T1 explained 58% of the variance in T2 depression symptoms, $\Delta F(1, 330) = 450.97$, $p < .001$. In the second step, relevant sociodemographic and loss-related characteristics explained an additional 2% of the variance in T2 depression symptoms, $\Delta F(9, 321) = 2.07$, $p = .031$. In the third step, cognitive reappraisal, emotional expression, and mindfulness explained an additional 1% in the variance of T2 depression symptoms, $\Delta F(3, 318) = 3.15$, $p = .025$. Mindfulness ($\beta = -.11$, $p = .020$) was the only factor that contributed significantly to the model, while cognitive reappraisal ($\beta = -.05$, $p = .165$), and emotional expression ($\beta = -.04$, $p = .293$) did not. Moreover, no background variables remained significant predictors of T2 depression symptoms after adding the independent variables to the model.

Discussion

We sought to clarify the concurrent and longitudinal associations of cognitive reappraisal, emotional expression, and mindfulness with prolonged grief and depression symptoms among bereaved adults. Results showed negative concurrent and longitudinal zero-order correlations of all three adaptive emotion regulation strategies with prolonged grief and depression symptoms. In

multivariate regressions, controlling for relevant sociodemographic and loss-related variables, negative concurrent associations were found between all adaptive emotion regulation strategies and prolonged grief and depression symptoms. In stringent multivariate regressions, controlling for baseline symptoms and relevant sociodemographic and loss-related variables, only mindfulness predicted lower depression symptoms over time, whereas none of the emotion regulation strategies predicted prolonged grief symptoms.

Similar relationships emerged between cognitive reappraisal and emotional expression and post-loss psychopathology. Whilst concurrently and longitudinally related to both prolonged grief and depression symptoms, stringent multivariate analyses did not demonstrate that either emotion regulation strategy significantly predicted incremental symptom change over a six-month interval. This suggests that these emotion regulation strategies are not protective factors for (the persistence of) loss-related psychopathology. Generally, results align with meta-analyses on non-bereaved samples demonstrating small concurrent negative associations between these emotion regulation strategies and psychopathology symptoms (Aldao et al., 2010; Hu et al., 2014), as well as null-results on the longitudinal and causal effects of these strategies on psychopathology symptoms (Arditte & Joormann, 2011; Dawel et al., 2021; Ehring et al., 2010; Larsen et al., 2013).

Our findings regarding cognitive reappraisal suggest that this strategy may not be effective when dealing with a situation for which reframing is difficult or unrealistic. Bereavement is a major life stressor that is often accompanied by negative life changes and a variety of additional stressors (Eisma & Stroebe, 2021). In such taxing circumstances, cognitive reappraisal may not substantially improve negative emotions. Indeed, even when people are trained in cognitive reappraisal, they can have difficulty applying this strategy effectively in stressful situations as stress reduces one's ability to apply this strategy (Raio et al., 2013). However, cognitive restructuring, which includes applying cognitive techniques to change catastrophic misinterpretations of one's own grief reactions (e.g., yearning sadness) has been proven effective in reducing such misinterpretations, related loss-related avoidance and prolonged grief symptoms (Boelen, 2006; Boelen et al., 2007, 2011). This apparent contradiction requires further scientific scrutiny, for example by conducting small-scale experiments analyzing the effects of specific cognitive restructuring techniques on grief severity.

Results on emotional expression similarly suggest that expressing emotions is negatively related to psychopathology but does not help reduce emotional problems following bereavement. This appears at odds with the fact that exposure to avoided aspects of the loss is a proven effective therapy for reducing prolonged grief symptoms, both as a stand-alone treatment and as an add-on to treatment (Boelen et al., 2007; Bryant et al., 2014; Eisma et al., 2015). However, the expression of emotion is in and of itself not considered a working mechanism in such therapies. Rather, prolonged exposure to avoided aspects of the loss is thought to disconfirm catastrophic misinterpretations of grief reactions, which facilitates the cognitive processing of the loss, i.e., the integration of memories of the loss within existing autobiographical memory (Boelen et al., 2007). Therefore, emotional expression may not be critical to adjustment to loss. However, it is notable that emotional expression may relate differently to grief over time dependent on the type of expressed emotion. For example, Bonanno and Keltner (1997) found facial expressions of negative emotion increased grief intensity, whereas facial expressions of positive emotions lowered grief intensity. Additionally, the flexibility with which emotions can be modulated may be more important to psychological adaptation to bereavement than one's tendency to use particular emotion regulation strategies (Bonanno et al., 2004; Gupta & Bonanno, 2011). Since the adaptiveness of expressing one's emotions could be situation-dependent (e.g., expressing negative emotions may be helpful when around friends, but less helpful in a work setting), emotional flexibility rather than the tendency to express emotions may facilitate adjustment to loss.

Mindfulness appears more strongly negatively associated with loss-related psychopathology than cognitive reappraisal and emotional expression. Importantly, mindfulness also longitudinally predicted (a small amount of) incremental symptom change in depression symptoms, albeit not in prolonged grief symptoms. This suggests that a disposition to be mindful may be a protective factor for

post-loss depressive symptoms. Findings align with prior cross-sectional surveys demonstrating negative associations between mindfulness and loss-related psychopathology (Tang et al., 2019; Huang, in press), as well as with a meta-analysis showing a negative association between mindfulness with depression symptoms in non-bereaved samples (Carpenter et al., 2019). Results also correspond with trials examining the effects of mindfulness-based therapies. Notably, O'Connor et al. (2014) found that mindfulness-based therapy reduced depression symptoms, but not prolonged grief symptoms, relative to a waitlist. A larger randomized controlled trial did not convincingly demonstrate that mindfulness-based therapy reduced prolonged grief symptoms (Knowles et al., 2021). This may imply that increasing mindfulness is not an effective way to reduce prolonged grief symptoms. Possibly, mindfulness may work in a way that is effective in reducing negative mood, but not severe and persistent grief reactions. It could be that non-judgmental awareness of one's thoughts and emotions could help increase positive thought and emotions (Garland et al., 2015) which would directly counteract negative mood and depressive symptoms, but is less helpful in the processing of a major negative life-event such as bereavement. Cognitive behavioral techniques focused on cognitive processing of the loss, including developing a coherent narrative of the story of the loss and direct exposure to avoided aspects of the loss, appear more effective in reducing prolonged grief symptoms (for a review: Doering & Eisma, 2016). Nevertheless, the effects of mindfulness on depressive symptoms suggest it is worthwhile to further investigate how mindfulness training can be helpful to distressed bereaved people.

Some limitations warrant mention. First, there were more higher-educated women in the present sample than in the general bereaved population. Whilst common to grief research on emotion regulation strategies (Eisma & Stroebe, 2021), replication in a sample with more men and lower education levels is warranted. Second, younger people who had experienced an unnatural loss were somewhat more likely to drop out. Possibly, results may have been different if these people would have continued participation. Third, we used a six-month interval for our longitudinal survey. Another time-interval may have yielded different outcomes. For example, cognitive reappraisal and emotional expression may temporarily reduce negative emotions and therefore the tendency to engage in these strategies could solely predict short-term outcomes. It may be worthwhile to examine whether the present results would hold when measuring constructs over shorter time-periods, for example, when using daily reports of emotion regulation and mood (e.g., Moberly & Watkins, 2008). Another interesting avenue for future research is to examine, using ecological momentary assessment, if the temporary emotional response to stressors encountered by bereaved people in everyday life is affected by the use of adaptive emotion regulation strategies. Encouragingly, recent work supports the feasibility of daily diaries in bereaved adults, which can offer unique insights into the role of emotion regulation after loss (Eisma et al., 2022b). Fourth, the specific nature of our measures may have influenced outcomes. For example, we assessed the disposition to express emotions rather than what type of emotions are expressed in which circumstances, which may be more important in adaptation to loss. Lastly, our study could not clarify causal relationships between the variables under investigation. Experiments examining the effects of inducing mindfulness on negative mood (e.g., Gibb et al., 2022), may help elucidate whether mindfulness reduces emotional problems in bereaved people.

Despite these limitations, the present study has uniquely shed light on the longitudinal associations between putative adaptive emotion regulation strategies and prolonged grief and depression symptoms. Results suggest that cognitive reappraisal and emotional expression may not be protective factors of loss-related psychopathology, whereas mindfulness may be a potential protective factor for depressive symptoms, but likely not for prolonged grief symptoms. Future longitudinal, experimental, and clinical trial research may further clarify the value of mindfulness in reducing emotional problems after bereavement.

Data availability statement

Data, syntax and output is available on DATAVERSE NL:<https://doi.org/10.34894/ZR6QDP>.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the Dutch Research Council (NWO) under Grant number 016.veni195.113.

ORCID

Maarten C. Eisma  <http://orcid.org/0000-0002-6109-2274>

Maya J. Schroevers  <http://orcid.org/0000-0001-8518-9153>

References

- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review, 30*(2), 217–237. <https://doi.org/10.1016/j.cpr.2009.11.004>
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>.
- Arditte, K. A., & Joormann, J. (2011). Emotion regulation in depression: Reflection predicts recovery from a major depressive episode. *Cognitive Therapy and Research, 35*(6), 536–543. <https://doi.org/10.1007/s10608-011-9389-4>
- Boelen, P. A. (2006). Cognitive-behavioral therapy for complicated grief: Theoretical underpinnings and case descriptions. *Journal of Loss and Trauma, 11*(1), 1–30. <https://doi.org/10.1080/15325020500193655>
- Boelen, P. A., De Keijser, J., Van Den Hout, M. A., & Bout, J. (2011). Factors associated with outcome of cognitive-behavioural therapy for complicated grief: A preliminary study. *Clinical Psychology and Psychotherapy, 18*(4), 284–291.
- Boelen, P. A., de Keijser, J., van den Hout, M. A., & van den Bout, J. (2007). Treatment of complicated grief: A comparison between cognitive-behavioral therapy and supportive counseling. *Journal of Consulting and Clinical Psychology, 75* (2), 277–284. <https://doi.org/10.1037/0022-006X.75.2.277>
- Bonanno, G. A., & Keltner, D. (1997). Facial expressions of emotion and the course of conjugal bereavement. *Journal of Abnormal Psychology, 106*(1), 126–137. <https://doi.org/10.1037/0021-843X.106.1.126>
- Bonanno, G. A., Papa, A., Lalande, K., Westphal, M., & Coifman, K. (2004). The importance of being flexible. *Psychological Science, 15*(7), 482–487. <https://doi.org/10.1111/j.0956-7976.2004.00705.x>
- Brewer, S. K., Zahniser, E., & Conley, C. S. (2016). Longitudinal impacts of emotion regulation on emerging adults: Variable- and person-centered approaches. *Journal of Applied Developmental Psychology, 47*, 1–12. <https://doi.org/10.1016/j.appdev.2016.09.002>
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822–848. <https://doi.org/10.1037/0022-3514.84.4.822>
- Bryant, R. A., Kenny, L., Joscelyne, A., Rawson, N., Maccallum, F., Cahill, C., Hopwood, S., Aderka, I., & Nickerson, A. (2014). Treating prolonged grief disorder. *JAMA Psychiatry, 71*(12), 1332. <https://doi.org/10.1001/jamapsychiatry.2014.1600>
- Carpenter, J. K., Conroy, K., Gomez, A. F., Curren, L. C., & Hofmann, S. G. (2019). The relationship between trait mindfulness and affective symptoms: A meta-analysis of the five facet mindfulness questionnaire (FFMQ). *Clinical Psychology Review, 74*, 101785. <https://doi.org/10.1016/j.cpr.2019.101785>
- Chatterjee, S., & Hadi, A. S. (2006). *Regression analysis by example. Fourth edition*. Hoboken: John Wiley & Sons.
- Chen, M. A., & Fagundes, C. P. (2022). Childhood maltreatment, emotion regulation strategies and depressive symptoms during spousal bereavement. *Child Abuse & Neglect, 128*, 105618. <https://doi.org/10.1016/j.chiabu.2022.105618>
- Chukwuorji, J. B. C., Ifeagwazi, C. M., & Eze, J. E. (2018). Prolonged grief disorder symptoms in bereaved internally displaced TIV persons in Nigeria: Associations with rumination, rebirth concerns and gender. *Mental Health, Religion & Culture, 21*(6), 549–563. <https://doi.org/10.1080/13674676.2018.1505838>
- Cutuli, D. (2014). Cognitive reappraisal and expressive suppression strategies role in the emotion regulation: An overview on their modulatory effects and neural correlates. *Frontiers in Systems Neuroscience, 175*(8). <https://doi.org/10.3389/fnsys.2014.00175>
- Dawel, A., Shou, Y., Gulliver, A., Cherbuin, N., Banfield, M., Murray, K., Calear, A. L., Morse, A. R., Farrer, L. M., & Smithson, M. (2021). Cause or symptom? A longitudinal test of bidirectional relationships between emotion regulation strategies and mental health symptoms. *Emotion, 21*(7), 1511–1521. <https://doi.org/10.1037/emo0001018>
- Dodd, C. G., Hill, R. M., Alvis, L. M., Rooney, E. E., Layne, C. M., Logsdon, T., Sandler, I. N., & Kaplow, J. B. (2020). Initial validation and measurement invariance of the active inhibition scale among traumatized and grieving youth. *Journal of Traumatic Stress, 33*(5), 843–849. <https://doi.org/10.1002/jts.22529>

- 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>
- Ehring, T., Tuschen-Caffier, B., Schnulle, J., Fischer, S., & Gross, J. J. (2010). Emotion regulation and vulnerability to depression: Spontaneous versus instructed use of emotion suppression and reappraisal. *Emotion*, 10(4), 563–572. <https://doi.org/10.1037/a0019010>
- Eisma, M. C., Boelen, P. A., van den Bout, J., Stroebe, W., Schut, H. A. W., Lancee, J., & Stroebe, M. S. (2015). Internet-based exposure and behavioral activation for complicated grief and rumination: A randomized controlled trial. *Behavior Therapy*, 46(6), 729–748. <https://doi.org/10.1016/j.beth.2015.05.007>
- Eisma, M. C., de Lang, T. A., & Stroebe, M. S. (2022a). Restoration-oriented stressors of bereavement. *Anxiety, Stress, & Coping*, 35(3), 339–353. <https://doi.org/10.1080/10615806.2021.1957849>
- Eisma, M. C., Janshen, A., & Lenferink, L. I. M. (2022b). Content overlap analyses of ICD-11 and DSM-5 prolonged grief disorder and prior criteria sets. *European Journal of Psychotraumatology*, 13(1), 2011691. <https://doi.org/10.1080/20008198.2021.2011691>
- Eisma, M. C., & Stroebe, M. S. (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>
- Eisma, M. C., Stroebe, M. S., Schut, H. A., Stroebe, W., Boelen, P. A., & van den Bout, J. (2013). Avoidance processes mediate the relationship between rumination and symptoms of complicated grief and depression following loss. *Journal of Abnormal Psychology*, 122(4), 961–970. <https://doi.org/10.1037/a0034051>
- Ernst, A. F., & Albers, C. J. (2017). Regression assumptions in clinical psychology research practice—a systematic review of common misconceptions. *PeerJ*, 5, e3323. <https://doi.org/10.7717/peerj.3323>
- Farb, N. A. S., Anderson, A. K., Irving, J. A., & Segal, Z. V. (2014). Mindfulness interventions and emotion regulation. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 548–567). The Guilford Press.
- Garland, E. L., Farb, N. A., Goldin, R., Fredrickson, P., & L. B. (2015). Mindfulness broadens awareness and builds eudaimonic meaning: A process model of mindful positive emotion regulation. *Psychological Inquiry*, 26(4), 293–314. <https://doi.org/10.1080/1047840X.2015.1064294>
- Gibb, A., Wilson, J. M., Ford, C., & Shook, N. J. (2022). Does mindfulness reduce negative interpretation bias? *Cognition and Emotion*, 36(2), 284–299. <https://doi.org/10.1080/02699931.2021.2008322>
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2(3), 271–299. <https://doi.org/10.1037/1089-2680.2.3.271>
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348–362. <https://doi.org/10.1037/0022-3514.85.2.348>
- Gupta, S., & Bonanno, G. A. (2011). Complicated grief and deficits in emotional expressive flexibility. *Journal of Abnormal Psychology*, 120(3), 635–643. <https://doi.org/10.1037/a0023541>
- Hu, T., Zhang, D., Wang, J., Mistry, R., Ran, G., & Wang, X. (2014). Relation between emotion regulation and mental health: A meta-analysis review. *Psychological Reports*, 114(2), 341–362. <https://doi.org/10.2466/03.20.PR0.114k22w4>
- Huang, F.-Y. (2022). How emotion regulation mediates the relationship between dispositional mindfulness, depression and complicated grief among the bereaved population. *Mindfulness*, 13(8), 2092–2100. <https://doi.org/10.1007/s12671-022-01944-1>
- Johannsen, M., Damholdt, M. F., Zachariae, R., Lundorff, M., Farver-Vestergaard, I., & O'Connor, M. (2019). Psychological interventions for grief in adults: A systematic review and meta-analysis of randomized controlled trials. *Journal of Affective Disorders*, 253, 69–86. <https://doi.org/10.1016/j.jad.2019.04.065>
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, 10(2), 144–156. <https://doi.org/10.1093/clipsy.bpg016>
- Kaplow, J. B., Shapiro, D. N., Wardecker, B. M., Howell, K. H., Abelson, J. L., Worthman, C. M., & Prossin, A. R. (2013). Psychological and environmental correlates of HPA axis functioning in parentally bereaved children: Preliminary findings. *Journal of Traumatic Stress*, 26(2), 233–240. <https://doi.org/10.1002/jts.21788>
- Knowles, L. M., Jovel, K. S., Mayer, C. M., Bottrill, K. C., Kaszniak, A. W., Sbarra, D. A., Lawrence, E. E., & O'Connor, M.-F. (2021). A controlled trial of two mind–body interventions for grief in widows and widowers. *Journal of Consulting and Clinical Psychology*, 89(7), 640–654. <https://doi.org/10.1037/ccp0000653>
- Komischke-Konnerup, K. B., Zachariae, R., Johannsen, M., Nielsen, L. D., & O'Connor, M. (2021). Co-occurrence of prolonged grief symptoms and symptoms of depression, anxiety, and posttraumatic stress in bereaved adults: A systematic review and meta-analysis. *Journal of Affective Disorders Reports*, 4, 100140. <https://doi.org/10.1016/j.jadr.2021.100140>
- Koole, S. L. (2004). Volitional shielding of the self: Effects of action orientation and external demands on implicit self-evaluation. *Social Cognition*, 22(1), 100–125. <https://doi.org/10.1521/soco.22.1.100.30985>
- Lako, I. M., Wigman, J. T. W., Klaassen, R. M. C., Slooff, C. J., Taxis, K., & Bartels-Velthuis, A. A. (2014). Psychometric properties of the self-report version of the Quick Inventory of Depressive Symptoms (QIDS-SR16) questionnaire in patients with schizophrenia. *BMC Psychiatry*, 14. <https://doi.org/10.1186/s12888-014-0247-2>

- Larsen, J. K., Vermulst, A. A., Geenen, R., van Middendorp, H., English, T., Gross, J. J., Ha, T., Evers, C., & Engels, R. C. (2013). Emotion regulation in adolescence. *The Journal of Early Adolescence*, 33(2), 184–200. <https://doi.org/10.1177/0272431611432712>
- Lenferink, L. I. M., Eisma, M. C., Smid, G. E., de Keijser, J., & Boelen, P. A. (2022). Valid measurement of DSM-5 persistent complex bereavement disorder and DSM-5-TR and ICD-11 prolonged grief disorder: The traumatic grief inventory-self report plus (TGI-SR+). *Comprehensive Psychiatry*, 112, 152281. <https://doi.org/10.1016/j.comppsy.2021.152281>
- Matheson, K., & Anisman, H. (2003). Systems of coping associated with dysphoria, anxiety and depressive illness: A multi-variate profile perspective. *Stress*, 6(3), 223–234. <https://doi.org/10.1080/10253890310001594487>
- Moberly, N. J., & Watkins, E. R. (2008). Ruminative self-focus and negative affect: An experience sampling study. *Journal of Abnormal Psychology*, 117(2), 314–323. <https://doi.org/10.1037/0021-843X.117.2.314>
- Naragon-Gainey, K., McMahon, T., & Chacko, T. (2017). The structure of common emotion regulation strategies: A meta-analytic examination. *Psychological Bulletin*, 143(4), 384–427. <https://doi.org/10.1037/bul0000093>
- O'Connor, M., Piet, J., & Hougaard, E. (2014). The effects of mindfulness-based cognitive therapy on depressive symptoms in elderly bereaved people with loss-related distress: A controlled pilot study. *Mindfulness*, 5(4), 400–409. <https://doi.org/10.1007/s12671-013-0194-x>
- Quaglia, J. T., Brown, K. W., Lindsay, E. K., Creswell, J. D., & Goodman, R. J. (2015). From conceptualization to operationalization of mindfulness. In K. W. Brown, J. D. Creswell, & R. M. Ryan (Eds.), *Handbook of mindfulness: Theory, research, and practice* (pp. 151–170). The Guilford Press.
- Raio, C. M., Oederu, T. A., Palazzolo, L., Shurick, A. A., & Phelps, E. A. (2013). Cognitive emotion regulation fails the stress test. *Proceedings of the National Academy of Sciences*, 110(37), 15139–15144. <https://doi.org/10.1073/pnas.1305706110>
- Rush, A. J., Trivedi, M. H., Ibrahim, H. M., Carmody, T. J., Arnow, B., Klein, D. N., Markowitz, J. C., Ninan, P. T., Kornstein, S., Manber, R., Thase, M. E., Kocsis, J. H., & Keller, M. B. (2003). The 16-item Quick Inventory of Depressive Symptomatology (QIDS), clinician rating (QIDS-C), and self-report (QIDS-SR): A psychometric evaluation in patients with chronic major depression. *Biological Psychiatry*, 54(5), 573–583. [https://doi.org/10.1016/S0006-3223\(02\)01866-8](https://doi.org/10.1016/S0006-3223(02)01866-8)
- Schroevers, M., Nykliček, I., & Topman, R. (2008). Validatie van de Nederlandstalige versie van de Mindful Attention Awareness Scale (MAAS). *Gedragstherapie*, 41(3), 225–240.
- Shear, M. K., Reynolds, C. F., Simon, N. M., Zisook, S., Wang, Y., Mauro, C., Duan, N., Lebowitz, B., & Skritskaya, N. (2016). Optimizing treatment of complicated grief. *JAMA Psychiatry*, 73(7), 685–694. <https://doi.org/10.1001/jamapsychiatry.2016.0892>
- Tang, S., Eisma, M. C., Li, J., & Chow, A. Y. M. (2019). Psychometric evaluation of the Chinese version of the Utrecht grief rumination scale. *Clinical Psychology & Psychotherapy*, 26(2), 262–272. <https://doi.org/10.1002/cpp.2348>
- Thieleman, K., Cacciatore, J., & Hill, P. W. (2014). Traumatic bereavement and mindfulness: A preliminary study of mental health outcomes using the attend model. *Clinical Social Work Journal*, 42(3), 260–268. <https://doi.org/10.1007/s10615-014-0491-4>
- World Health Organization. (2018). *International statistical classification of diseases and related health problems* (11th ed.). <https://icd.who.int/>.
- Zisook, S., Iglewicz, A., Avanzino, J., Maglione, J., Glorioso, D., Zetumer, S., Seay, K., Vahia, I., Young, I., Lebowitz, B., Pies, R., Reynolds, C., Simon, N., & Shear, M. K. (2014). Bereavement: Course, consequences, and care. *Current Psychiatry Reports*, 16(10), 482. <https://doi.org/10.1007/s11920-014-0482-8>