Stress and Marital Adjustment in Parents of Children with Cancer: The Moderating Role of Emotion Regulation

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A thesis

submitted in partial fulfillment of the

requirements for the degree of

Master of Science

University of Washington

2022

Committee:

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Program Authorized to Offer Degree:

Department of Psychology

University of Washington

Abstract

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Caregivers of children with cancer report high levels of distress and family conflict. Previous research has found that greater life stressors during the first year post-diagnosis predicted lower marital adjustment between caregivers. However, caregivers' emotion regulation (ER) skills may allow them to handle co-occurring stressors more adaptively, maintaining the quality of family relationships. The current study examines whether caregivers' ER moderates the relation between various stressors (negative life events, treatment related events, life threat, treatment intensity, financial strain) and the trajectory of marital adjustment during the first year of cancer treatment. Primary caregivers (n = 159) completed twelve monthly questionnaires after their child's diagnosis. Their ER was measured both through an interview (observed ER) and through resting respiratory sinus arrhythmia (RSA). RSA moderated the association between life threat and marital adjustment at month twelve, such that life threat was only significantly associated with lower marital adjustment among caregivers with low RSA. The associations between the other stressors and marital adjustment were not moderated by either ER measure. Life threat may be a uniquely salient stressor because it is a fundamental fear that caregivers have little control over. Caregivers with higher resting RSA may be better equipped to maintain marital adjustment when faced with life threat to their child, although further replication is needed.

Stress and Marital Adjustment in Parents of Children with Cancer: The Moderating Role of Emotion Regulation

The stress of pediatric cancer not only affects the child under treatment but also the entire family system (Evan & Zeltzer, 2006; van Schoors et al., 2017). Studies find that parents are under particularly high stress during their child's cancer treatment, as they deal with a number of concerns, including financial issues (Eiser & Upton, 2007; Bona et al., 2014), worries of life threat for their child (Barakat, Kazak, Gallagher, Meeske, & Stuber, 2000), and watching their child endure painful procedures (McGrath & Phillips, 2008; Klassen et al., 2008) in addition to the daily stresses of parenting and managing the household (Palmero & Eccleston, 2009). Unsurprisingly, parents of children recently diagnosed with cancer report experiencing higher levels of distress and family conflict than parents of healthy children (Pai et al., 2007; Sloper, 2000). These findings highlight the importance of investigating the effects of stress on parents of children with cancer (Bakula et al., 2020; Robinson et al., 2007).

Stressors and Marital Relationships

One manner in which the stress of treatment may impact caregivers is by placing greater strain on their relationships, with caregivers of children with cancer reporting higher levels of family conflict (Bakula et al., 2020; Pai et al., 2007; Robinson et al., 2007; Sloper, 2000). However, there are inconsistent findings on the impact of cancer treatment on caregivers' marital relationships, with studies describing increases, decreases, and no change in marital adjustment (Van Schoors et al., 2017). Studies finding decreases in marital adjustment describe elevated conflict between partners due to daily stressors, anger, and worry (Nicholas et al., 2009), declines in relationship quality (Young et al., 2002), and significant marital distress for approximately 25% or caregivers (Dahlquist et al., 1993). On the other hand, caregivers have

also described stronger relationships with their partners (Brody & Simmons 2007), and one study found that marital adjustment in parents of children with cancer was similar to that of parents of healthy children (Wittrock et al., 1994). In a review of the literature, Van Schoors and colleagues (2017) concluded that marital adjustment levels generally remain consistent, but that pediatric cancer may have a negative effect for some couples. Longitudinal research indicates that the variability in findings may be due to differing patterns of adjustment between families. Katz et al (2018) found that there was no average change in marital adjustment in the year following cancer diagnosis, but that this was due to considerable variability between couples, with some improving, decreasing, or maintaining their levels of adjustment.

One factor that may contribute to the variation in trajectories of marital adjustment is that some families experience more concurrent stressors during treatment. Caregivers describe feeling that they need to put their marriage on hold to care for their sick child (Long & Marsland, 2011). If they are also juggling additional stressors, such as painful treatment procedures or a job change, this may further sap mental and emotional resources to engage with their partner. Families experiencing more concurrent stressors have been found to feel more burdened by their child's illness (Josie et al., 2008). Furthermore, prevalence of treatment-related stressors, perceived life threat to their child, and treatment intensity have all been linked to poorer caregiver adjustment and may also place greater strain on the marital relationship (Barakat et al., 2000; Bona et al., 2014; Kazak et al., 1998; McGrath & Philips, 2008; Rosenberg et al., 2013). Families of children with cancer also report experiencing more stressful life events unrelated to their child's illness than those of healthy children (Thoma et al., 1993), which in turn have been linked to poorer caregiver adjustment (Bakarat et al., 2000). Given the robust association between stress and relationship quality (Lucas et al., 2021; Neff & Karney, 2004; Story &

Bradbury, 2004), the presence of greater treatment and non-treatment related stressors may place more strain on marital relationships.

To test the association between stress and marital quality in a pediatric cancer population, Lavi and colleagues (2018) examined the association between various cancer-specific and general stressors (financial stress, perception of life threat, treatment-related stress, and negative life events) and trajectories of marital adjustment. Greater negative life events and treatment-related stressors were related to greater declines in marital adjustment following diagnosis and lower marital adjustment one year post-diagnosis (Lavi et al., 2018). Financial strain was also related to lower marital adjustment one year post-diagnosis.

Emotion Regulation as a potential protective factor

Given the importance of marital adjustment to family functioning and child well-being (Katz & Gottman, 1993), it is crucial to identify factors that may protect caregivers from the negative impact of stressors during pediatric cancer treatment. Parents' emotion regulation (ER) skills may be one such factor that buffers these effects. ER is defined as the ability to appropriately modulate the intensity, quality, duration, and expression of internal feeling states in the service of external goals (Gross, 1998; Thompson, 1994), involving experiential, behavioral, and physiological components (Campos et al., 1994; Fox, 1994; Gross, 2014).

Stressors may have less of an impact on individuals with more effective ER strategies. In youth experiencing life stress and victimization, adaptive ER skills were protective against the development of adjustment problems and blunted cortisol responses to stress (Flouri & Mavroveli, 2013; Kliewer, 2016). ER abilities has been associated with greater self-reported resilience in adolescents (Troy & Mauss, 2011; Mestre et al., 2017). In an adult sample, adaptive ER strategy use was associated with more positive affect after stressful daily life events, whereas

maladaptive strategy use was associated with lower positive affect, particularly on high stress days (Richardson, 2017). was protective against the association between stress and psychopathology.

Little research has been conducted on ER in caregivers of children with cancer, but studies have been done on ER in cancer patients. Although caregivers do not share all the same experiences as cancer patients, these studies provide some insight into the role of ER in managing stressors associated with the cancer treatment, which is often long and emotionally intense for both patients and caregivers. Use of adaptive cognitive ER strategies predicted lower depression symptoms over time among cancer patients (Wang et al., 2014) and was linked to greater positive emotions (Peh et al., 2016). Additionally, a meta-analysis on ER and psychological distress in cancer survivors concluded that emotion suppression, considered to be a maladaptive ER strategy, was related to higher psychological stress (Baziliansky & Cohen, 2021). Furthermore, Conley, Bishop, and Anderson (2016) found that ER difficulties were more closely associated with psychopathology in cancer patients than in healthy matched controls, suggesting that ER may be particularly important when managing the stress of cancer treatment.

Greater facility in expressing and containing one's emotional states flexibly to context is also key in relationship functioning (English, John & Gross, 2014). Emotions and their expression help to guide interactions and strengthen social bonds (Frijda & Mesquita, 1994; Keltner & Haidt, 1999; Keltner & Kring, 1998), and ER abilities have been linked to greater interpersonal sensitivity (Lopes et al., 2005). Emotion dysregulation is associated with negative relationship outcomes, such as conflict, psychological aggression, and intimate partner abuse (Shorey et al., 2011; Tager et al., 2010; Lopes et al., 2011), and emotion suppression has been linked to lower closeness with peers (English et al., 2012). ER abilities are also associated with

greater self-reported intimate dialogue with one's partner (Tani, Pascuzzi & Raffagnino, 2015). Similarly, wives' downregulation of negative emotion after marital conflict was associated with greater use of constructive communication and, in turn, future marital adjustment (Bloch et al., 2014). Given that caregivers of children with cancer report decreases in communication and closeness (Bjork et al., 2006), the use of ER skills to connect with one's partner may be especially protective to the relationship.

ER is comprised of multiple components, including subjective experience, behavior, and physiological responses (Campos et al., 1994; Gross, 2014). Respiratory sinus arrhythmia (RSA) has been identified as a physiological marker of ER (Calkins & Dedmon, 2000; Porges, Doussard-Roosevelt, & Maiti, 1994). RSA refers to the fluctuation in heart rate that occurs during breathing and is reflective of the level of activation of the parasympathetic nervous system through the vagus nerve, with higher RSA indicating greater parasympathetic activity (Thayer, Hansen, Saus-Rose, & Johnsen, 2009). Thus, high RSA at rest indicates a more relaxed baseline physiological state that allows the body to respond more adaptively to external stimuli and have a greater capacity for ER (Porges, 2007).

Lower RSA has been associated with greater psychological distress in response to stressors (Diamond et al., 2011; Friedman, 2007), whereas higher baseline RSA has been associated with lower conflict and higher romantic relationship quality (Caldwell, da Estrela, MacNeil, & Gouin, 2019; Han et al., 2021). Despite calls to incorporate a multi-method approach to understanding the different components of ER in conjunction with one another (Beauchaine, 2015; Cole, Martin, & Dennis, 2004), limited research has done so. In a study that did take a multi-method approach, Deater-Deckard and colleagues (2016) found that life stressors were only associated with higher negative affect among women low in ER, measured

both through RSA and use of cognitive reappraisal. Thus, higher ER in different forms may also be a protective factor for marital adjustment in the context of stress.

Current Study

The current study aims to build upon previous research linking concurrent stressors to declines in marital adjustment in parents of children with cancer in the first year of cancer treatment (Lavi et al., 2018). We test whether the associations between various stressors and marital adjustment are moderated by parents' ER, measured both through resting RSA and observation. We hypothesize that ER may act as a buffer that reduces the association between stress and marital adjustment. The study focuses on the first year following diagnosis, as this has been identified as the most stressful period of time for families of children with cancer (Leavitt et al., 1999), so it may place the greatest strain on caregivers' regulatory resources.

Method

Participants

One hundred and fifty nine families participated in the study. Children had been recently diagnosed with cancer, and were two to seventeen years old (M = 6.3 years, SD = 3.5 years, 48% male), although most (89.3%) were two to ten years old. Primary caregivers were identified by families as the child's mother (85.7%), father (11.0%), grandmother (1.9%), stepmother (0.6%), and stepfather (0.6%). The average age of primary caregivers was 36.45 years (SD = 7.98), and 91% of primary caregivers were married. Primary caregivers identified their race/ethnicity as European American (89%), , Latin American (9%), African American (5%), Asian (3%), and other (3%). Children's cancer diagnoses were leukemia (33.0%), central nervous system (CNS) tumor (19.9%), lymphoma (9.7%), sarcoma (9.7%), Wilm's tumor (7.4%), neuroblastoma

(3.5%), or another form of cancer (7.4%). Family income ranged from less than $40,000 (31.9%), between $40,000 and $80,000 (26.6%), and over $80,000 (41.5%).

Procedures

Families were recruited as part of a larger study from two children's hospitals in urban areas of the Northwest and Southeast United States. Families were approached within two weeks of their child's cancer diagnosis to take part in the study. Children with neurofibromatosis Type I, relapsed cancer, or secondary malignancies were excluded. Of 502 eligible families, 309 were approached, 176 enrolled, and 159 completed at least 1 study component. The most common reason cited for declining to participate was being too busy.

At consent, primary caregivers were provided an initial questionnaire packet, which was completed between two weeks and four months post-diagnosis (M = 55.23 days, SD = 26.53). After caregivers sent in their initial packet, questionnaires were mailed to them monthly for a year after diagnosis, yielding up to 12 time points of assessment. Additionally, a home visit was conducted within 3 months of diagnosis in which the primary caregiver's physiological data was collected. At this time, caregivers also completed a phone interview on their experiences related to their own and their child's emotions.

On average, primary caregivers completed 6.8 packets. After the initial packet, the highest proportion of primary caregivers were retained at month six (68%) and the lowest at month two (5%), followed by month three (43%). The number of completed packets was not associated with demographic variables, including parent age, child age, child gender, diagnosis, marital status, or income. Initial caregiver and child psychopathology symptoms, caregiver RSA, and observed ER were also not associated with the number of completed packets. Resting RSA data were available for 38.4% of primary caregivers, whereas coded interview data were

available for 64.7% of caregivers. All study procedures were approved by the institutional review boards of the universities and hospitals involved in the study.

Measures

Caregiver Physiological ER. Emotion regulation was assessed physiologically through primary caregivers' resting RSA. Five electrodes were placed on primary caregivers' torsos to measure cardiac interbeat interval (IBI) via an electrocardiogram (ECG). Mindware software was used to conduct spectral analysis of IBI data, and RSA was calculated by measuring the time between successive R-waves of the ECG. The amount of variance in the IBI spectrum was examined using spectral time-series analysis. The sum of the power densities in the IBI spectrum within the 0.33- to 0.42-Hz band over the total amount of power across all frequency bands was used as the measure of RSA (Behrman & Kliegman, 2002). This method has been well established and found to be related to child adjustment and family processes (Gottman & Katz, 1989; Katz & Gottman, 1997). It is also highly correlated with output from Porges's MXEDIT program (r = .96; Gottman, Katz, & Hooven, 1997). Resting RSA was assessed as the average RSA while the primary caregiver listened to a neutral story for two minutes.

Caregiver Observed ER. Primary caregivers' emotion regulation was measured using the Parent Meta Emotion Interview (PMEI; Katz & Gottman, 1986). Caregivers were asked to describe their attitudes and behaviors related to their own and their children's sadness, anger, and fear. The audio taped interviews lasted 45-60 minutes on average. They were coded with the Meta-Emotion Coding System (Katz, Mittman, & Hooven, 1994), which yields subscale scores for Awareness, Expressivity, Acceptance, Remediation, and Regulation of caregiver emotions. Observed caregiver ER was calculated from the average of their Regulation subscale scores for sadness, anger, and fear. Sample items in the regulation subscales include: "There is difficulty

regulating the intensity of the emotion", "Parent thinks this emotion can be dangerous" and "This emotion has been a problem/concern". Two coders scored each interview, and inter-rater reliability was calculated using one-way random interclass-correlations. Reliability was 0.70 on average, ranging from 0.61 to 0.83.

Negative Life Events. The General Life Events Schedule for Children (Sandler et al., 1986) was adapted to be used with primary caregivers. They reported on the frequency of 18 moderate to severe negative life events, such as injury of job loss, that families experienced within the past month. The scale yielded a total negative events score. The 3 month test-retest reliability for the measure is 0.75 (Gehring, 1986).

Treatment-related events. In Treatment-Related Events Questionnaire (McCaffrey, 2006), primary caregivers indicated how often treatment procedures and treatment stressors occurred within the past month (1 = never, 5 = very often). It has 24 items, with 9 consisting of cancer treatment-related procedures (e.g., chemotherapy, lumbar punctures) and 15 consisting of treatment stressors (e.g., long hospital stays). We used a summed score of overall frequency of all treatment-related events. Higher scores indicate that the family has experienced more treatment-related events in the past month.

Perceived life threat and treatment intensity. The 4-item Assessment of Life Threat and Treatment Intensity Questionnaire assessed primary caregivers' perceptions of their children's life threat and treatment severity (Stuber et al., 1997). The measure has been widely used in studies of pediatric cancer (Barakat et al., 2000). The two items measuring perceived life threat were summed to yield an overall Perceived Life Threat score, and the two items measuring treatment intensity were summed to yield an overall Perceived Treatment Intensity score. Spearman-Brown reliability coefficients for Perceived Life Threat ranged from .66 to .84,

averaging .77 across time points. Spearman-Brown reliability coefficients for Perceived Treatment Intensity ranged from .52 to .91, averaging.78 across time points.

Financial strain. The 10-item Economics In My Family Questionnaire was used (Barrera et al., 2001). Items assessing cancer-related financial stress were also included. The questionnaire asks about economic adjustments families have made and worries about finances. Items were scored on a 3-point or 5-point Likert scale and were summed (using z scores) to form an overall score of financial strain, with higher scores representing greater strain. Cronbach's alpha ranged from .83 to .91, with an average of .88 across time points.

Marital adjustment. The 35-item Dyadic Adjustment Scale (Spanier, 1976) was used to assess marital adjustment. An overall Dyadic Adjustment score was computed from the sum of all items, with higher scores indicating better adjustment. This measure has been validated for use with parents of chronically ill children (Walker et al., 1992) and was found to be sensitive to changes in marital adjustment over time in longitudinal studies (Moss et al., 2004). Scores below 107 indicate mildly distressed marital adjustment (Wood et al., 2005). Cronbach's alpha in our sample ranged from .91 to .97, with an average of .96 across the 12 time points.

Data Analytic Strategy

We tested our hypotheses using a multilevel modeling (MLM) approach with the maximum likelihood method in the nlme package of R version 3.6.3. Trajectories of change in marital adjustment were estimated from twelve time points of monthly data. All available data were included in our analyses, as multilevel modeling growth models can estimate trajectories from families with different number of observations due to missing data.

To create the best fitting model for our outcome variables, we constructed initial growth models of the average trajectory of marital adjustment. In all our analyses, time was coded from -

11 (month 1) to 0 (month 12) so that the intercept for all models reflected psychopathology at month 12. We first estimated an unconditional growth model with a linear time function. This provided us with an estimated fixed intercept, reflecting the average final level of marital adjustment, and an estimated fixed slope parameter, reflecting the average rate of change for adjustment. We then added random effects, first for the intercept and then for both the intercept and slope, testing for between family differences in final levels of marital adjustment as well as rate of change. To determine the final model, we compared model fit using the log likelihood, Akaike information criteria, and Bayesian information criteria of the models. We also examined the fit of quadratic and cubic models of change in the outcomes over time; however, due to limitations of the data, we were only able to model linear effects of time. The inclusion of random slopes and intercepts best characterized the growth model for marital adjustment, indicating that there was substantial variation in the trajectories of change in marital adjustment between families that could potentially be explained by predictors.

Next, we separately examined whether caregiver resting RSA and observed ER moderated the association between the five stressors and marital adjustment, yielding ten models in total. To test the role of ER as a moderator, the two variables were grand mean centered. The main effects of our models represent the association between the predictor variables (stressors, ER, and the interaction between the stressors and ER) and psychopathology at time 12. Interactions between our predictors and time reflect the link between ER and the trajectory of psychopathology over 12 months.

Results

More than 70% of parents reported high levels of marital adjustment at all time points. Model building and fit information is provided in Table 1. Linear growth models of marital adjustment with random intercepts and slopes had the best model fit compared to fully fixed and random intercept models. No linear effect of time was found in the final model, indicating that, on average marital adjustment did not change over time. However, the random effects indicate that there is variability in the rate of change and final levels of marital adjustment.

Our predictors (stressors, observed ER or RSA, and the interaction between the stressors and ER) were then added to the model. The inclusion of either ER measure improved the model fit (Table 2), suggesting that ER and its interaction with the stressors explains some variance in marital adjustment. RSA moderated the association between primary caregivers' perception of life threat and marital adjustment. Specifically, life threat was only associated with lower marital adjustment at month 12 among primary caregivers with low RSA ($b = -1.73$, $SE = 0.64$, $p = 0.01$). For caregivers with medium and high RSA, life threat was not significantly associated with marital adjustment (Medium: $b = -0.94$, $SE = 0.64$, $p = 0.13$; High: $b = -0.14$, $SE = 0.77$, $p = 0.85$). RSA did not moderate the association between negative life events, treatment related events, perception of life threat, treatment intensity, or financial strain and marital adjustment. Additionally, observed ER did not moderate the association between any of the stressors and marital adjustment.

Discussion

The current study builds upon previous findings that families of children with cancer who experience greater stressors show higher declines in marital adjustment (Lavi et al., 2018). We hypothesized that stressors will have less of a negative association with marital adjustment among primary caregivers who are higher in ER, measured both through RSA and observation.

Results showed that RSA moderated the association between primary caregivers' perception of life threat and marital adjustment at month twelve such that life threat was only associated with lower marital adjustment among caregivers with low RSA. However, contrary to our expectations, RSA did not significantly moderate the association between negative life events, treatment related events, life threat, treatment intensity, or financial strain and marital adjustment. Observed ER also did not significantly moderate the association between any of the stressors and marital adjustment. Given that the interaction between life threat and RSA was the only significant finding from our ten analyses, it's important to acknowledge the risk of type I error. Although we will consider the meaning of this significant finding, it should be treated as preliminary, with more research required to determine whether it is replicable.

Higher resting RSA was protective in mitigating the association between life threat, but not other stressors, and marital adjustment. This pattern of findings may be due to the unique nature of life threat as a fundamental fear for caregivers of children of cancer that they have little control over. Unlike other stressors, such as financial strain or job loss, that caregivers can take action on to address, fear of life threat must be managed through self-regulation. Therefore, individuals with higher resting RSA and thus greater capacities for ER may be more adept at managing this fear such that it does not impact their relationships with others.

Negative life events, treatment related events, and financial strain were negatively associated with month twelve marital adjustment (Lavi et al., 2018), regardless of primary caregiver observed or physiological ER abilities. This finding is in contrast to previous research linking ER with resilience to stressors and better relationship functioning (Kliewer, 2016; Lopes et al., 2005; Shorey et al., 2011). However, a systematic review of literature on RSA and romantic relationships found that, although resting RSA was consistently associated with higher

relationship quality, it was surprisingly also associated with greater relationship aggression (Han et al., 2021). The authors concluded that the effect of resting RSA on relationships may differ depending on individual and contextual factors. Thus, in this case, RSA may not have played a uniformly positive role in promoting marital adjustment and other factors may need to be taken into account to parse the role of RSA. More research is required to determine how resting RSA interacts with various contexts to impact relationship functioning.

Furthermore, although the study only examined ER in primary caregivers, both partners' ER may play into marital adjustment. Caldwell and colleagues (2019) found that one partner's low resting RSA was more strongly associated with conflict in couples when the other partner engaged in more rumination, a maladaptive ER strategy. Additionally, both women's own and their partners' cognitive ER was associated with their relationship satisfaction via the use of greater positive dyadic coping (Rusu et al., 2019). In the high-stress context of pediatric cancer, higher ER in one member of a relationship may not be sufficient to promote greater marital adjustment, particularly when partners need to rely on each other for support. Future research could examine interactions between primary and secondary caregiver ER in a pediatric cancer context to determine whether it is a better predictor of marital adjustment.

Contrary to our hypotheses, findings for observed ER differed from those for RSA, as observed ER did not moderate the association between any of the stressors, including life threat, and marital adjustment. Past research has found that caregivers' self-reported ER is influenced by the degree to which they are experiencing other stressors (Gurtovenko, 2019), whereas resting RSA has demonstrated stability over time (Bornstein & Suess, 2000; El-Sheikh, 2005), so RSA may reflect caregivers' trait-like capacities for regulation under adverse circumstances. On the other hand, the observed ER measure relies on caregivers' descriptions of their experiences of

emotions, so there be fewer differences in the relation between stress and marital adjustment based on observed ER because caregivers experiencing more stressors may score lower in observed ER, even if they have a higher trait-like capacity for ER. Future research could examine the consistency of different ER measures in various contexts as well as how they differentially predict adjustment.

Another potential reason why observed ER was not protective against the negative association between stressors and marital adjustment is that the observed ER measure does not differentiate between different types of ER strategies. Instead, the measure focuses on the frequency, intensity, and duration with which the caregivers describe experiencing negative emotions. Thus, caregivers who handle their negative emotions through suppression, denial, or avoidance may also score highly in observed ER if they do not describe any concerns with the emotion. Use of suppressive ER strategies has been linked to lower closeness with others, whereas cognitive reappraisal was linked to higher closeness (English et al., 2012). Thus, further investigation should be conducted into the role of specific ER strategies in affecting relationship functioning in stress contexts.

Strengths of the study include its longitudinal design, which allowed us to examine trajectories of marital adjustment over a year. The study also took a multi-method approach to investigating ER, deepening understanding of how facets of ER may function differently. Lastly, little research has been conducted on the link between ER and marital adjustment in caregivers of children with cancer, so the study contributed to our understanding of potential protective factors for caregivers dealing with concurrent stressors during their child's treatment.

Limitations of the study include its year-long time frame. We focused on the first year following diagnosis, as it is a particularly stressful time for families (Leavitt et al., 1999).

However, the role of ER may differ over time as families settle back into their own routines, children enter remission, and caregivers have more time to process the experience. Additionally, all measures were reported by the primary caregiver. It is unclear whether secondary caregivers differ in their perspective on the marital relationship and the role that their ER plays in adjustment. Future research could incorporate reports from secondary caregivers as well as observational measures of interactions to gain a deeper understanding of marital functioning.

The findings suggest that caregivers with higher resting RSA may be better equipped to maintain marital adjustment when faced with life threat to their child, although further replication is needed. Interventions targeting physiological ER (e.g., mindfulness meditation; Ditto et al., 2006) could be useful in promoting marital adjustment in families of children with cancer. Further research is required to investigate the role of ER in helping caregivers to maintain relationships in the face of concurrent stressors as well as other potential protective factors.

Table 1

Model Fit Indices: Marital Adjustment

	AIC	BIC	Random Intercept Variance (% Change)	Random Slope Variance (% Change)	-2*Log Likelihood	χ^2 (df)	p
1. Fully fixed	7172.16	7186.15			7166.16	2.87 (3)	.09
2. Random intercept	6326.80	6345.46	564.83		6318.80	847.36 (4)	<.001
3. Random intercept & slope	6288.78	6316.76	839.16 (48.57)	1.57	6276.78	42.02 (6)	<.001
4. Random intercept and slope, with predictors added:							
RSA x NLE	2541.58	2582.97	1042.01 (27.17)	1.29 (-17.98)	2519.58	2.48 (11)	.78
RSA x TRE	2327.40	2367.65	1113.10 (32.64)	1.51 (-3.79)	2305.40	10.47 (11)	.06
RSA x LT	2526.02	2567.37	1183.63 (41.05)	1.53 (-2.36)	2504.02	11.72 (11)	.04
RSA x TI	2532.27	2573.62	1136.70 (35.45)	1.49 (-5.09)	2510.27	5.47 (11)	.36
RSA x FS	2566.93	2608.41	1063.43 (26.73)	1.59 (1.04)	2544.93	.48 (11)	.99
Obs. ER x NLE	4202.85	4249.95	643.08 (-23.37)	1.22 (-22.43)	4180.85	11.35 (11)	.04
Obs. ER x TRE	3878.43	3924.57	698.87 (-16.72)	1.62 (3.11)	3856.43	5.03 (11)	.41
Obs. ER x LT	4148.54	4195.50	641.32 (-23.58)	1.30 (-17.32)	4126.54	6.82 (11)	.23
Obs. ER x TI	4149.70	4196.66	646.53 (-22.96)	1.29 (-17.73)	4127.70	5.66 (11)	.34
Obs. ER x FS	4217.54	4264.68	631.49 (-24.75)	1.15 (-26.48)	4195.54	10.94 (11)	.05

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