DYADIC DAILY EXAMINATION OF REPETITIVE THOUGHT AND WELL-BEING IN BEREAVED PARENTS

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ABSTRACT

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Keywords: repetitive thought, well-being, child loss, grief, dyadic diary

We aim to investigate the bidirectional longitudinal associations of repetitive thought (i.e., rumination, yearning) with individual (i.e, grief levels, depressive symptoms) and relational well-being (relationship satisfaction, closeness, and trust) in bereaved parents. The Response Styles Theory posits a reciprocal link between repetitive thought and well-being. However, past studies provided mixed evidence for individual well-being, and no study has yet examined this claim for relational well-being. Furthermore, the potential reciprocal effects between bereaved parents' repetitive thought and well-being have not been tested with a dyadic lens. In total, 483 Turkish bereaved parents (228 couples, 27 individuals) participated in a seven-day dyadic diary. We conducted Random Intercept Cross-Lagged Panel Model analyses to disentangle within- and between-person effects. The results yielded limited evidence for the longitudinal within-person effects: Although bereaved parents' higher-than-usual rumination predicted lower relational well-being in the partner the next day, no longitudinal link appeared for individual well-being. At the between-person level, bereaved parents' repetitive thought was related to their and their partner's individual but not relational well-being. Our findings revealed that bereaved parents' interdependence in repetitive thought and well-being is more evident for individual well-being at the between-person level, but daily rumination is a risk factor for the partner's relational well-being longitudinally.

ÖZET

YASLI EBEVEYNLERDE TEKRARLAYACI DÜŞÜNCELER VE ESENLIĞIN EŞLI GÜNLÜK ILE İNCELENMESI

MUSTAFA ANIL TOPAL

PSİKOLOJİ YÜKSEK LİSANS TEZİ, ARALIK 2023

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Anahtar Kelimeler: tekrarlayıcı düşünceler, esenlik, çocuk kaybı, yas, eşli günlük

Bu çalışmada, hamilelik ve doğum sırasında veya sonrasında çocuklarını kaybeden ebeveynlerde tekrarlayıcı düşüncelerin (örn. ruminasyon, hasret çekme), bireysel (yas düzeyleri ve depresif belirtiler) ve ilişkisel esenlik (ilişki doyumu, yakınlık ve güven) ile çift yönlü boylamsal ilişkilerini araştırmayı amaçladık. Tepki Stilleri Kuramı, tekrarlayan düşünceler ile esenlik arasında çift yönlü bir ilişki olduğunu öne sürmektedir. Bunula birlikte, geçmiş çalışmalar bireysel esenlik için çelişkili kanıtlar sunmuştur ve henüz hiçbir çalışma bu iddiayı ilişkisel esenlik için incelememiştir. Ayrıca, çocuklarını kaybeden ebeveynlerin tekrarlayan düşünceleri ile esenliği arasındaki potansiyel karşılıklı etkiler eşli bir mercekle test edilmemiştir. Toplamda daha önce çocuk kaybı yaşamış 483 Türk ebeveyn (228 çift, 27 birey) yedi günlük bir eşli günlük çalışmasına katılmıştır. Kişi içi ve kişiler arası etkileri ayrıştırmak için Tesadüfi Katsayı Gecikmeli Panel Desen analizleri gerçekleştirilmiştir. Sonuçlar, boylamsal kişi içi etkiler için sınırlı kanıt sağlamıştır: Ebeveynlerin normalden daha yüksek ruminasyonu ertesi gün eşlerinde daha düşük ilişkisel esenlik öngörse de, bireysel esenlik için boylamsal bir ilişki ortaya çıkmamıştır. Kişiler arası düzeyde, ebeveynlerin tekrarlayan düşünceleri kendilerinin ve eşlerinin bireysel esenliğiyle bağlantılıyken ilişkisel esenliğiyle bağlantılı bulunmuştur. Bulgularımız, çocuk kaybı yaşamış ebeveynlerin tekrarlayan düşünceleri ve esenliği arasındaki karşılıklı bağımlılığının, kişiler arası düzeyde bireysel esenlik için daha belirgin olduğunu, ancak günlük ruminasyonun eşin ilişkisel esenliği için boylamsal olarak bir risk faktörü olduğunu ortaya koymuştur.

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Bugün oturdum ölümü düşündüm.
Yirmi yaşında ve hayat bu kadar güzelken.
Ahmet Erhan

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1.   INTRODUCTION

The death of a child is a highly distressing life event, regardless of what stage of the child's lifetime it occurs, during pregnancy, birth, or afterward (Campbell-Jackson and Horsch, 2014; Paykel et al. 1971). Following a child's loss, during or after pregnancy, a substantial minority of bereaved parents experience high levels of prolonged grief (Goldstein et al. 2018; Pohlkamp et al. 2018) and depressive symptoms (Rogers et al. 2008; Lok and Neugebauer, 2007). Moreover, child loss affects the relationship between bereaved parents. Bereaved parents are at a higher risk for marital distress (Albuquerque et al. 2016; Rogers et al. 2008), experience low relationship satisfaction (Murphy et al. 2003), and increased odds of divorce (Gold et al. 2010; Lyngstad, 2013) compared to non-bereaved parents.

What could explain the detrimental effects of child loss on the bereaved couples' individual and relational well-being? A critical factor that was shown to explain the negative impact of child loss on well-being is repetitive thought (Maciejewski et al. 2007), defined as a thinking process that is attentive, recurrent, or frequent about oneself and life (Segerstrom et al. 2003). Prior research has established that repetitive thought is positively related to prolonged grief, depressive, and anxiety symptoms concurrently and longitudinally (Boelen et al. 2016; Eisma and Stroebe, 2017; Kaplan et al. 2018). Nevertheless, the literature on repetitive thought and well-being requires improvements in three respects: a) there is limited knowledge on their bidirectionality, b) we do not know whether repetitive thought affects bereaved parents' relationships, and c) repetitive thought's harmful impact on bereaved parents has not been studied with couples. In this study, we will investigate the reciprocal associations of two types of repetitive thought (i.e., rumination and yearning) with individual (i.e., grief and depressive symptoms) and relational (i.e., relationship satisfaction, closeness, and trust) well-being in couples who lost their child during pregnancy, labor, or afterward.

1.1 Definition: Rumination and Yearning

Rumination is one of the most studied types of repetitive thought (Nolen-Hoeksema et al. 2008). In the context of bereavement, rumination can be defined as recurrent and repetitive thought on the causes and consequences of the loss (Eisma and Stroebe, 2017). Counterfactual thoughts about the past and cognitions on the meaning and unfairness of the loss are well-known ruminative responses (Eisma et al. 2014; Eisma and Stroebe, 2017). Yearning, another common form of repetitive thought following bereavement (Maciejewski et al. 2007), is characterized by a repetitive, intense, and unbidden desire to reunite with the deceased (O'Connor and Sussman, 2014). For example, it includes the thought of how good it would be to be with the deceased (Eisma et al. 2020b).

Despite their similarities, yearning and rumination in the context of bereavement differ in some respects. First, rumination consists of past-oriented and predominantly verbal thoughts about the causes and consequences of a loved one's death (Eisma and Stroebe, 2017). In contrast, yearning involves present and future-oriented thoughts and desires and generally includes vivid imagery and reveries (Kaplan et al. 2018). Although evidence has been accumulating on yearning and health outcomes (Eisma et al. 2020b; O'Connor and Sussman, 2014), studies on this topic are still relatively scarce (Stroebe et al. 2010).

1.2 Repetitive Thought and Individual and Relational Well-being

According to the Response Styles Theory (RST; Nolen-Hoeksema et al. 2008), rumination exacerbates and prolongs distress by (a) increasing accessibility of negative thoughts and memories, (b) inhibiting effective problem solving, (c) reducing instrumental behaviors, and (d) eroding social support. Previous studies have supported the tenets of RST in both non-bereaved and bereaved samples and confirmed that rumination predicts lower individual well-being, including heightened levels of prolonged grief, depression, anxiety, and post-traumatic stress symptoms (e.g., Eisma and Stroebe, 2021; Eisma et al. 2014, 2020a; McLaughlin and Nolen-Hoeksema, 2011). Yearning is similarly associated with lower individual well-being (e.g., Eisma et al. 2020b; Maccallum et al. 2017).

People who frequently (vs. less often) ruminate also show more dysfunctional interpersonal behaviors and tendencies, such as dependency, clinginess, aggressiveness,

and excessive reassurance-seeking (Joiner, 2000; Nolen-Hoeksema et al. 2000, 2008). Thus, not surprisingly, they are likely to elicit negative perceptions and evaluations from others (Nolen-Hoeksema et al. 2008). For example, Nolen-Hoeksema and Davis (1999) found that, compared to non-ruminators, ruminators seek more support after losing a loved one and benefit more from getting it but perceive themselves as lacking support. Accordingly, both ruminators and their partners were shown to report low levels of relational well-being and high levels of marital tension and conflict (Caldwell et al. 2019; Pearson et al. 2010).

There is a dearth of research investigating the impact of yearning on relationships. Indirect evidence suggests that people's intense yearning could evoke negative emotions in others and prompt them to distance themselves socially (Eisma, 2018). Indeed, in an investigation of grief reactions following the death of an infant, Gottlieb and colleagues (1996) found a negative association between yearning and marital intimacy. In line with these findings, we expect rumination and yearning to be negatively associated with bereaved parents' individual and relational well-being.

The interdependence between the bereaved parents is particularly salient after losing a child when partners experience the same loss and thus share a common fate (Albuquerque et al. 2016). Bereaved mothers' and fathers' emotions, thoughts, and behaviors profoundly affect each other (Stroebe et al. 2013). For instance, bereaved parents' grief level and coping strategies after the loss predict their partners' grief level and depressive symptoms (Buyukcan-Tetik et al. 2022; Wijngaards-de Meij et al. 2008). Thus, we expect one bereaved parent's individual and relational well-being to be predicted by the other partner's repetitive thought.

1.3 Is It a Unidirectional Link?

Research guided by the RST suggests a vicious cycle between rumination and lower individual and relational well-being (Lyubomirsky and Tkach, 2003; Nolen-Hoeksema et al. 2008). For example, depressive mood may elicit rumination and rumination can decrease individual well-being by e.g., interfering with problem-solving processes. Nevertheless, although some studies support the theorized mutual effect between rumination and individual well-being (Blanke et al. 2021; Brans et al. 2013), others do not (Eisma et al. 2022; Pearson et al. 2011). For example, Eisma and colleagues (2022) found a unidirectional longitudinal effect from changes in post-loss well-being (symptoms of prolonged grief disorder, depression, and post-traumatic stress disorder) to changes in rumination, but not vice versa. Although

there may be several potential explanations for these mixed results, such as varying well-being indicators and sample characteristics, the debate on the direction of the association between individual well-being and repetitive thought continues.

Regarding relational well-being, the possible reciprocal association with repetitive thought appears not to have been examined yet. However, there is some evidence for an effect of relational well-being on repetitive thought (e.g., Lang and Gottlieb, 1993; Lang et al. 1996; Nolen-Hoeksema et al. 1994). For example, Nolen-Hoeksema and colleagues (1994) found that low experienced social support and exposure to additional stressors (e.g., marital problems) gave rise to more rumination in bereaved adults. Within the present study we will therefore test the bidirectional temporal associations of repetitive thought with individual and relational well-being.

Moving from the discussion of individualistic and collectivistic cultures' influence on social media usage, the concept of high relational mobility in certain contexts sheds light on the dynamics of relationship maintenance and its impact on individuals' lives. In contexts with high relational mobility, both partners are more likely to act based on their preferences. This creates a continuous risk of relationship loss as both parties strive to remain in desirable relationships and terminate unsatisfactory ones (Kito et al. 2017). Consequently, behaviors aimed at relationship maintenance are more prevalent in high-relational mobility countries compared to low-relational mobility countries. Relational mobility also impacts various domains of individuals' lives, such as support-seeking, trust, and levels of self-disclosure (Kito et al. 2017).

1.4 Between - and Within - Person Levels

The associations between repetitive thought and individual/relational well-being can occur at two levels. First, people who think repetitively more often (e.g., ruminators) may have a lower individual/relational well-being on average than those who think repetitively less often (i.e., between-person level). Second, daily fluctuations in repetitive thought and well-being may be correlated within the same person (i.e., within-person level). The associations between the variables at these two levels do not always correspond regarding magnitude, significance, or direction (Curran and Bauer, 2011). Because generalizing the findings from one level to the other may lead to wrong conclusions and interpretations and thus provide misleading information to intervention programs (Hamaker et al. 2015), we will consider associations at both levels in this study.

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1.5 The Present Study

In this research, we aim to extend the literature on the association between repetitive thought and well-being in parents bereaved of a child by a) testing the bidirectional associations), b) focusing on two types of repetitive thought (i.e., rumination and yearning), c) including both individual and relational well-being, d) examining the dyadic effects between partners, and e) considering effects at both between-person and within-person levels. The summary of our research questions is presented in Table 1.1. We pre-registered our research questions (***https://osf.io/tfzmu***), but extended our paper to individual well-being after relational well-being questions were preregistered to present a more comprehensive picture of the associations between repetitive thought and well-being.

Table 1.1 Summary of Research Questions

	Individual Well-being		Relational Well-being	
	Within-person level	**Between-person level**	**Within-person level**	**Between-person level**
Actor effect (Intrapersonal)	Are deviations from usual repetitive thought levels predictors of grief/depressive symptoms on the next day, and vice versa?	Do individuals with higher (vs. lower) levels of repetitive thought have lower grief/depressive symptoms on average?	Are deviations from usual repetitive thought levels predictors of relational well-being on the next day, and vice versa?	Do individuals with higher (vs. lower) levels of repetitive thought have lower relational well-being on average?
Partner effect (Dyadic)	Are deviations from usual repetitive thought levels predictors of partner's grief/depressive symptoms on the next day, and vice versa?	Do partners of individuals with higher (vs. lower) levels of repetitive thought have lower grief/depressive symptoms on average?	Are deviations from usual repetitive thought levels predictors of partner's relational well-being on the next day, and vice versa?	Do partners of individuals with higher (vs. lower) levels of repetitive thought have lower relational well-being on average?

2. METHOD

2.1 Procedure

The data were collected from bereaved couples between August 2020 and December 2021 as a part of a larger project (Buyukcan-Tetik et al. 2023). We recruited participants via several methods, including social media posts and research assistants' social networks. The inclusion criteria were experiencing a child loss during the pregnancy, labor, or afterward, and being married to, and residing with, the other parent. In cases of multiple child losses, participants responded for their most recent loss. All participants provided online informed consent before they filled in the surveys, and ethics approval was granted by the University the first and second authors were affiliated with.

Participants filled in seven daily surveys after an average of 8.18 days ($SD = 3.85$) following a cross-sectional survey. They accessed the daily surveys between 7 pm and midnight and completed an average of 5.80 of the seven daily surveys. Each participant received a shopping voucher for up to 100 Turkish Liras (USD 13.72 as of August 2020), depending on their survey completion rates. Five participants were provided with contact information for a psychological counseling center at a university upon request.

2.2 Participants

After excluding some participants during the data cleaning (e.g., inconsistent responses across partners, wrong couple codes; see Table A1), our final sample consisted of 228 bereaved couples and 27 individual participants (N = 483; representing 255 family). Most families experienced pregnancy loss (n = 159), and 71 families

lost their child during labor or afterward (no information for the rest). Sample characteristics are presented in Table 2.1 (for multigroup sample characteristics, see Table A2).

Table 2.1 Sample Characteristics (N =483; n (women) =249, n (men) =234)

Variable	M	SD	Range
Age (W)	40.43	10.48	20-74
Age (M)	44.48	11.05	25-87
Marriage duration (years)	16.63	11.36	.67-56
Number of deceased children (W)	1.49	0.97	1-8
Number of deceased children (M)	1.45	0.91	1-6
Number of living children (W)	1.48	1.20	0-10
Number of living children (M)	1.45	1.24	0-10
Time since loss (years)	10.77	10.01	.08-50
Age of the child lost during/after labor (years)	3.29	6.58	0-25
Gestational period for pregnancy loss (months)	3.28	1.69	.75-9
Education (W)	4.44	1.50	1-7
Education (M)	4.53	1.38	2-7
Socioeconomic status (W)	5.45	1.87	1-10
Socioeconomic status (M)	5.43	1.74	1-9

Note. W = Women, M = Men. The number of deceased children includes child loss during pregnancy, labor, or afterward. Participants with several losses responded to the psychological assessments based on their most recent loss. Subjective socioeconomic status was measured using a 10-step ladder with increasing levels (Adler & Stewart, 2007). The education degrees were presented in increasing order: 1 = no education, but literate, 2 = primary school, 3 = secondary school, 4 = high school, 5 = two-year community college, 6 = four-year university, 7 = master's/Ph.D. Thus, the mean levels on the table show an average education level of high school degree in our sample.

2.3 Measures

We used 5-point Likert scales (1 = *strongly disagree* to 5 = *strongly agree*) for all main variables and computed the averages across items.

2.3.1 Repetitive thought

Rumination was assessed using two items adapted from Eisma et al. (2014): "I thought about the unfairness of my loss today" and "I thought about how the loss I experienced could have been prevented today." Yearning was measured through two items: "I felt myself longing for my child today" and "I imagined today what it would be like if my child would still be alive." They were adapted from Eisma et al. (2020b). The yearning items stemmed from the theoretical notions of O'Connor and Sussman (2014). Internal reliability estimates were acceptable to good for rumination (α_{women}=.772; α_{men}=.837) and yearning (α_{women} = .860; α_{men} = .874).

2.3.2 Individual well-being

Following prior work on the association between repetitive thought and individual well-being (Eisma et al. 2022), we used grief levels and depressive symptoms as the indicators of individual well-being. Grief level was measured using adapted versions of two items from the Traumatic Grief Inventory Self-Report (Boelen and Smid, 2017): "Today, I felt bitter or angry about the loss of my child" and "Today, I felt that life is meaningless or empty without my lost child." We selected these items because they had high factor loadings in both the original version (Boelen and Smid, 2017) and the scale's Turkish adaptation (Baş et al. 2020) and were likely to capture daily fluctuations in grief. To measure depressive symptoms, we had two items used by Ong et al. (2004): "Today, I felt depressed" and "Today, I had very low spirits." The Cronbach alpha levels were high for grief levels (α_{women} = .873; α_{men} = .877) and depressive symptoms (α_{women} = .882; α_{men} = .874).

2.3.3 Relational well-being

We used relationship satisfaction, closeness, and trust as the indicators of relational well-being, given that prior work in relationship science pointed to their primary roles in people's subjective evaluations of their relationship's quality (Fletcher et al. 2000). Relationship satisfaction was measured using the item "Today, I was pleased with the relationship with my partner." Closeness and trust were assessed using the items "Today, I felt close to my partner" and "Today, I thought my partner was trustworthy," respectively. These three constructs were highly correlated for women (rs = .782-.856) and men (rs = .814-.925), confirming our decision to use the average of these constructs (for a similar application, see Pusch et al. 2022). Indeed, the

Cronbach alpha levels were high for relational well-being composed of these three constructs ($\alpha_{\text{women}} = .907$; $\alpha_{\text{men}} = .901$).

2.4 Strategy of Analysis

We conducted Random Intercept Cross-Lagged Panel Model (RICLPM; Hamaker et al. 2015) analyses to investigate the bidirectional associations between repetitive thought and individual and relational well-being. RICLPM disentangles the associations at between-person (i.e., stable trait-like component) and within-person levels (i.e., state-level component). Examinations of variances at each level revealed that most variances of rumination (73% for both women and men), yearning (76% for women, 75% for men), and grief level (71% for women, 73% for men) were due to stable trait-like components at the between-person level (i.e., individual differences). For depressive symptoms, however, the variance was mainly at the within-person level (64% for women, 58% for men). For relational well-being, the variances were almost equally distributed across levels (within-person level: 55% for women, 51% for men).

In the RICLPMs, between-person levels were estimated using the reports at all seven days, each of which had a factor loading of 1. Within-person levels for each day (i.e., deviation from the usual level) were estimated using the report on that day, with a constrained factor loading of 1. The daily cross-lagged effects in the models tested the effect of one variable's deviation from its usual level on the other variable the next day. The models included autoregressive paths (i.e., stability across days), correlations between the within-level variables on Day-1, and within-day error associations (for the RICLPM's figure for individual participants, see Figure A1). However, given the dyadic nature of our data, we extended that model here to investigate our research questions.

The dyadic RICLPM is summarized in Figure 2.1. We followed the abovementioned method to estimate the between-person and within-person latent variables in Figure 2.1 for each partner. To the dyadic RICLPM, we added the correlations between partners' between-person level variables (e.g., the association between one partner's between-person level repetitive thought with the other partner's between-person level well-being). Furthermore, cross-lagged effects between partners' variables were included (e.g., the effect of one partner's deviation of repetitive thought from their usual level on a day on the other partner's well-being the next day). Correlations between partners' within-person level variables on Day-1 and between their errors on

the other days were included in the model. We also evaluated the equality of effects across partners using the chi-square difference tests (e.g., is the effect of rumination on relational well-being the same for men and women?). We reported the models with equal effects across gender because those models were more parsimonious and did not have a significantly worse model fit than unconstrained models (see Table A3).

The cross-lagged and autoregressive effects were kept constant across days (e.g., rumination$_{\text{Day1}}$ → rumination$_{\text{Day2}}$ is equal to rumination$_{\text{Day2}}$ → rumination$_{\text{Day3}}$) due to a lack of theoretical reason to expect differential effects. This preference also limited complexity in the model. We used the full information maximum likelihood estimation with robust standard errors (i.e., MLR) to handle missing data in Mplus (Allison, 2003; Muthén and Muthén, 1998-2019). Syntax files can be found here **(https://osf.io/s6c5n/)**. All final models had good fit statistics (RMSEAs < .08, CFIs > .90; Table A3).

Figure 2.1 Dyadic Random Intercept Cross-lagged Model

Note. W = Women, M = Men. This figure shows a summary of the dyadic extension of the RICLPM we have conducted. How each latent variable on this graph is estimated is shown on a Figure of the individual-level RICLPM in the Supplemental Materials. Correlations between variables at Day 1 and within-day error correlations at other days are not shown on the Figure for the sake of simplicity.
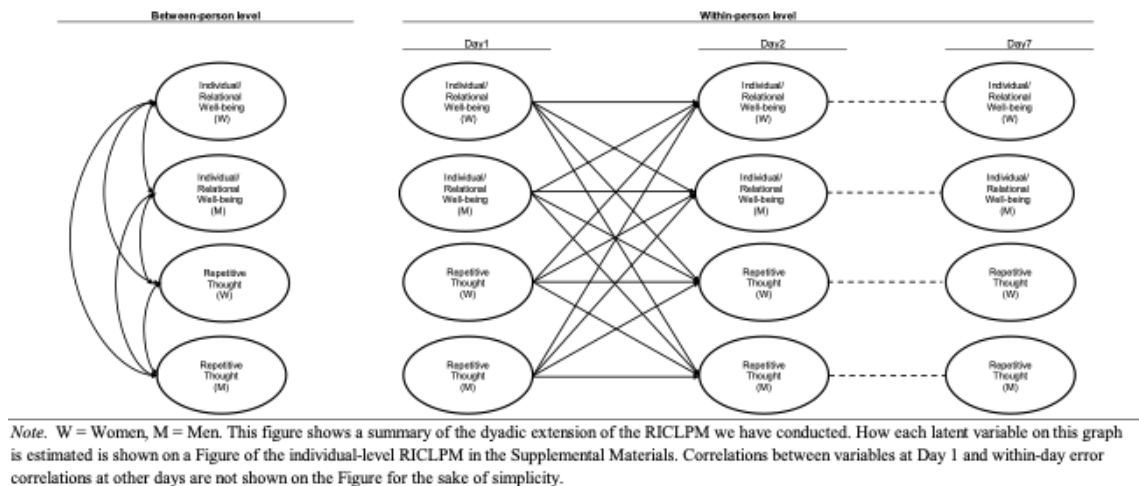
3.   RESULTS

3.1 Descriptive Statistics and Correlations

The descriptive statistics and the correlations between the average variables across days are presented in Table 3.1 (for pregnancy loss and labor/afterward loss groups; see Table A4). The results yielded moderate to large correlations of repetitive thought with the bereaved parents' and their partner's individual well-being but not with relational well-being. Partners' reports were associated with each other for all variables (e.g., the correlation between women's and men's grief levels).

Table 3.1 Descriptive Statistics and Correlations between the Study Variables (N =483; n (women) =249, n (men) =234)

Variable	M (SD)	1	2	3	4	5	6	7	8	9	10
1.Rumination (W)	2.18 (1.13)	-	.56**	.81**	.55**	.83**	.49**	.43**	.16*	-.07	-.05
2.Rumination (M)	1.89 (1.06)		-	.53**	.83**	.56**	.84**	.26**	.41**	-.09	-.04
3.Yearning (W)	2.62 (1.31)			-	.66**	.86**	.54**	.40**	.20**	.001	.02
4.Yearning (M)	2.26 (1.21)				-	.64**	.86**	.29**	.39**	-.09	-.03
5.Grief level (W)	2.01 (1.09)					-	.63**	.50**	.27**	-.10	-.05
6.Grief level (M)	1.77 (1.02)						-	.28**	.49**	-.13	-.05
7.Depressive symptoms (W)	1.93 (0.79)							-	.30**	-.42**	-.15*
8.Depressive symptoms (M)	1.72 (0.79)								-	-.32**	-.33**
9.Relational well-being (W)	4.06 (0.84)									-	.54**
10.Relational well-being (M)	4.37 (0.68)										-

Note. W = Women; M = Men. ** p < .01 (two-tailed). * p < .05 (two-tailed). All variables were measured using 5-point Likert scales.

3.2 Longitudinal Analyses with RICLPMs

3.2.1 Repetitive thought and individual well-being

As shown in Tables 3.2 and 3.3, none of the within-person level longitudinal associations between repetitive thought and individual well-being was significant. However, we found some small to medium-sized significant associations across time or partners for the same variables (see Tables 4 and 5; Cohen, 1988; Orth et al. 2022). For example, one partner's higher-than-usual depression predicted the other partner's depression level the next day.

At the between-person level (i.e., stable trait-like components), repetitive thought and individual well-being were significantly correlated with grief levels moderate to large effect sizes and also with depressive symptoms with small to moderate effect sizes (Cohen, 1988; Tables 3.2 and 3.3). This result means that people with higher (vs. lower) average rumination and yearning levels also had higher grief levels and depressive symptoms. We also found partner effects: One partner's higher (vs. lower) average rumination and yearning levels related to higher grief levels and depressive symptoms in the other partner.

3.2.2 Repetitive thought and relational well-being

The non-significant results for within-person level bidirectional longitudinal associations between repetitive thought and relational well-being mostly aligned with the results for individual well-being. The only exception was that one partner's deviation from their usual rumination level negatively predicted the other partner's relational well-being the next day with a small to medium effect size (Table 3.4).

The trait-like components of repetitive thought and relational well-being were not correlated. The results for the same variables across days or partners yielded that partners' rumination, yearning, and relational well-being levels were correlated at between-person and within-person levels. However, the longitudinal effect of one partner's repetitive thought (i.e., rumination and yearning) on the other partner's repetitive thought level was non-significant.

3.3 Sensitivity Analysis

We controlled for the effects of bereaved parents' ages, number of living children, time since loss, and parents' education and socioeconomic status levels on between-person level well-being. Due to the high correlation between the bereaved parents' ages and time since loss ($r_{\text{women}} = .801$; $r_{\text{men}} = .795$), we used these variables in separate models. In the models with covariates, the majority of the results were identical but two within-person cross-lagged associations emerged. First, higher-than-usual rumination on a day increased the partner's grief level the next day (Age model: $b = 0.06$, $p = .036$, 95%CI $= [0.004 - 0.112]$, $\beta = [.046 - .082]$; Time since the loss model: $b = 0.06$, $p = .041$, 95%CI $= [0.002 - 0.111]$, $\beta = [.045 - .082]$). Second, higher-than-usual depression on a day increased the partner's yearning level the next day (Age model: $b = 0.05$, $p = .036$, 95%CI $= [0.003 - 0.090]$, $\beta = [.049 - .087]$; Time since the loss model: $b = 0.05$, $p = .026$, 95%CI $= [0.006 - 0.093]$, $\beta = [.052 - .093]$). Regarding the between-person associations, the association between depression and rumination turned non-significant ($b = 0.08$, $p = .092$, 95%CI $= [-0.01 - 0.16]$, $r = .134$). The results with covariates could be found here: https://osf.io/s6c5n/

Due to the complexity of our model and the relatively small sample size of the parents who lost their child during labor or afterward, we could not conduct a multi-group analysis to compare the results across pregnancy loss and labor/afterward loss groups. Nevertheless, we re-ran our analyses only with the pregnancy loss group and found almost identical results. The only difference was that one partner's higher-than-usual rumination predicted a higher grief level in the other partner the next day ($b = 0.06$, $p = .04$, 95%CI $= [0.003 - 0.12]$, $\beta = [0.05 - 0.10]$). Results are presented in Table A5-A7.

Table 3.2 RICLPM Results for the Association between Repetitive Thought and Grief Level (N = 483; 228 Couples, 27 Individuals)

Individual Well-being (Grief Level)

Rumination	Actor Effect				Partner Effect			
	b	p	95% CI	β/r	b	p	95% CI	β/r
Within-person (Day → Day+1)								
Grief level→Rumination	-0.004	.90	[-0.06–0.06]	[-.005– -.003]	0.04	.08	[-0.004–0.09]	[.03–.05]
Rumination→Grief level	0.03	.27	[-0.03–0.09]	[.03–.04]	0.04	.07	[-0.003–0.09]	[.03–.07]
Grief level→Grief level	0.10	.01	[0.02–0.17]	[.03–.07]	0.00	.92	[-0.06–0.07]	[.002–.005]
Rumination→Rumination	0.10	.01	[0.04–0.16]	[.09–.14]	0.05	.10	[-0.01–0.10]	[.04–.06]
Between-person								
Grief level↔Rumination	0.92	.01	[0.75–1.10]	[.86–.87]	0.59	.01	[0.41–0.76]	[.55–.551]
Grief level↔Grief level					0.69	.01	[0.47–0.91]	.67
Rumination↔Rumination					0.65	.01	[0.47–0.83]	.59

Yearning	Actor Effect				Partner Effect			
	b	p	95% CI	β/r	b	p	95% CI	β/r
Within-person (Day → Day+1)								
Grief level → Yearning	-0.03	.44	[-0.10–0.04]	[-.03– -.02]	0.01	.89	[-0.06–0.07]	[.004–-.006]
Yearning→Grief level	0.01	.63	[-0.04–0.07]	[.01–.02]	0.01	.56	[-0.03–0.06]	[.01–.02]
Grief level→Grief level	0.10	.01	[0.03–0.17]	[.08–.13]	0.02	.63	[-0.05–0.08]	[.01–.02]
Yearning→Yearning	0.13	.01	[0.06–0.20]	[.11–.18]	0.01	.88	[-0.05–0.06]	[.004–-.006]
Between-person								
Grief level↔Yearning	1.12	.01	[0.92–1.32]	[.89–.90]	0.79	.01	[0.58–1.001]	[.62–.65]
Grief level↔Grief level					0.71	.01	[0.48–0.93]	.68
Yearning↔Yearning					1.05	.01	[0.83–1.28]	.70

Note. The fourth and last columns (β/r) show the standardized coefficients. Because standard errors vary across days, we reported the ranges for standardized coefficients. The signs "→" and "↔" represent unidirectional and bidirectional associations, respectively.

Table 3.3 RICLPM Results for the Association between Repetitive Thought and Depressive Symptoms (N = 483; 228 Couples, 27 Individuals)

Individual Well-being (Depressive Symptoms)								
	Actor Effect				**Partner Effect**			
	b	p	95% CI	β/r	b	p	95% CI	β/r
Rumination								
Within-person (Day→Day+1)								
Dep. symptoms→Rumination	0.03	.10	[−0.01 − 0.07]	[.03 − .06]	0.02	.14	[−0.01 − 0.05]	[.02 − .05]
Rumination→Dep. symptoms	0.02	.53	[−0.05 − 0.10]	[.015 − .02]	0.02	.62	[−0.05 − 0.09]	[.01 − .02]
Dep. symptoms→Dep. symptoms	0.11	.01	[0.03 − 0.19]	[.09 − .13]	0.07	.02	[0.01 − 0.13]	[.05 − .10]
Rumination→Rumination	0.10	.01	[0.04 − 0.17]	[.09 − .14]	0.05	.10	[−0.01 − 0.11]	[.04 − .06]
Between-person								
Dep. symptoms↔Rumination	0.33	.01	[0.23 − 0.44]	[.477 − .484]	0.16	.01	[0.06 − 0.26]	[.22 − .25]
Dep. symptoms↔Dep. symptoms					0.15	.01	[0.05 − 0.25]	0.34
Rumination↔Rumination					0.65	.01	[0.47 − 0.83]	0.60
Yearning								
Within-person (Day→Day+1)								
Dep. symptoms→Yearning	0.01	.72	[−0.03 − 0.05]	[.008 − .013]	0.01	.50	[−0.02 − 0.05]	[.01 − .02]
Yearning→Dep. symptoms	0.01	.78	[−0.06 − 0.08]	[.006 − .012]	−0.03	.31	[−0.10 − 0.03]	[−.04 − −.02]
Dep. symptoms→Dep. symptoms	0.11	.01	[0.04 − 0.19]	[.09 − .14]	0.09	.01	[0.02 − 0.14]	[.06 − .11]
Yearning→Yearning	0.13	.01	[0.06 − 0.19]	[.10 − .16]	0.01	.79	[−0.05 − 0.06]	[.006 − .009]
Between-person								
Dep. symptoms↔Yearning	0.38	.01	[0.25 − 0.51]	[.464 − .466]	0.26	.01	[0.14 − 0.38]	[.29 − .34]
Dep. symptoms↔Dep. symptoms					0.15	.01	[0.05 − 0.26]	0.35
Yearning↔Yearning					1.05	.01	[0.83 − 1.28]	0.70

Note. The fourth and last columns (β/r) show the standardized coefficients. Because standard errors vary across days, we reported the ranges for standardized coefficients. The signs "→" and "↔" represent unidirectional and bidirectional associations, respectively.

Table 3.4 RICLPM Results for the Association between Repetitive Thought and Relational Well-being (N = 483; 228 Couples, 27 Individuals)

| | | | Relational Well-being | | | | | |
| | | Actor Effect | | | | Partner Effect | | |
	b	p	95% CI	β/r	b	p	95% CI	β/r
Rumination								
Within-person (Day→Day+1)								
Relational well-being->Rumination	0.01	.84	[-0.05-0.06]	[.005-.008]	0.02	.49	[-0.03-0.06]	[.01-.02]
Rumination->Relational well-being	0.02	.60	[-0.04-0.07]	[.01-.02]	-0.08	.01	[-0.13- -0.02]	[-.09- -.05]
Relational well-being->Relational well-being	0.18	.01	[0.10-0.26]	[.15-.22]	0.08	.04	[0.002-0.17]	[.06-.11]
Rumination->Rumination	0.11	.01	[0.05-0.17]	[.09-.15]	0.05	.06	[-0.001-0.11]	[.04-.07]
Between-person								
Relational well-being<->Rumination	-0.02	.54	[-0.09-0.05]	[-.04- -.03]	-0.05	.25	[-0.13-0.03]	[-.08- -.07]
Relational well-being<->Relational well-being					0.25	.01	[0.12-0.38]	.56
Rumination<->Rumination partner					0.65	.01	[0.47-0.83]	.60
Yearning								
Within-person (Day→Day+1)								
Relational well-being->Yearning	0.04	.10	[-0.01-0.10]	[.04-.06]	0.02	.43	[-0.03-0.08]	[.02-.03]
Yearning->Relational well-being	0.01	.83	[-0.05-0.07]	[.005-.01]	-0.01	.81	[-0.07-0.05]	[-.01- -.005]
Relational well-being->Relational well-being	0.18	.01	[0.10-0.27]	[.15-.23]	0.09	.04	[0.004-0.17]	[.06-.12]
Yearning -> Yearning	0.13	.01	[0.06-0.19]	[.11-.16]	0.01	.78	[-0.04-0.06]	[.006-.009]
Between-person								
Relational well-being<->Yearning	-0.02	.74	[-0.11-0.08]	[-.024- -.017]	-0.05	.40	[-0.15-0.06]	[-.06- -.05]
Relational well-being<->Relational well-being					0.25	.01	[0.12-0.38]	.56
Yearning<->Yearning					1.05	.01	[0.82-1.28]	.69

Note. The fourth and last columns (β/r) show the standardized coefficients. Because standard errors vary across days, we reported the ranges for standardized coefficients. The signs "−>" and "<−>" represent unidirectional and bidirectional associations, respectively. Results in bold are statistically significant.

4. DISCUSSION

In this study, we tested the bidirectional associations of repetitive thought (i.e., rumination and yearning) within individual (i.e., grief level and depressive symptoms) and relational well-being (i.e., relationship satisfaction, closeness, and trust) using a seven-day dyadic diary in bereaved parents who lost their child during pregnancy, labor, or afterward. Our results revealed that one partner's higher-than-usual rumination lowered the other partner's relational well-being the next day. Other longitudinal effects of within-person (i.e., state-level) components of repetitive thought and well-being were not significant. At the between-person level (i.e., trait-like component), repetitive thought was negatively associated with individual well-being but not relational well-being.

Contrary to our expectations, the findings did not support an intrapersonal bidirectional link between repetitive thought and individual/relational well-being, meaning that a higher-than-usual repetitive thought is not a predictor of the next day's individual/relational well-being, or vice versa. Several theoretical and methodological factors could (partly) explain the lack of a bidirectional association. First, although Response Styles Theory focuses on depressive rumination (Nolen-Hoeksema et al. 2008), we examined repetitive thought specific to the deceased child (i.e., grief rumination and yearning). Given that depressive rumination assesses rumination in several domains of life rather than one specific domain (i.e., loss), it may be more likely to have a reciprocal link with well-being. Second, to our knowledge, our study is the first that investigated the reciprocity between daily rumination and well-being in bereaved couples. Most studies that tested the reciprocal association had longer time intervals between the measurements (e.g., six weeks; Eisma et al. 2022). However, varying time intervals could produce differential results (Kuiper and Ryan, 2018). For example, studies with longer (vs. shorter) time intervals may capture the trait-like component more accurately.

Another reason for the non-significant longitudinal association could be the relatively long time since the loss in our sample. Bereaved parents might have learned to

prevent a spillover between their repetitive thought and well-being (O'Connor and Seeley, 2022). Perhaps the bidirectional association between repetitive thought and well-being is more evident in recently bereaved parents. In line with this, controlling for some variables, including time since loss, our sensitivity analysis showed that higher-than-usual rumination level increased the partner's grief level, and higher-than-usual depression increased the partner's yearning level. Furthermore, sleep between two consecutive days might have obscured the mutual impact between repetitive thought and well-being due to its role in emotion regulation (Lancel et al. 2020; Walker, 2009). Future research with more assessments within a day may unravel this possibility. Lastly, our results should be interpreted in the cultural context of Turkey, characterized as a non-Western culture. Although some studies have presented mixed findings (Kwon et al. 2013; Li et al. 2022), it is generally observed that rumination has a less strong impact on individual well-being in non-Western cultures compared to Western cultures due to cultural differences in use of thinking styles and self-distancing from emotional experiences (De Vaus et al. 2018). For instance, the effect of rumination on post-traumatic stress is more significant in European American individuals than in Asian American individuals (Jobson et al. 2022). Thus, our non-significant longitudinal results might be attributable to the influence of Turkish culture.

Although we did not find a within-person association, the trait-like components of repetitive thought and individual well-being were negatively related. Several studies have demonstrated that persistent repetitive thought exacerbates adaptation to bereavement, leading to higher levels of grief and depressive symptoms (e.g., Eisma and Stroebe, 2017; Stroebe et al. 2007). Our results imply that the previous studies' finding of a link between repetitive thought and well-being mostly stems from the trait-like component by simultaneously testing the effects of trait-like and state components. Thus, we provide information to the intervention programs that the main target should be individuals with persistent repetitive thought patterns instead of daily fluctuations.

Unexpectedly, trait-like components of repetitive thought and relational well-being were unrelated. These results contradict previous findings showing that repetitive thought is associated with lower relational well-being for both bereaved and non-bereaved couples (Caldwell et al. 2019; Gottlieb et al. 1996; Pearson et al. 2010). Nevertheless, repetitive thought could still be related to relational well-being through its impact on individual well-being (Roberson et al. 2018). Due to the already complex nature of the analyses, we could not test this indirect effect.

Our findings supported the interdependence in bereaved parents' grief experiences

(Albuquerque et al. 2016; Stroebe et al. 2013). We found that the relational well-being of bereaved parents was predicted by their partners' level of rumination at the within-person level. In line with previous studies (Caldwell et al. 2019), the dysfunctional interpersonal behaviors of people who ruminate, such as clinginess and aggressiveness (Joiner, 2000; Nolen-Hoeksema et al. 2000, 2008), may have lowered their partners' relational well-being. Moreover, nearly all between-person partner effects were significant (e.g., partners' trait-like components of rumination were correlated). These findings align with Stroebe and Schut's (2015) emphasis that family members are influenced by each other's grief processes after the death of a loved one.

Following the death of a child, bereaved fathers and mothers may differ from one another in their coping mechanisms and grief processes, for example, due to social norms (Wing et al. 2001). However, our results showed that the association between repetitive thought and individual/relational well-being is similar across bereaved fathers and mothers. This finding aligns with studies that have found similarities in the grief experiences of fathers and mothers (Buyukcan-Tetik et al. 2022; Lundorff et al. 2020). These similarities are crucial for the bereaved parents' relationships, considering that perceived differences in grief experiences are associated with lower relational well-being (Buyukcan-Tetik et al. 2017).

Our study has several strengths. First, to our knowledge, no previous study has utilized the dyadic diary method among bereaved parents. Second, the bidirectionality argument of the Response Styles Theory has primarily been tested for rumination and individual well-being (Blanke et al. 2021; Brans et al. 2013; Eisma et al. 2022). Our research expanded on this argument by investigating relational well-being in bereaved couples. Third, studies on yearning are relatively scarce, and our study encourages further examinations of yearning for the deceased.

We should also acknowledge some limitations. First, our sample mainly consisted of bereaved parents who experienced loss during pregnancy. Exploring the bidirectional link among couples who experienced the loss of a child during labor or afterward with a larger sample size would further contribute to the field. Furthermore, our results await to be tested in clinical samples to better understand the role of repetitive thought in prolonged grief disorder. Another limitation is that in this study, we did not measure the daily frequencies of repetitive thought but whether such thoughts occurred or not (Eisma et al. 2014; O'Connor and Sussman, 2014). This may have reduced our ability to capture daily fluctuations in rumination and yearning levels. Replicating our results with frequency measurements is recommended. Lastly, we had to use a few items to measure our variables due to the diary design (Bolger et

al. 2003), but future research should use validated scales.

In conclusion, our research revealed that the trait-like components of repetitive thought play a role in bereaved parents' and their partners' individual well-being. We also had evidence revealing that daily fluctuations in ruminative thought about the deceased child can pose a risk to the partner's relational well-being. Thus, we recommend intervention programs and clinical practice for bereaved parents to identify individuals with persistent repetitive thought and consistently lower individual well-being. What is more, considering the interdependence between bereaved mothers' and fathers' bereavement adjustment, the interventions should include both partners.

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APPENDIX A

Table A.1 Deleted rows from the data.

1) Number of rows in the original data	3485
2) Preview responses	3
3) Did not enter the participant code, meaning that they did not see the rest of the survey	115
4) Unrelated participant codes	11
5) Deleted couples (e.g., participants who discussed their answers with their partners)	68
6) Code-gender mismatch (Women participants' codes should end with letter F and men participants' codes should end with the letter M)	24
7) Deleted rows based on the notes taken during the data collection (e.g a third person read the questions to the participant)	71
8) Entries at unrelated times (i.e., before 7 pm or after midnight)	86
9) Repeated entries on the same days (first entries were kept)	135
10) Other issues (e.g., couples who gave unreliable responses in cross-sectional survey was deleted in diary data)	143
11) Filled in the survey for more than 7 days	26
Final number of rows in the data	2803

Table A.2 Multigroup Sample Characteristics

	Pregnancy Loss				Labor/afterwards		
	M	SD	Range		M	SD	Range
Age (W)	39.14	9.81	20-62	43.42		11.40	25-74
Age (M)	43.28	10.32	25-71	46.97		12.65	27-87
Marriage duration (years)	15.07	10.45	0.67-41	20.28		12.57	0.92-56
Number of deceased children (W)	1.50	1.02	1-8	1.46		0.85	1-4
Number of deceased children (M)	1.43	0.94	1-6	1.43		0.88	1-4
Number of living children (W)	1.45	1.05	0-4	1.54		1.49	0-10
Number of living children (M)	1.44	1.05	0-4	1.52		1.61	0-10
Time since loss (years)	9.79	9.09	0.08-39	13.04		11.62	0.08-50
Age of the child lost during/after labor (years)	-	-	-	3.29		6.58	0-25
Gestational period for pregnancy loss (months)	3.28	1.69	0.75-9	-		-	-
Education (W)	4.45	1.36	2-7	4.41		1.80	1-7
Education (M)	4.63	1.30	2-7	4.40		1.53	2-7
Socioeconomic Status (W)	5.42	1.88	1-9	5.51		1.88	1-10
Socioeconomic Status (M)	5.39	1.76	1-9	5.50		1.51	2-8

Note. W = Women, M = Men. The number of deceased children includes child loss during pregnancy, labor, or afterward. Participants with several losses responded to the questions based on their most recent loss. Subjective socioeconomic status was measured using a 10-step ladder with increasing levels (Adler & Stewart, 2007). The education degrees were presented in increasing order: 1 = no education, but literate, 2 = primary school, 3 = secondary school, 4 = high school, 5 = two-year community college, 6 = four-year university, 7 = master's/Ph.D. Thus, the mean levels on the table show an average education level of high school degree in our sample. Analyses excluding these couples (N = 156 couples) yielded almost identical results.

Figure A.1 Random Intercept Cross-lagged Model for Individual Participants
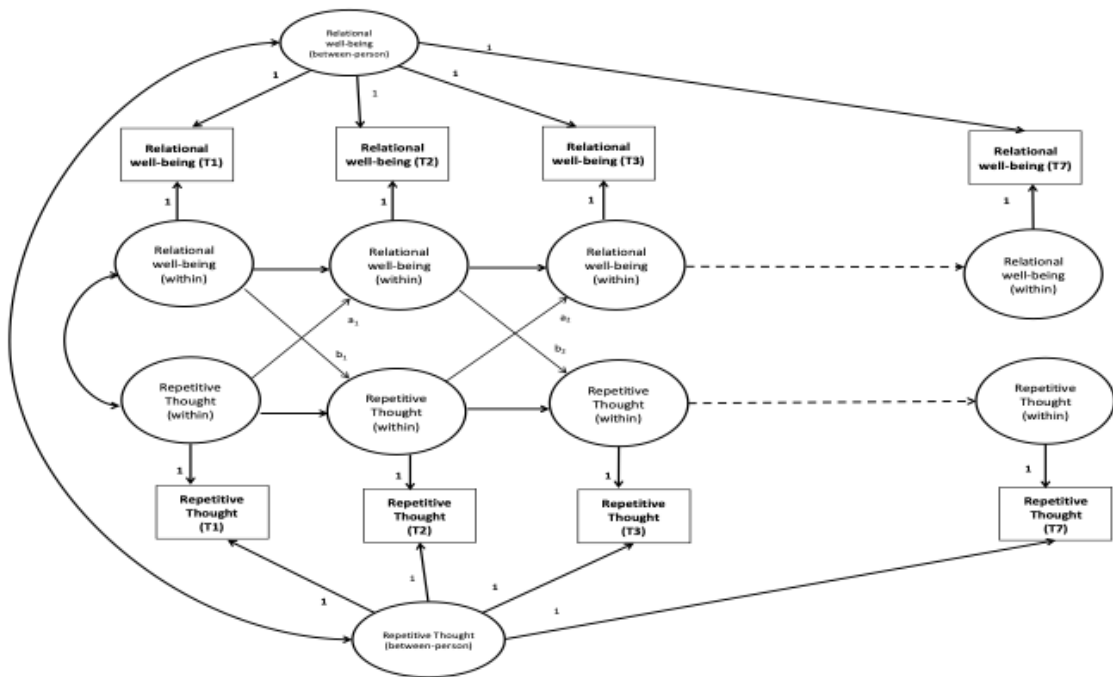
Table A.3 The Comparison of Unconstrained and Constrained Models

Model Description	AIC	BIC	RMSEA	CFI	χ^2	df	Scaling correction	p	Δdf	$p\ \Delta\chi^2$
Rumination-Grief Level										
1 Unconstrained Model	12193.68	12526.19	0.04	.97	457.92	340	1.31	.001		
2 Constrained Model	12183.86	12473.92	0.04	.97	464.78	352	1.32	.001	12.00	.73
Yearning-Grief Level										
1 Unconstrained Model	12290.03	12622.54	0.04	.97	482.14	340	1.21	.001		
2 Constrained Model	12296.93	12586.99	0.04	.97	501.27	352	1.23	.001	12.00	.10
Rumination-Depressive Symptoms										
1 Unconstrained Model	14303	14635.92	0.03	.98	406.71	340	1.17	.008		
2 Constrained Model	14299	14589.06	0.03	.97	422.35	352	1.18	.006	12.00	.21
Yearning-Depressive Symptoms										
1 Unconstrained Model	14665	14997.60	0.03	.98	407.75	340	1.14	.007		
2 Constrained Model	14659	14948.87	0.03	.98	420.71	352	1.14	.007	12.00	.36
Rumination-Relational Well-being										
1 Unconstrained Model	12944.40	13277.28	0.04	.96	472.01	340	1.15	.001		
2 Constrained Model	12933.06	13223.44	0.04	.96	478.78	352	1.16	.001	12.00	.73
Yearning-Relational Well-Being										
1 Unconstrained Model	13300	13633.27	0.04	.96	486.75	340	1.15	.001		
2 Constrained Model	13289	13579.78	0.04	.96	492.28	352	1.14	.001	12.00	.74

Table A.4 Multigroup Descriptive Statistics and Correlations for Study Variables

Variable	M (SD)	1	2	3	4	5	6	7	8	9	10
Pregnancy Loss											
1. Rumination (W)	1.94 (0.99)	-	.62**	.86**	.52**	.87**	.52**	.38**	.16	-.11	-.01
2. Rumination (M)	1.68 (0.96)		-	.52**	.84**	.59**	.84**	.23**	.32**	-.16	.04
3. Yearning (W)	2.19 (1.11)			-	.55**	.88**	.48**	.44**	.20*	-.09	-.01
4. Yearning (M)	1.91 (1.01)				-	.58**	.91**	.24**	.37**	-.15	.02
5. Grief level (W)	1.74 (0.93)					-	.57**	.49**	.21*	-.14	-.02
6. Grief level (M)	1.55 (0.86)						-	.19*	.36**	-.12	.07
7. Depressive symptoms (W)	1.84 (0.76)							-	.31**	-.45**	-.08
8. Depressive symptoms (M)	1.66 (0.75)								-	-.31**	-.23**
9. Relational well-being (W)	4.08 (0.79)									-	.47**
10. Relational well-being (M)	4.40 (0.62)										-
During labor or afterwards											
1. Rumination (W)	2.56 (1.25)	-	.40**	.71**	.44**	.75**	.35**	.48**	.05	.03	-.06
2. Rumination (M)	2.29 (1.13)		-	.45**	.80**	.38**	.78**	.23	.43**	-.04	-.02
3. Yearning (W)	3.57 (1.28)			-	.66**	.79**	.50**	.35**	.15	.18	.10
4. Yearning (M)	3.05 (1.31)				-	.58**	.78**	.35**	.33**	-.03	.06
5. Grief level (W)	2.56 (1.23)					-	.60**	.54**	.25*	-.05	-.04
6. Grief level (M)	2.19 (1.19)						-	.35**	.62**	-.17	-.12
7. Depressive symptoms (W)	1.99 (0.87)							-	.24	-.36**	-.19
8. Depressive symptoms (M)	1.81 (0.83)								-	-.39**	-.38**
9. Relational well-being (W)	4.08 (0.79)									-	.67**
10. Relational well-being (M)	4.40 (0.62)										-

Note. W = Women; M = Men. **p < .01 (two-tailed). *p < .05 (two-tailed). All variables were measured using 5-point Likert scales. Three couples answered for more than one pregnancy loss. Analyses excluding these couples (N = 156 couples) yielded almost identical results.

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Table A.5 RICLPM Results for the Association between Repetitive Thought and Grief Level for Pregnancy Loss

	Individual Well-being (Grief Level)							
	Actor Effect				Partner Effect			
Rumination	b	p	95% CI	β/r	b	p	95% CI	β/r
Within-person (Day→Day+1)								
Grief level -> Rumination	-0.04	.29	[-0.12 – 0.04]	[-.05 – -.03]	0.04	.16	[-0.02 – 0.11]	[.03 – -.07]
Rumination -> Grief level	0.001	.999	[-0.08 – 0.08]	0	0.06	.04	[0.003 – 0.12]	[.05 – -.10]
Grief level -> Grief level	0.08	.08	[-0.01 – 0.16]	[.06 – .12]	0.01	.73	[-0.06 – 0.08]	[.01 – -.02]
Rumination -> Rumination	0.11	.01	[0.02 – 0.19]	[.05 – .15]	0.07	.06	[-0.002 – 0.14]	[.05 – -.10]
Between-person								
Grief level <-> Rumination	0.73	.01	[0.51 – 0.96]	[.88 – .91]	0.48	.01	[0.26 – 0.69]	[.57 – .59]
Grief level <-> Grief level					0.47	.01	[0.23 – 0.70]	.62
Rumination <-> Rumination					0.56	.01	[0.34 – 0.78]	.64
Yearning	b	p	95% CI	β/r	b	p	95% CI	β/r
Within-person (Day→Day+1)								
Grief level -> Yearning	-0.06	.22	[-0.15 – 0.04]	[-.07 – -.05]	0.02	.66	[-0.06 – 0.10]	[.01 – -.02]
Yearning -> Grief level	-0.02	.53	[-0.09 – 0.05]	[-.03 – -.02]	0.04	.22	[-0.02 – 0.09]	[.03 – -.06]
Grief level -> Grief level	0.09	.06	[-0.01 – 0.18]	[.08 – .12]	0.02	.67	[-0.05 – 0.08]	[.01 – -.02]
Yearning -> Yearning	0.10	.02	[0.02 – 0.19]	[.08 – .15]	-0.03	.38	[-0.10 – 0.04]	[-.05 – -.02]
Between-person								
Grief level <-> Yearning	0.84	.01	[0.60 – 1.08]	[.92 – .96]	0.53	.01	[0.29 – 0.76]	[.57 – .60]
Grief level <-> Grief level					0.47	.01	[0.24 -0.70]	.62
Yearning <-> Yearning					0.64	.01	[0.38 – 0.90]	.60

Note. The fourth and last columns (β/r) show the standardized coefficients. Because standard errors vary across days, we reported the ranges for standardized coefficients. The signs "->" and "<->" represent unidirectional and bidirectional associations, respectively. Three couples answered for more than one pregnancy loss. Analyses excluding these couples (N = 156 couples) yielded almost identical results.

Table A.6 Results for the Association between Repetitive Thought and Depressive Symptoms for Pregnancy Loss

	Individual Well-being (Depressive Symptoms)							
Rumination	**Actor Effect**				**Partner Effect**			
Within-person (Day→Day+1)	b	p	95% CI	β/r	b	p	95% CI	β/r
Dep. symptoms→Rumination	0.001	.97	[-0.04 – 0.04]	.001	0.03	.10	[-0.01 – 0.06]	[.03 – .06]
Rumination→Dep. symptoms	0.01	.88	[-0.08 – 0.09]	[.004 – .007]	0.001	.999	[-0.08 – 0.08]	0
Dep. symptoms→Dep. symptoms	0.11	.07	[-0.01 – 0.22]	[.09 – .13]	0.07	.08	[-0.01 – 0.08]	[.05 – .10]
Rumination→Rumination	0.12	.01	[0.04 – 0.19]	[.09 – .15]	0.08	.047	[0.001 – 0.15]	[.06 – .10]
Between-person								
Dep. symptoms↔Rumination	0.24	.01	[0.11 – 0.37]	[.40 – .43]	0.14	.01	[0.03 – 0.25]	[.23 – .25]
Dep. symptoms↔Dep. symptoms					0.14	.05	[0.001 – 0.27]	.35
Rumination↔Rumination					0.56	.01	[0.34 – 0.79]	.63
Yearning	**Actor Effect**				**Partner Effect**			
Within-person (Day→Day+1)	b	p	95% CI	β/r	b	p	95% CI	β/r
Dep. symptoms→Yearning	0.002	.95	[-0.05 – 0.05]	[.002 – .003]	0.03	.20	[-0.02 – 0.08]	[.03 – .06]
Yearning→Dep. symptoms	0.01	.92	[-0.10 – 0.11]	[.003 – .006]	-0.02	.60	[-0.11 – 0.07]	[-.03 – -.01]
Dep. symptoms→Dep. symptoms	0.11	.07	[-0.01 – 0.23]	[.09 – .14]	0.07	.06	[-0.004 – 0.15]	[.05 – .11]
Yearning→Yearning	0.09	.07	[-0.01 – 0.18]	[.07 – .12]	-0.02	.63	[-0.08 – 0.05]	[-.02 – -.01]
Between-person								
Dep. symptoms↔Yearning	0.33	.01	[0.17 – 0.49]	[.49 – .53]	0.20	.01	[0.06 – 0.34]	[.29 – .35]
Dep. symptoms↔Dep. symptoms					0.15	47	[0.002 – 0.29]	.37
Yearning↔Yearning					0.63	.01	[0.37 – 0.88]	.59

Note. The fourth and last columns (β/r) show the standardized coefficients. Because standard errors vary across days, we reported the ranges for standardized coefficients. The signs "→" and "↔" represent unidirectional and bidirectional associations, respectively. Three couples answered for more than one pregnancy loss. Analyses excluding these couples (N = 156 couples) yielded almost identical results.

Table A.7 RICLPM Results for the Association between Repetitive Thought and Relational Well-being for Pregnancy Loss

	Actor Effect				Partner Effect			
	b	p	95% CI	β/r	b	p	95% CI	β/r
Rumination								
Within-person (Day→Day+1)								
Relational well-being→Rumination	0.01	.89	[-0.06 – 0.07]	[.004 – .008]	-0.01	.84	[-0.05 – 0.04]	[-.01 – -.004]
Rumination→Relational well-being	0.02	.46	[-0.04 – 0.09]	[.02 – .03]	-0.12	.01	[-0.18 – -0.05]	[-.16 – -.08]
Relational well-being→Relational well-being	0.13	.01	[0.04 – 0.22]	[.10 – .18]	0.06	.19	[-0.03 – 0.14]	[.03 – .09]
Rumination→Rumination	0.12	.01	[0.04 – 0.20]	[.09 – .16]	0.08	.03	[0.01 – 0.15]	[.06 – .11]
Between-person								
Relational well-being↔Rumination	-0.01	.80	[-0.08 – 0.06]	[-.02 – -.01]	-0.05	.32	[-0.13 – 0.04]	[-.08 – -.07]
Relational well-being↔Relational well-being					0.20	.03	[0.02 – 0.37]	.50
Rumination↔Rumination partner					0.57	.01	[0.34 – 0.80]	.64
Yearning								
Within-person (Day→Day+1)								
Relational well-being→Yearning	0.02	.48	[-0.04 – 0.08]	[.02 – .03]	-0.02	.63	[-0.08 – 0.05]	[-.03 – -.01]
Yearning→Relational well-being	-0.01	.80	[-0.08 – 0.06]	[-.01 – -.006]	-0.04	.38	[-0.12 – 0.05]	[-.07 – -.02]
Relational well-being→Relational well-being	0.14	.01	[0.05 – 0.24]	[.11 – .19]	0.06	.13	[-0.02 – 0.15]	[.04 – .10]
Yearning → Yearning	0.09	.07	[-0.01 – 0.18]	[.08 – .12]	-0.02	.63	[-0.08 – 0.05]	[-.02 – -.01]
Between-person								
Relational well-being↔Yearning	-0.02	.66	[-0.09 – 0.05]	[-.03 – -.02]	-0.05	.24	[-0.14 – 0.04]	[-.09 – -.08]
Relational well-being↔Relational well-being					0.19	.03	[0.02 – 0.37]	.50
Yearning↔Yearning					0.62	.01	[0.37 – 0.88]	.59

Note. The fourth and last columns ($β/r$) show the standardized coefficients. Because standard errors vary across days, we reported the ranges for standardized coefficients. The signs "->" and "<->" represent unidirectional and bidirectional associations, respectively. Three couples answered for more than one pregnancy loss. Analyses excluding these couples (N = 156 couples) yielded almost identical results.