ITEM SELECTION AND VALIDATION OF THE REGULATING EMOTIONS IN PARENTING SCALE (REPS): FACTOR STRUCTURE AND MEASUREMENT INVARIANCE

by

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(Under the Direction of ANNE SHAFFER)

ABSTRACT

Parenting provides many positive experiences for mothers and fathers but also presents many challenges, such as regulating their emotions during interactions with their children. However, measures of emotion regulation (ER) within the parenting context are lacking. This study developed a measure of ER in parenting, the Regulating Emotions in Parenting Scale (REPS), using previous research and theory. Phase 1 supported a three-factor (Self-Awareness, Suppression, and Rumination) structure, and this factor structure was confirmed in Phase 2. Tests of measurement invariance and differential item functioning provided evidence of invariance by gender. Lastly, correlations between REPS factors and measures of parenting, psychopathology, and general emotion regulation were in the expected direction; correlations between the REPS and measures of parenting and psychopathology were higher in magnitude than those with general measures of emotion regulation, suggesting higher specificity. Future studies should replicate these findings in other populations and establish invariance by race and ethnicity.

INDEX WORDS: EMOTION REGULATION, PARENTING, MEASURE DEVELOPMENT, PSYCHOMETRICS

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TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

Page

CHAPTER 1

INTRODUCTION

Parenting is suffused with many positive experiences for mothers and fathers, but also presents many challenges. Parenting provides individuals with the opportunity to love, teach, and assist their children with problems as well as helping children regulate their behavior and emotions (Gottman & DeClaire, 1997). Parents also face the challenges of nurturing, protecting, and promoting their children's success in their transition into adulthood and a lifetime of independence. One obstacle to achieving these goals is that, at times, parents may struggle to regulate their own emotions during interactions with their children. Parenting often presents competing priorities in responding to parents' own immediate goals and emotions and, at times, setting parent-focused needs aside to support the needs of a child. For instance, parents may need to address their children's needs (e.g., provide food, respond to crying) while balancing their emotions about either interactions with their children themselves or with other external stimuli (e.g., driving or completing another task that requires attention, holding a conversation with partner). As such, parenting may present a unique context in which to understand and assess emotion regulation (ER) skills.

According to Belsky's process model of determinants of parenting, parents' developmental history, personality, occupational responsibilities, and social networks influence parenting, which, in turn, affect child development (Belsky, 1984). From this theoretical model, a growing literature on predictors of parenting behaviors has emerged. Little attention has been devoted to parents' ER within the parenting context and as a

predictor of parenting behavior, although research in this area is growing (Lindhiem & Shaffer, 2017; Lorber, 2012; Lorber, Del Vecchio, Feder, & Slep, 2017; Shaffer & Obradovic, 2017; Shaffer, Suveg, Thomassin, & Bradbury, 2012). With this growth, it is necessary to consider the strengths and weaknesses of currently available measures of parent ER, in order to ensure the development and use of appropriate assessment tools. The goal of this study is to develop and validate a measure, the Regulating Emotions in Parenting Scale (REPS), to quantify how parents regulate their emotions in the context of parenting. This study also aimed to evaluate the measurement invariance of the REPS by parent race, ethnicity, and gender to ensure an accurate comparison of the regulation of emotion in parenting across racial and ethnic minorities, as well as male and female parents.

Defining and Measuring Emotion Regulation

Several definitions for ER exist in the literature (Gross, 1998; Rottenberg & Gross, 2003; Thompson, 1994). Generally, however, ER is defined as the cognitive or behavioral, internal or external, and conscious or unconscious processes implicated in adjusting emotional intensity and frequency, with the aim of accomplishing one's goals or responding to the environment (Gross, 1998; Rottenberg & Gross, 2003; Thompson, 1994). In adults, ER predicts social and relationship functioning such as self-esteem and well-being (Gross & John, 2003), psychopathology (Aldao, Nolen-Hoeksema, & Schweizer, 2010), deliberate self-harm (Gratz & Tull, 2010), and substance use and substance abuse related consequences (Dvorak et al., 2014), but less is known about ER in the context of parenting.

Emotion regulation can be measured in real time using observational or physiological measures, but self-report measures are most commonly used. One existing self-report measure of ER is the Emotion Regulation Questionnaire (ERQ) (Gross & John, 2003) which assesses reappraisal and suppression, two ways of consciously responding to emotions in order to achieve control of them. The ERQ has been shown to function similarly across ethnic and gender groups (Melka, Lancaster, Bryant, & Rodriguez, 2011). The 19-item Regulation of Emotions Questionnaire (REQ) quantifies four facets of ER, including internal dysfunctional ER (e.g., suppress, harm or punish self), internal functional ER (e.g., concentrate on a pleasant activity, plan for next time), external dysfunctional ER (e.g., take out feelings on others, bully others), and external functional ER (e.g., seek support), and has primarily been validated for use with adolescents (Phillips & Power, 2007). The Difficulties in Emotion Regulation Scale (DERS) (Bardeen, Fergus, Hannan, & Orcutt, 2016; Gratz & Roemer, 2004) is a 36-item measure which has also been shown to be invariant by gender and race (White, Black American, and Asian), but not ethnicity (Ritschel, Tone, Schoemann, & Lim, 2015). The DERS comprises six factors, all of them representing problems with managing emotions: nonacceptance of emotional responses, difficulty engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. Because ER strategies can refer to both behavioral and cognitive strategies aimed at modulating emotions, the 39-item Cognitive Emotion Regulation Questionnaire (CERQ) was developed to assess cognitive ER strategies, such as self-blame, acceptance, rumination, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, catastrophizing, and blaming

others (Garnefski & Kraaij, 2007). A reduced, 18-item CERQ has also been validated for use in time-limited settings (Garnefski & Kraaij, 2006). All of these measures ask participants to report on how the statements generally apply to how they regulate their emotions.

While the previous measures are generally well-established in the literature, they are not specific to ER in the parenting context. One measure that is specific to parent populations is the Parent Meta-Emotion Interview (MEI), a semi-structured interview composed of open-ended questions regarding parents' thoughts and feelings about their own and their children's experienced emotions, such as anger, fear, or sadness (Katz & Gottman, 1986). While this measure includes a focus on parental emotions, it is conducted in an interview format that is typically audio or video recorded and then coded using the Meta-Emotion Coding System (Hooven, Katz, & Mittman, 1986). As such, this measure lacks wide accessibility and is difficult to administer in many research and clinical settings.

Parental Emotion Regulation and Child Developmental Outcomes

Studies have shown that parent ER is an important indirect (i.e., mediated by parenting behavior and characteristics) predictor of children's own emotion dysregulation, psychopathology, delayed developmental outcomes, and risk for parent-child aggression. This association has emerged in infancy, childhood, and adolescence across multiple settings. In a study among children and adolescents and their parents, mothers' use of suppression was significantly related to their children's use of suppression, although fathers' use of ER strategies were not related to any of the children's ER strategies (Bariola, Hughes, & Gullone, 2012). In another study of mothers

and their children, maternal emotion dysregulation, as measured by total scores on the DERS and observed ER during a conflict discussion task, was associated with unsupportive emotional parenting, which was, in turn, related to children's emotion dysregulation (Morelen, Shaffer, & Suveg, 2016). In another study with mothers and their preschool children, a general measure of ER was not related to more sensitive and responsive parenting, although this may have been related to the lack of a measure of ER specific to the parenting context (Shaffer & Obradović, 2017). Mothers' emotion dysregulation, as measured by total scores on the DERS, has been shown to have an effect on both their children's emotion regulation and their internalizing symptoms, but only among children who coped by internalizing negative emotions (Han & Shaffer, 2013). In a study with adolescent daughters and their mothers in Turkey, maternal ER, as measured by the DERS, was found to have a direct effect on adolescent girls' ER (Sarıtaş, Grusec, & Gençöz, 2013). A similar study replicated these findings, showing that parents' ER was related to their adolescent children's ER; it is important to note, however, that ER in both parents and adolescents was measured by the DERS, and this association was mediated by parents' invalidation of their children's emotions (Buckholdt, Parra, & Jobe-Shields, 2014). Adolescent ER in this study was also related to adolescent internalizing and externalizing symptoms.

Other studies have also examined the association between parental ER and parenting behaviors, including positive and negative parenting practices. A review of 36 studies found that decreased use of ER strategies by the mother was associated with childhood maltreatment and more harsh and reactive parenting (Crandall, Deater-Deckard, & Riley, 2015). Greater maternal ER was associated with positive parenting

and more caregiver involvement. One study showed that when ER strategies are examined separately, high levels of suppression were found to be protective against negative parenting practices, and low levels of cognitive reappraisal were associated with hostile parenting practices (e.g., criticism, negative statements toward the child), as measured by both observational and self-report data (Kohlhoff et al., 2016). In another study using the DERS to measure maternal ER as well as adolescent ER, maternal ER had an indirect effect on their daughters' ER through hostile parenting and rejection (Sarıtaş et al., 2013). Mothers low on ER were also less likely to express warmth and tenderness, although this was not related to their adolecent daughters' own ER practices. Similarly, in a study of mothers and their adolescent children, mothers' attachment style predicted their use of ER as measured by the DERS, which in turn predicted harsh parenting practices, suggesting that attachment styles are linked to harsh parenting practices through ER (Jones, Brett, Ehrlich, Lejuez, & Cassidy, 2014). Maternal emotion dysregulation as measured by the DERS has also been linked to harsh parenting practices, as well as distress reponses among mothers and their adolescent children, even after controlling for maternal symptoms of psychopathology and ethnicity (Mazursky-Horowitz et al., 2015).

Although paternal emotion dysregulation has not been studied as much as maternal emotion dysregulation, a few studies have found associations between paternal emotional dysregulation and children's externalizing symptoms (Gershy, Meehan, Omer, Papouchis, & Sapir, 2017). For example, improved ER strategies by fathers decreased their level of negative affect and reduced their levels of punitive and hostile behaviors and feelings towards their children (Gershy et al., 2017; Mazzone & Nader-Grosbois,

2017). Another study indicated that increased ER strategies among fathers helped them experience less discomfort in response to their children's expression of positive emotions (Mazzone & Nader-Grosbois, 2017). Increased paternal ER reduced fathers' minimizing responses to children's negative emotions (Mazzone & Nader-Grosbois, 2017). In a study with mothers and fathers, maternal ER, and specifically the use of suppression, predicted their children's own use of suppression; this association was not found among fathers, and did not extend to the use of reappraisal ER strategies (Bariola et al., 2012). However, it is important to note that in that study, paternal participation ($N = 207$) was lower than maternal participation ($N = 358$), and that the effect among mother-child dyads was small in magnitude (Bariola et al., 2012). In a study with mother-father couples, parent emotion dysregulation was found to partially mediate the association between parents' experience of stress and parent-child aggression, with comparable results regardless of parent gender (Rodriguez, Baker, Pu, & Tucker, 2017).

Intervention studies have also highlighted the important role of parent emotion dysregulation on child developmental outcomes. For example, the Common Sense Parenting (CSP) program is an intervention that works by teaching parents more positive ER strategies that can then be taught to their children (Mason et al., 2016). Common Sense Parenting has been found to significantly reduce children's substance abuse and school suspensions in long-term follow-ups, an effect that was mediated by improved child ER strategies. Similarly, a short-term cognitive behavioral therapy intervention, which included teaching parents more adaptive ER strategies, was found to reduce externalizing symptoms in foster children in addition to reducing parents' psychological distress and improving parenting practices (Gaviţa, David, Bujoreanu, Tiba, & Ionuţiu,

2012). Moreover, a randomized clinical trial showed that targeting emotion dysregulation using a mindfulness-based parent training significantly decreased hostility in parents toward their children, which in turn decreased children's externalizing symptoms (Gershy et al., 2017). This study noted that quantifying parents' emotion dysregulation needs may help tailor interventions to maximize effects (Gershy et al., 2017). Another recent study of Parent-Child Interaction Therapy (PCIT) reduced emotion dysregulation in parents, which was shown to be associated with a greater magnitude of improvement in children's externalizing symptoms from pre to post PCIT (Zimmer-Gembeck et al., 2018). That is, the effectiveness of PCIT was attributed to improvements in emotion dysregulation and a reduction in negative parenting practices. Although these are promising interventions that may yield significant improvements in parental ER strategies, without a specific measure of ER in the parenting context, it is unknown which specific ER strategies within the realm of parenthood may account for these effects.

Utility of a Measure of Emotion Regulation in the Parenting Context

Despite the consistent findings on the effect of parental emotion dysregulation and child outcomes, measures of ER specifically *within the parenting context* are lacking, limiting our understanding of the situations during which parents' ER may most affect the parent-child relationship and children's well-being (Lindhiem & Shaffer, 2017). Furthermore, although emotion dysregulation measured as a general trait may be linked to negative outcomes in children, it cannot be assumed that all parents who experience emotion dysregulation will struggle to regulate their emotions in interactions with their children. Similarly, it is also likely that some parents may struggle to regulate their emotions in the parenting context, particularly during periods of transition, such as the

transition to parenthood (Rutherford, Wallace, Laurent, & Mayes, 2015), but this may not necessarily generalize to other contexts and settings. Understanding these sorts of differences can paint a better picture of parenting and the factors that affect it. In other words, it is important to identify the parents who struggle with regulating their emotions in general but not with regard to parenting, along with those parents who do not struggle in general with regulating their emotions but do struggle with that in the parenting context. Because not all parents with high levels of emotion dysregulation or disorders of emotion dysregulation need interventions to regulate their emotions in interactions with their children, it is necessary to quantify ER in the specific context of parenting to determine parents' need for such interventions. In doing so, a quantitative measure of emotion dysregulation in the parenting context may have important applied implications, by facilitating the identification of more specific targets for prevention and intervention programs in parents to improve children's socioemotional outcomes. Understanding the distinct role of ER in the context of parenting may also help inform our basic understanding of the complex parent-child processes that influence typical and atypical development.

Emotion regulation in parenting has been previously conceptualized as the regulation of emotions during discipline-related encounters. However, parenting exposes individuals to a wide array of situations during which they may need to regulate their emotions, either automatically or consciously, including discipline-related encounters, responding to their children's needs, or simply being around their children while addressing external demands. During discipline-related encounters, parents may need to up- or down-regulate both positive and negative emotions to correct their children's

behavior or teach them adaptive responses. Parents' interactions with their children may also involve negative emotions beyond discipline-related encounters, such as experiencing sadness or anger about an event unrelated to the child, which may require parents to modulate those negative emotions to respond to their children, or model adaptive responses to difficult situations. During distressing situations with their children, parents may need to learn to endure distress to respond to their children or other external stimuli. Following difficult interactions with their children or external stimuli, parents may also need to regulate their emotions in order to move on or re-evaluate their responses.

A few existing measures have attempted to capture these ER strategies that parents may employ in the context of parenting. In a study of mothers of toddlers using the Parental Emotion Regulation Inventory (PERI), a measure of reappraisal and supression ER strategies in the context of discipline-specific encounters, Lorber (2012) found that reappraisal was negatively associated with overreactive and lax discipline, which was partially mediated by negative emotions. Findings from that study suggested that parents who regulate their emotions using reappraisal during discipline encounters are less likely to use overreactive and lax discipline, highlighting the importance of ER in the context of parenting (Lorber, 2012). However, as previously mentioned, parents may need to regulate their emotions with their children in other contexts beyond discipline encounters, and more typical regulatory strategies may need to be examined to better understand the role of ER. Parenting likely involves a broader range of emotions that parents may need to regulate in order to effectively respond to different goals, related to both their children and the environment while in the presence of their children. Parenting

may also elicit a number of conflicting emotions (positive and negative) that may not be accurately captured by broad measures of ER, or those that focus solely on negative emotions.

In the parenting literature, some studies have utilized novel measures designed to assess ER in the parenting context. One of these measures included the Parent Emotion Regulation Scale (PERS), which included factors related to orientation to child's emotions, avoidance of child's emotions, emotional lack of control, and acceptance of child's and parents' emotions (Pereira, Barros, Roberto, & Marques, 2017). This scale was validated in a sample of mothers from Brazil and was shown to have small to moderate correlations with the Coping with Children's Negative Emotions Scale (Fabes, Eisenberg, & Bernzweig, 1990), a measure of parents' coping responses to their children's negative emotions. The PERS was also shown to be invariant between mothers of male and female children at all levels of invariance, including configural, metric, scalar, and residual invariance, substantiating mean-level comparisons between mothers and fathers using this scale. A limitation of this measure was that it focused on how parents respond to children's behavior and emotions, and parents' ability to identify their children's emotions (Pereira et al., 2017), rather than the parents' implementation of ER strategies to regulate their own emotions.

The Parental Emotion Regulation Inventory 2 (PERI-2) is another measure of emotion regulation in parents which includes reappraisal, suppression, capitulation, and escape subscales (Lorber, 2012; Lorber et al., 2017). The PERI-2 factors were related to self-reported reactivity, physical parent-child aggression, parental maladjustment, child physical aggression, as well as global suppression and reappraisal. However, this measure

focused on parents' regulation of emotions in the context of discipline, which may not fully capture the broad range of emotions parents may experience, or ER strategies parents may need to employ while interacting with their children without necessarily disciplining them. Although these measures address ER in the parenting context, the wide range of experiences parents face may stimulate a wider range of emotions besides responding to children's emotions and disciplining their children.

Differences in Parent Emotion Regulation by Gender, Race, and Ethnicity

A measure of ER in the parenting context needs to be sensitive to possible subgroup differences, particularly in light of well-documented differences across gender and racial/ethnic groups (discussed below). While gender and racial/ethnic differences may highlight actual differences by gender and racial/ethnic identity in the use of ER strategies, it is also possible that these differences may represent nonequivalence of the constructs by gender and racial/ethnic identity. Therefore, in developing a measure of ER in the context of parenting, an important psychometric property to assess would be measurement invariance. Measurement invariance refers to similar meanings of a construct, even when assessed or studied under different conditions, at different timepoints, or in different groups (Brown, 2014; Kline, 2015). Although variance in measurement does not suggest that a scale is invalid, it suggests that any comparisons made between these groups using the scale may be invalid, as invariance may obscure and hinder meaningful comparisons across groups. Direct comparisons of ER by gender and racial/ethnic identity assume that the self-report scales used to measure ER function similarly across groups. Establishing measurement invariance by gender and racial/ethnic identity in the measurement of ER is therefore important to ensure that any differences

noted by gender and racial/ethnic identity represent actual differences in the construct, and not psychometric nonequivalence.

Gender Differences. Direct and indirect comparisons of ER and disorders of emotion dysregulation by gender show that ER varies by gender (Joseph & Newman, 2010; Nolen-Hoeksema, 2012; Sutker, Allain, Brantley, & Randall, 1982; Tamres, Janicki, & Helgeson, 2002). Existing theories of ER related to gender posit that women are more likely to use internal ER strategies, such as rumination, and that men are more likely to use suppression and avoidance (Nolen-Hoeksema, 2012). Generally, direct gender comparisons show that women do employ more ER strategies than men and it has been theorized that this may be due to women's greater self-awareness of their emotions (Joseph & Newman, 2010; Nolen-Hoeksema, 2012). However, most study findings have not supported the theory that men use more emotional suppression, but have confirmed that men do engage in more avoidant ER strategies (Tamres et al., 2002).

Racial and Ethnic Differences. Ethnic and racial minorities experience greater financial and life stress as well as decreased levels of psychological well-being compared to European Americans (Williams, Yan, Jackson, & Anderson, 1997). These social disparities may contribute to a greater prevalence of disorders of emotion dysregulation or decreased access to adequate treatment for disorders of emotion dysregulation (Alegría et al., 2008), and may be further exacerbated by disparities in access to mental health care for these groups (Wang et al., 2005). In the literature, greater use of emotional suppression has been reported in association with negative emotion among those with greater European American values (Butler, Lee, & Gross, 2007). In a different study, Asian, African, and Hispanic Americans reported greater levels of emotional suppression

compared to their European American counterparts (Gross & John, 2003). These differences, along with the increasing ethnic and racial diversity of the US population and ensuing need for inclusion of ethnically and racially diverse individuals, warrant empirical assessment of measurement qualities that contribute to the meaningful interpretation and comparisons across ethnic and racial groups, including ER strategies (Raver, 2004). In assessing these disparities, however, it is important to ensure measurement invariance across ethnic and racial groups to promote culturally appropriate assessment of these groups and preventing potential biases.

The Current Study

It is expected that the development of a new measure of ER specific to the parenting context will help enhance the accuracy, generalizability, and dissemination of research, as well as inform the study of typical and atypical development by clarifying how, specifically, parents' ER influences child outcomes. Studying these complex paths may ultimately also have implications for family-based prevention and intervention programs.

The primary goal of this study is to develop a measure, Regulating Emotions In Parenting Scale, to quantify how parents regulate their emotions in the context of parenting. Based on past research and theory, the measure includes items related to the expression and suppression of emotions while balancing the need to respond to their children (Distress Tolerance), as well as parents' strategies in effectively managing stress while needing to make a decision regarding their child or to help their children, regardless of whether or not the source of distress is the child themselves (Child-

Focused). It also assesses parents' ability to recover and reappraise after a difficult interaction with their child, rather than ruminate (Recover and Repair).

A secondary aim of this study is to establish that scores for the new measure have the same meaning across mothers and fathers, as well as across racial and ethnic groups. Testing measurement invariance by gender, race, and ethnicity would ensure that potential statistical differences found by gender, race, and ethnicity represent actual differences in ER, and not differences in how these groups may understand or perceive the measure.

A third aim is to establish construct validity of the REPS by examining associations with related parenting constructs. Specifically, it is expected that the associations between the REPS and parenting-related constructs will be larger than those between the ERQ, a general measure of emotion regulation, and parenting-related constructs. These constructs were selected based on previous studies linking them with broad definitions of emotion regulation. These included symptoms of depression (Aldao et al., 2010), childhood maltreatment (Kim & Cicchetti, 2010), parenting practices (Morris, Silk, Steinberg, Myers, & Robinson, 2007), emotion socialization (Buckholdt et al., 2014), family expressiveness (Morris et al., 2007), parent-child relationship quality (May, Reinka, Tipsord, Felver, & Berkman, 2016), and child psychopathology (Buckholdt et al., 2014).

CHAPTER 2

METHOD

Participants and Procedures

Phase 1. Potential candidates for Phase 1 were *N* = 478 men and women recruited via Amazon MTurk. Of *N* = 478 candidates, *n* = 331 met criteria for the present study. Inclusion criteria was: 1) having children under the age of 18, 2) currently living with their children, and 3) living with their children for more than one year. Participating parents were an average of 36.02 years of age (SD = 9.27), of whom 73% (*n* = 240) were women. The majority of parents (*n* = 288; 87%) were not Hispanic or Latino, and in terms of race, the majority (*n* = 269; 81%) identified as White. More than one third of participants (*n* = 137; 41%) had a bachelor's degree, and nearly half had an average personal yearly income of less than USD$50,000 (*n* = 180; 54%). Detailed demographic characteristics of the sample are provided in Table 1.

Phase 2. Potential candidates for Phase 2 were N = 1,145 men and women also recruited from Amazon MTurk but who had not participated in Phase 1. Of these, n = 662 participants met criteria (as described above). Participating parents were an average of 36.81 years of age (SD = 14.18), of whom 61% (n = 401) were women. The majority of parents (*n* = 597; 90%) were not Hispanic or Latino, and in terms of race, the majority (*n* = 496; 75%) identified as White. Nearly half of participants (*n* = 297; 45%) had a bachelor's degree, and nearly half had an average yearly personal income of less than USD$50,000 (*n* = 338; 51%). Detailed demographic characteristics of the sample are provided in Table 2.

Institutional review board approval at the University of Georgia was obtained for both phases of the study. Measures were completed using a Qualtrics survey web-based platform, which was linked from the Mturk recruitment website. On the Mturk recruitment website, a general, "open" advertisement was used for all MTurk workers who met inclusion criteria. Mturk inclusion criteria included being in the United States and having a worker approval rate ≥ 95%. Those who met Mturk and study inclusion criteria and agreed to participate were compensated USD$.50 in Phase 1 and USD$2.00 for Phase 2. Participants who participated in Phase 1 were not eligible to participate in Phase 2.

Item Development

Items assessing parenting-specific ER were written by experts in the area of parenting to ensure content validity and were informed by prior research on ER measurement and item writing guidelines. Item development was also informed by responses to open-ended questions related to ER in the parenting context in a sample of n = 50 parents, conducted prior to the current study. Based on past research, theory, and preliminary qualitative data collected from participants, a total of p = 44 items was initially generated.

Measures

Phase 1

Sociodemographic characteristics. Participants were asked to complete a sociodemographic questionnaire assessing their age, gender, race, ethnicity, educational attainment, relationship status and length, employment status, source of income, personal

income, and current living arrangements. Parenting-related questions included the number of children, and gender and age of the children.

Regulating Emotions in Parenting Scale. Participants were asked to complete the new 44-item Regulating Emotions in Parenting Scale. The scale asks participants to rate different emotion regulation strategies in the context of parenting and parent-child interactions using a 5-point Likert scale ranging from 1 (*Never*) to 5 (*Always*).

Phase 2

In Phase 2, participants completed a sociodemographic questionnaire and a 38-item REPS. In addition, they completed the following measures:

Emotion Regulation. Emotion dysregulation, as a general trait, was measured using the 10-item Difficulties in Emotion Regulation Questionnaire (Gross & John, 2003). Respondents used a 7-point Likert scale ranging from 1 (*strongly agree*) to 7 (*strongly agree*) to rate the degree to which they were experiencing or recently experienced difficulty regulating emotions ($\alpha = 0.77$). Total ERQ scores range from 10 to 70, with greater scores indicating greater use of emotion regulation strategies. The scale includes items such as, "When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about," and "When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about."

Depressive Symptoms. The Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977) was used to measure depressive symptoms. The CES-D is a 20-item measure that has been validated for use among adults in the United States and has adequate internal consistency and concurrent validity (Shinar et al., 1986; Wells, Klerman, & Deykin, 1987). This scale asks participants to rate how they felt and behaved

in the past week, with 0 = *rarely* (less than 1 day a week), up to 4 = *most or all of the time* (5 to 7 days a week). The scale includes items such as, "I felt depressed," "I had crying spells," and "I was happy" (reverse coded). Higher scores on this measure are indicative of greater depressive symptoms. Reliability for the CES-D in this sample was excellent (α = 0.94).

Childhood Maltreatment. Childhood maltreatment was assessed using the Childhood Trauma Questionnaire (CTQ) (Bernstein, Ahluvalia, Pogge, & Handelsman, 1997), a 28-item Likert scale (1 = *never true* to 5 = *very often true*) assessing emotional abuse (α = 0.91), physical abuse (α = 0.90), sexual abuse (α = 0.96), emotional neglect (α = 0.92), physical neglect (α = 0.81), and denial about abuse and neglect in childhood (validity items). Items in this scale are asked in the context of "when I was growing up…" with items including questions about being hit and bruised, or people saying mean or hurtful things. Total scores for this scale range from 25 to 125, with higher scores indicating more frequent maltreatment in childhood.

Parenting Behaviors. The Alabama Parenting Questionnaire (APQ) (Frick, 1991) was used to measure parenting practices. The APQ is a 42-item scale that assesses five parenting constructs: parental involvement (α = 0.86), positive parenting (α = 0.83), poor monitoring/supervision (α = 0.88), inconsistent discipline (α = 0.81), and corporal punishment (α = 0.82). This scale uses a 5-point Likert scale ranging from 1 (*Never*) to 5 (*Always*) to ask participants to rate how typically each item occurs in their home. Items on this scale include, "You have a friendly child," and "You threaten to punish your child and then do not actually punish him/her." Higher scores on each of the subscales indicate greater parental involvement, positive parenting, poor monitoring/supervision,

inconsistent discipline, and corporal punishment. Reliability for the full scale in this sample was acceptable (α = 0.87).

Coping with Children's Negative Emotions Scale. Emotion socialization was assessed using the Coping with Children's Negative Emotions Scale (CCNES) (Fabes et al., 1990). In this 72-item measure, parents rated how likely they were to respond in each of the emotion parenting ways using a 7-point Likert scale (1 = *very unlikely* to 7 = *very likely*). There are six subscales: Problem-focused Reactions (α = 0.84), Emotion-focused Reactions (α = 0.88), Expressive Encouragement (α = 0.90), Punitive Reactions (α = 0.89), Minimization Reactions (α = 0.90), and Distress Reactions (α = 0.63). Historically, these subscales have been collapsed into Supportive (Problem-focused Reactions, Emotion-focused Reactions, and Expressive Encouragement) and Unsupportive (Punitive Reactions, Minimization Reactions, and Distress Reactions) emotion parenting responses (Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002).

Family Expressiveness. The Family Expressiveness Questionnaire (Halberstadt, 1986) was used to assess the family's overall emotional expressiveness. Participants provide retrospective report of expressiveness and affect in the family using 40 items rated on a 9-point scale ranging from 1 = "not at all frequently in my family" to 9 = "very frequently in my family". Four subscales composed of 10 items each represent an affect dimension (positive, negative) combined with a power dimension (dominant, nondominant): Positive-Dominant (α = 0.87; PD), Positive-Nondominant (α = 0.88; PS), Negative-Dominant (ND; α = 0.90), and Negative-Nondominant (NS; α = 0.78).

Parent-Child Relationship Quality. The Child-Parent Relationship Scale (CPRS) was used to measure parents' perceptions of the child-parent relationship quality (Pianta,

1992). The CPRS includes 30 items with three subscales, including conflicts (α = 0.91), positive aspects of the relationship (closeness; α = 0.84), and dependence (α = 0.43); these items are rated on a 5-point Likert scale (1 = *definitely does not apply* to 5 = *definitely applies*). The closeness subscale quantifies the overall security in the relationship perceived by the parent by assessing his or her feelings toward their interactions with the child (e.g., "I share an affectionate, warm relationship with my child," "My child openly shares feelings with me"). Items in the dependence scale include, "My child appears hurt or embarrassed when I correct him/her."

Child Symptoms of Psychopathology. Parents completed the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997), a brief 25-item behavioral screening questionnaire that assesses conduct problems, hyperactivity-inattention, emotional symptoms, peer problems, and prosocial behavior on a 3-point Likert scale (1 = *not true* to 3 = *certainly true*). to indicate how much an item describes the child's behavior. All subscales, except prosocial behavior, are summed to generate a total difficulties score. Parents were asked to complete the SDQ for children between ages 2 and 4 (α = 0.73), 5 and 10 (α = 0.70), or 11 to 17 (α = 0.67).

Statistical Analysis

Phase 1 and 2. To describe the sample, univariate analyses were used; these included mean and standard deviations for continuous variables and frequencies for categorical variables.

Phase 1. To identify the optimal factor structure of the REPS, a series of exploratory factor analyses (EFA) were conducted using maximum likelihood estimation and promax rotation, with one to five factors specified (Costello & Osborne, 2005).

Promax rotation is the recommended extraction method when the assumption of multivariate normality is violated (Costello & Osborne, 2005), which was tested via Mardia's multivariate normality test. To determine the optimal numbers of extracted factors, the current study examined eigenvalues across all extracted factors. Model fit was evaluated using chi-square, comparative fit index (CFI), and root mean square error of approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), and Tucker Lewis index (TLI). In general, a nonsignificant chi-square test is considered to represent a good fit of the model to the observed data. However, because chi-square tests are dependent on sample sizes, other model fit indices were assessed. A CFI value represents the proportion in the improvement of the overall fit of the default model relative to a null model, with higher values representing better fit. A common heuristic is that a CFI value ≥ .95 indicates a "good" fit of the model to the observed data (Brown, 2014; Kline, 2015). Similarly, an RMSEA value ≤ .05 indicates a close fit of the model to the data (Brown, 2014; Kline, 2015). When needed, modification indices were used to assist in the selection of parameters and improve model fit. Parameters suggested by modification indices were only estimated if theoretically supported. Guidelines suggest retaining all factors that are above the eigenvalue of 1 (Yong & Pearce, 2013). In addition, item communalities (h^2), reflecting an item's explained variance for extracted factors, were examined (Yong & Pearce, 2013). Items with variance explained smaller than 20% or standardized factor loadings less than 0.45 are considered low (MacCallum, Widaman, Zhang, & Hong, 1999). Therefore, based on previous studies and general guidelines, such items were excluded to achieve an optimal factor structure (Morales, Yubero, & Larrañaga, 2016).

Once the optimal factor structure for REPS was selected, the internal consistency for the extracted factors (i.e., Cronbach's alphas) was assessed. It has been suggested that an alpha of .60 is questionable (Conway & Huffcutt, 2003), and therefore, factors with low reliability were not retained. To conduct EFA and reliability analyses, SPSS version 24 was used (SPSS, 2017).

Phase 2: Confirmatory Factor Analysis. To test the data-driven hypotheses from the EFA, a confirmatory factor analysis (CFA) was performed on the Phase 2 dataset, which will be used to verify the factor structure obtained from the EFA on an independent sample. Confirmatory factor analysis is used to verify that the measurement hypotheses align with the observed data. When a CFA is specified, the latent variables are assumed to be causing the observed data (items). In order to achieve model identification in specifying the CFA, constraints must be set. In this study, either the variance of the latent variable or one of its factor loadings will be set to one. The same model fit indices described above (CFI, TLI, SRMR, and RMSEA) will be used to evaluate the fit of the CFA.

After confirming that the specified model has adequate fit across different indices, model parameters will be interpreted. Small, nonsignificant factor loadings will be excluded, as this would indicate a lack of association with the construct. Factor loadings will be considered statistically significant at a threshold of $p < .05$ and if greater than 0.45 (MacCallum et al., 1999). If an item needs to be excluded for this reason, then re-specification of the model and re-evaluation of model fit will be necessary. Similarly, high correlations between factors suggest that the factors may need to be collapsed, which would also require re-specification of the model.

Phase 2: Measurement Invariance. Once a final, good-fitting model has been identified, different levels of measurement invariance across parent gender were tested to ensure that the factors in one group have a similar meaning in mothers and fathers. The recommended process for evaluating multiple-groups CFA invariance is to 1) conduct the CFA in each group, which in this case included mothers and fathers, 2) run tests of configural invariance (H_form), 3) run tests of equality of factor loadings or metric invariance (H_o: Λ_1=⋯Λ_G), 4) run tests of equality of indicator thresholds or scalar invariance (H_o: τ_1=⋯τ_G), and finally, 5) run tests of equality of indicator residual variances or strict invariance (H_o: θ_1=⋯θ_G). Configural invariance, which refers to whether the same CFA applies to both groups, will be tested by specifying the exact measurement model for both groups. Poor fit indicates measurement invariance does not hold, and that the same number of factors and pattern of indicator-factor loadings are not the same across groups. Construct-level metric invariance will be assessed by testing the equality of factor loadings using equality constraints across groups in one model and no constraints in the other; then, a Chi-Square difference test is used to compare models. Equality of indicator thresholds and uniqueness is tested in the same manner and will be performed as needed (Byrne, Shavelson, & Muthén, 1989).When the assumption of normality is not met, the Satorra-Bentler Scaled Chi-Square difference test is used instead (Muthén & Muthén, 2006). Lastly, if invariance is not met at the metric, scalar, or strict invariance, partial invariance can be tested by releasing the constraints on some of the items that have the largest difference between groups, or as specified by modification indices (Brown, 2014). In large sample sizes, chi-square difference tests can be supported by differences in other model fit indices, such as CFI, RMSEA, and SRMR. According to

guidelines by Chen (2007), for instance, when the sample size is $N > 300$, to test measurement invariance in factor loadings, a change of $\geq -.010$ in CFI, in addition to a change of $\geq .015$ in RMSEA or a change of $\geq .030$ in SRMR, suggests noninvariance. To test measurement invariance of intercept or residual invariance, a change of $\geq -.010$ in CFI, in addition to a change of $\geq .015$ in RMSEA or a change of $\geq .010$ in SRMR, suggests noninvariance.

Phase 2: Differential Item Functioning Analyses. Because tests of measurement invariance within the CFA framework assess scale-level invariance, item-level analyses were needed to establish invariance at the scale and item levels. Although item-level invariance analyses can be conducted using CFA, better methods under the item response theory framework exist (Meade & Lautenschlager, 2004). Differential item functioning (DIF) analyses help ensure that the properties of a measure are independent of the construct-irrelevant characteristics of individuals. Specifically, in the present study, DIF was used to measure the differences in how each item in the REPS measures functions across gender, conditioning on the level of emotion regulation in the parenting context. A major advantage of the item response theory approach over classical test theory is that the item parameters estimated under the item response theory framework, such as item discrimination and standard error of measurement, are not sample-dependent (DeMars, 2010). As such, DIF was used to determine whether different groups (in this case, gender) differ in their responses to each item of the REPS. Therefore, to test whether individual items perform similarly between gender, DIF was tested using an iterative hybrid ordinal logistic regression/item response theory approach via likelihood ratio tests using the lordif package in R (Choi, Gibbons, & Crane, 2011). In this approach, four

models are estimated, as follows:

Model 0: logit $P(ui \geq k) = \alpha k$

Model 1: logit $P(ui \geq k) = \alpha k + \beta 1 * REPS$

Model 2: logit $P(ui \geq k) = \alpha k + \beta 1 * REPS + \beta 2 * group$

Model 3: logit $P(ui \geq k) = \alpha k + \beta 1 *REPS + \beta 2 * group + \beta 3 * REPS * group$

The total DIF effect is denoted by a statistically significant likelihood ratio comparison between Models 1 and 3. Uniform DIF, which refers to consistent item performance across all score groups, is represented by a statistically significant difference between Models 1 and 2. Non-uniform DIF, on the other hand, refers to bias in favor of one group that is not constant across total scores, and is denoted by a statistically significant difference between Models 2 and 3. In large sample sizes, model comparisons are likely to overestimate DIF. Therefore, pseudo R^2 differences have been proposed as effect sizes and guidelines to detect DIF. Zumbo (1999) classified < 0.13 as negligible, between 0.13 and 0.26 as moderate, and > 0.26 as large. Because likelihood ratio tests can overidentify DIF due to the number of model comparisons (Type 1 error), particularly in large sample sizes, Monte Carlo simulations were used to determine the empirical thresholds to detect DIF. Category response curves were also estimated using the lordif package in R (Choi et al., 2011). Category response curves are an essential part of item response theory given that they plot which response options are most likely to be selected by a respondent with a certain total score. Because testing for DIF assumes unidimensionality, DIF analyses were conducted following tests of unidimensionality (i.e., factor analyses).

Construct Validity. Internal reliability was assessed using Cronbach's α reliability

coefficient; generally, α values greater than 0.70 are considered acceptable (Kline, 2015). After establishing the internal reliability of the REPS, bivariate correlations were used to measure associations with other measures of ER (ERQ), parent and child psychopathology (CES-D, SDQ), childhood abuse (CTQ), family climate (FEQ) and broad measures of parenting (APQ; CPRS) to assess concurrent and convergent validity, which will be interpreted as evidence of construct validity. That is, these analyses will support the idea that the new measure and items represent the construct of ER in the context of parenting and that it is uniquely associated with functioning above and beyond more general measures of ER. Medium to high (0.30 – 0.60) correlations with general ER are expected; a correlation higher than this between the REPS and the ERQ would indicate that these two constructs are not distinct. In a meta-analysis of ER strategies across different diagnostic categories, some ER strategies were associated with depression (Aldao et al., 2010). Effects ranged from a small (-0.17) association with reappraisal to a large association with rumination (0.55); similar correlations between the REPS and the CES-D are expected. Similarly, childhood maltreatment has been associated with emotion dysregulation in previous studies; these associations have been small (-0.10) to medium (0.34) in magnitude (Kim & Cicchetti, 2010). Lastly, in previous research, associations between parenting practices, emotion socialization (Buckholdt et al., 2014), family expressiveness, and emotion regulation have yielded correlations of small to medium magnitude and are expected to be in this range for this study (Hughes & Gullone, 2010).

CHAPTER 3

RESULTS

Exploratory Factor Analysis of the REPS (Phase 1)

Given the lack of well-established measures of the components of emotion regulation in the parenting context, using the Phase 1 dataset (n = 331), the 44 items of the REPS were submitted to EFA to identify the underlying factors influencing the data (frequencies are depicted in Figure 1). A total of 6 items were dropped due to high cross factor loadings on multiple factors (3 items loading at > .45 on more than one factor), or low factor loadings on any factors (< .45 on an item; 3 items). The final 38 items yielded the best fit with 3 factors (RMSEA = 0.058; SRMR = 0.042). Although the 4- (RMSEA = 0.094; SRMR = 0.102) and 5-factor (RMSEA = 0.053; SRMR = 0.037) solutions had a similarly good fit, these additional factors only had two or three items load onto them. Therefore, the 3-factor solution was retained (see Table 3). The emerging factors were interpreted as Self-Awareness, Cognitive Suppression, and Rumination, which were named based on existing literature (Gratz & Roemer, 2004, 2008; Gross & Levenson, 1993; Treynor, Gonzalez, & Nolen-Hoeksema, 2003) on emotion regulation and the face validity of items. With regard to internal consistency, Cronbach's alpha values ranged from 0.73 to 0.83 for each of the extracted factors, which were all in the acceptable range. Cronbach's alpha for the total scale was 0.81, which was also in the acceptable range. As shown in Table 4, self-awareness was negatively correlated with suppression (r = -0.202, p < .001), and positively correlated with rumination (r = 0.212, p < .001). Suppression was negatively correlated with rumination (r = 0.278, p < .001).

Confirmatory Factor Analysis of the REPS (Phase 2)

A series of confirmatory factor analysis models were conducted for Phase 2 to confirm the factor structure derived from the EFA. *Model 1* included the ten highest-loading items on the Self-Awareness factor on the EFA, and the five of the highest-loading items for suppression and rumination (combined as one factor) for a total of 20 items with ten items in each factor. However, *Model 1* had a poor fit to the data, CFI = 0.70, TLI = 0.660, SRMR = 0.115, and RMSEA = 0.101. In *Model 2*, a three-factor CFA was conducted instead, including ten items on self-awareness, 5 items on Rumination, and 5 items on Cognitive Suppression; this model had a substantial improvement over *Model 1*, CFI = 0.92, TLI = 0.91, SRMR = 0.074, and RMSEA = 0.061. In *Model 3*, because Item 12 appeared to be representative of *emotional* Suppression ("I can't hide my emotions to address my child's needs"), and Items 21 ("After losing my temper around my child, I feel guilty") and 22 ("After being upset around my child, I feel guilty afterward for showing negative emotions") both referenced guilt, Item 21 was retained due to its shorter length and higher factor loading. The removal of these items did not significantly affect model fit, CFI = 0.92, TLI = 0.91, SRMR = 0.070, and RMSEA = 0.055, resulting in three factors of Self-Awareness (ten items), Rumination (four items), and Cognitive Suppression (four items). In *Model 4*, one more item, Item 8 ("I will hide my emotions around my child to meet my child's needs"), was tested as a fourth factor along with Item 12 ("I can't hide my emotions to address my child's needs") as a factor believed to be representative of Emotional Suppression. The fit of this four-factor model was not an improvement over *Model 3*, CFI = 0.88, TLI = 0.86, SRMR = 0.080, and RMSEA = 0.065. Removing Item 12 and leaving Item 8 in *Model 5* was also not better

than *Model 3*, CFI = 0.87, TLI = 0.85, SRMR = 0.094, and RMSEA = 0.068. Including both Items 8 and 12 in the suppression factor in *Model 6* was also not an improvement over *Model 3*, CFI = 0.84, TLI = 0.82, SRMR = 0.100, and RMSEA = 0.073. The final 18-item model, *Model 3,* is summarized in Table 5.

Measurement Invariance (Phase 2)

Measurement invariance was first tested using factor analytic methods, which test for measurement bias at the scale level. This included testing several levels of invariance, including configural (having the same number of factors in each group), metric (similar factor loadings), scalar (similar intercepts), and strict invariance (similar amount of error). Measurement invariance by race and ethnicity could not be tested due to an insufficient number of participants in each group, which includes having at least 200 participants per group (Meade, 2005). In the first step (noted in Table 6), a three-factor structure of the REPS was supported across parent gender, $\chi 2(264) = 472.61$ ($p < 0.001$), RMSEA = 0.049, SRMR = 0.069, CFI = 0.92, and TLI = 0.90, suggesting that configural invariance held. Metric invariance was then tested by constraining factor loadings to be equal between mothers and fathers. Metric invariance was supported, ΔCFI = 0.00, ΔRMSEA = 0.00, ΔSRMR = 0.00, $\Delta\chi 2(15) = 26.23$, $p = .607$. Then, scalar invariance was tested. Scalar invariance was supported, ΔCFI = 0.01, ΔRMSEA = 0.00, ΔSRMR = 0.00, $\Delta\chi 2(15) = 26.23$, $p = .035$. Strict invariance was then tested but not supported, ΔCFI = 0.02, ΔRMSEA = 0.00, ΔSRMR = 0.02, $\Delta\chi 2(18) = 64.59$, $p < .001$.

Differential Item Functioning (Phase 2)

Item-level invariance was tested under an item response theory framework to determine item-level measurement bias, which refers to differences in item endorsements

between groups at score levels. Differential item functioning by race and ethnicity could not be tested given that the required sample size in each group to test for DIF was not reached. A total of five items (20, 21, 25, 27, and 28) of the REPS were flagged for DIF by gender at $\alpha = 0.01$. Model comparisons for Models 1 versus 2, Models 1 versus 3, and Models 2 versus 3 for all 18 items are shown in Table 7. No items showed non-uniform DIF; all forms of DIF were uniform. Specifically, Item 20 ("When I lose my temper with my child, I don't think about it much after it's over"), Item 25 ("I don't think about my negative interactions with my child"), and Item 21 ("After losing my temper around my child, I feel guilty") were endorsed more frequently by mothers (*p*s < .001). Item 27 "No matter how much I do, I feel guilty about not doing enough for my child") and 28 ("I think about my interactions with my child, wishing it had gone better") were more frequently endorsed by fathers (*p*s < .01). To confirm these model results given the large sample size and the number of model comparisons, which both increase the risk of type 1 errors, Monte Carlo simulations were conducted to determine empirical thresholds for the presence of DIF. The highest Monte Carlo simulation-derived empirical threshold from DIF-free samples was McFadden $\Delta R^2 = 0.0117$ for uniform DIF. According to this empirical threshold, only item 21 ("After losing my temper around my child, I feel guilty"; $\Delta R^2 = 0.0143$) met this threshold; the category response curve for this item is presented in Figure 2. According to Jodoin and Gierl (2001), $\Delta R^2 < 0.035$ values are considered negligible DIF.

Given that there were no problems with measurement noninvariance or DIF by gender, scores on the three factors were compared by gender. There were no differences in mean levels of Self-Awareness between men (*M* = 38.15 (*SD* = 6.62)) and women (*M*

= 38.39 (*SD* = 6.23); *p* = .634). Mean differences by gender emerged in Cognitive Suppression (*M* = 7.95 (*SD* = 3.51) versus *M* = 7.02 (*SD* = 3.37), respectively; *p* = .001) and Rumination (*M* = 12.87 (*SD* = 3.28) versus *M* = 14.13 (*SD* = 3.35); *p* < .001).

Phase 2: Construct Validity

To determine associations between REPS factors and related constructs, bivariate correlations were examined. As noted in Table 8, REPS Self-Awareness was negatively related to REPS Cognitive Suppression (-.222), child symptoms of psychopathology at ages two to four, five to ten, and eleven to seventeen (*r* = -.177, -.267, -.302), self-reported parent history of emotional (*r* = -.181) and physical neglect (*r* = -.123), and parent symptoms of depression (*r* = -.312). In terms of current parenting behavior, REPS Self-Awareness was also negatively correlated with poor supervision and monitoring (*r* = -.199), punishment (*r* = -.147), inconsistent discipline (*r* = -.299), negative family climate (*r* = -.187), and conflicts in the child-parent relationship (*r* = -.356; *p*s < .01). Self-Awareness was positively related to parent involvement (*r* = .395), positive parenting (*r* = .454), reappraisal (*r* = .557), positive family climate (*r* = .419), and positive aspects of the child-parent relationship (*r* = .464). Self-Awareness was not significantly related to REPS Rumination, childhood physical, sexual, or emotional abuse, general expressive suppression, or dependent child-parent relationship. Overall, the REPS Self-Awareness subscale appears to index positive parent functioning.

REPS Cognitive Suppression was positively related to child symptoms of psychopathology at ages two to four, five to ten, and eleven to seventeen (*r* = .466, .488, .343), self-reported parent history of emotional abuse (*r* = .146), physical abuse (*r* = .146), sexual abuse (*r* = .220), and physical neglect (*r* = .326), parent symptoms of

depression (r = .320), poor supervision and monitoring (r = .610), punishment (r = .562), inconsistent discipline (r = .487), general expressive suppression (r = .362), negative family climate (r = .363), conflicts in child-parent relationship (r = .502), and dependence in child-parent relationship (r = .211). REPS Cognitive Suppression was negatively related to REPS Rumination (r = -.108), parent involvement (r = -203), positive parenting (r = -.360), reappraisal (r = -.126), positive family climate (r = -.300), and positive aspects of the child-parent relationship (r = -.347). In summary, the Cognitive Suppression subscale appeared to be associated with more negative aspects of parenting to a higher degree than Rumination.

REPS Rumination was positively related to child symptoms of psychopathology at ages two to four, five to ten, and eleven to seventeen (r = .169, .111, .256), self-reported parent history of emotional abuse (r = .186), physical abuse (r = .152), sexual abuse (r = .117), and emotional neglect (r = .117), parent symptoms of depression (r = .320), parent involvement (r = .08), positive parenting (r = .171), inconsistent discipline (r = .223), expressive suppression (r = .145), negative family climate (r = .228), positive family climate (r = .127), conflicts in the child-parent relationship (r = .206), positive aspects of the child-parent relationship (r = .08), and dependent child-parent relationship (r = .238). Poor parent supervision and monitoring, punishment, and reappraisal were not related to REPS Rumination. Although REPS Rumination was similarly associated with more negative aspects of parenting, the magnitude of correlations between Rumination and child psychopathology was lower than those between Cognitive Suppression and child psychopathology. In addition, REPS Rumination was associated some positive aspects of parenting.

CHAPTER 4

DISCUSSION

Parenting presents many opportunities during which emotion regulation skills may be better understood, but previous studies have measured parent emotion regulation using either broad measures of emotion regulation or measures of emotion regulation targeting specific parenting situations. Specific measures have included those to discipline (Lorber, 2012; Lorber et al., 2017) or emotion socialization (Pereira et al., 2017). The REPS is a new scale that attempts to capture how parents regulate their emotions in parenting in a broader context. The two phases of this study included scale development and scale validation. The development of the scale included the generation of items, item revision, and analysis of content validity. The primary goals of this study were to establish a preliminary factor structure of the REPS in Phase 1 and evaluate the replicability of the extracted factors in Phase 2. Additional goals of Phase 2 included establishing measurement invariance by gender, race, and ethnicity, and evaluate associations between REPS factors and related constructs, as well as similar (but not identical) measures, to evaluate its validity.

REPS Factor Structure

Findings from Phase 1 provided evidence for a multidimensional, three-factor structure of the REPS and suggested adequate reliability; the emerging factors included Self-Awareness, Cognitive Suppression, and Rumination. The Self-Awareness factor was

composed of items reflecting parents' ability to recognize, and set aside, their emotions to respond to their children. Cognitive Suppression items reflected parents' ability to recover from negative interactions with their children. Rumination items were related to parents' feelings and thoughts of guilt about their negative interactions with their children or about their ability to parent. These items were developed based on item writing guidelines, input from experts on parenting research, and qualitative data collected from parents. Phase 2 subsequently confirmed the three-factor structure of REPS suggested by Phase 1 and its reliability remained adequate in the second sample. Associations with related parenting constructs and measures of psychopathology and general emotion regulation provided preliminary evidence of construct validity.

Model fit indices, factor loadings, and correlations among factors indicated that the subscales measured three distinct but related constructs of emotion regulation in parenting: Self-Awareness, Rumination, and Suppression. While three different dimensions of the REPS were initially hypothesized to be Distress Tolerance, Child-Focused, and Recover and Repair, these factors were renamed to reflect the emergent content of the scales. Previous measures of emotion regulation in the parenting context have similarly conceptualized emotion regulation as reappraisal, suppression, escape, and capitulation (Parental Emotion Regulation Inventory) (Lorber, 2012), and parents' orientation to the child's emotions, parents' avoidance of the child's emotions, parents' lack of emotional control, and parents' acceptance of the child's and their own emotions (Parental Emotion Regulation Scale) (Pereira et al., 2017). There is lack of consensus in the literature regarding whether emotion regulation should refer to voluntary or involuntary processes, but for the purposes of quantification, self-report measures may be

limited to measuring voluntary and intentional strategies used to modulate emotions, given that they require self-awareness of one's attempts—or lack of attempts—to regulate emotions. As such, emotion regulation in parenting in this context was conceptualized as voluntary and deliberate thoughts and actions parents may engage in to regulate emotions, based on previous literature, measures, and qualitative data collected from parents. To this end, the final set of items of the REPS appeared face valid as well, referencing voluntary processes aimed at regulating emotions. Nevertheless, in addition to collecting qualitative data to guide item development, conducting focus groups may have provided richer data to provide more in-depth perspectives and generate a more comprehensive set of items related to other possible emotion regulation strategies that were not captured by the methods used in the present study.

REPS Measurement Bias

In validating a measure, measurement invariance is an important psychometric property which refers to the stability in the meaning of a scale across groups (such as demographic groups) or occasions (such as the measurement of a construct over time). Although there are an infinite number of groups by which a scale may be invariant, it is most important to perform these tests in groups in which the scale is more likely to be compared by means, in order to ensure that such comparisons are an accurate reflection of mean differences.

Measurement invariance was tested by parent gender. Although the measure did not reach the strictest level of invariance by gender—equality of error variances, which refers to whether the groups share a similar number of measurement effects not accounted for by the common factors—configural, metric, and scalar invariance were

supported. Additional analyses of differential item functioning by gender of the REPS indicated that measurement bias at the item level by gender was minimal, suggesting that the items were interpreted similarly by mothers and fathers. The items and total scores of the REPS appeared to have a similar meaning between mothers and fathers, with the exception of strict invariance and negligible differential item functioning of one item, "After losing my temper around my child, I feel guilty." The differential item functioning of this item was uniform, indicating that women's endorsement of this item was higher than men's endorsement at all total score levels of the REPS. The consistent higher endorsement of this item by women may be related to women's higher rates of rumination, which are widely known. Gender differences in rumination have been consistently reported across a number of studies (Johnson & Whisman, 2013), and the uniform DIF seen for this item may reflect these gender differences. Therefore, despite being flagged for DIF by model comparisons and Monte Carlo simulation thresholds, this item was not removed from the scale.

It was also a goal of this study to establish measurement invariance by ethnicity and race to minimize the bias of the measure among ethnic and racial minorities using tests of invariance by scale (factor analytic method) and items (item response theory method). However, there was an insufficient number of participants belonging to non-Hispanic and non-White ethnicity and race to conduct such analyses. For differential item functioning analyses, a sample size of n = 200 per group are needed, and sample size recommendations for factor analytic tests of measurement invariance tend to fall in a similar range (Scott et al., 2009). Therefore, measurement invariance in these groups could not be established because there were fewer than 200 participants in each of the

racial and ethnic groups. Given the growing ethnic and racial diversity of the United States population, future studies should examine the measurement invariance of the REPS by race and ethnicity.

Construct Validity of the REPS

Associations between REPS factors and general emotion regulation in Phase 2 were small to moderate, as expected; these correlations were low enough to suggest that parent emotion regulation and general emotion regulation are likely separate constructs. Correlations between child psychopathology and REPS factors were stronger in magnitude (.10 to .48) than those between child psychopathology and ERQ factors (.09 to .39). In fact, all correlations between each REPS factor and child psychopathology in all age groups were statistically significant; however, correlations between reappraisal and child psychopathology in younger children (ages 2 to 4 and 5 to 10) were not statistically significant. These findings are consistent with previous research, in which general maternal emotion dysregulation measured by the DERS was associated with child internalizing symptoms (Han & Shaffer, 2013). Among correlated pairs of variables related to parenting (APQ) and child-parent relationship with emotion regulation, REPS factors' correlations were also stronger in magnitude than those with ERQ factors. These findings provide preliminary evidence for the utility of a more specific measure to examine the role of emotion regulation in parenting on child psychopathology. Future studies may evaluate the predictive validity of the REPS in longitudinal or experimental studies to determine whether REPS factors are more likely to predict parent or child psychopathology or parenting practices than broader measures of emotion regulation.

These initial findings appear to support construct validity of the REPS, though further research is warranted.

In addition to being in the expected magnitude, correlations between REPS factors and related constructs were also generally in the expected direction. One unexpected association was that some of the REPS and ERQ factors were not associated with all forms of childhood maltreatment, as in previous research (Wolff et al., 2016). Compared to previous studies, this sample had a greater proportion of men, which is a feature of MTurk samples. It has been shown that men, despite experiencing adverse childhood events, may perceive CTQ items differently than women; as such, the CTQ is likely to identify more women as being victims of maltreatment than men (Thombs, Lewis, Bernstein, Medrano, & Hatch, 2007). It is possible that the higher proportion of men in this sample, as well as potential psychometric problems with the CTQ by gender, may have influenced the lack of association seen in this study between emotion regulation and childhood maltreatment.

The Cognitive Suppression factor of the REPS referred to suppressing thoughts related to how the parent may have responded to their child or how the parent could have responded to the child instead. In comparison to cognitive suppression, emotional suppression refers to the inhibition of emotional responses to arousing stimuli. Items related to emotional suppression included those that may have led the parent to suppress emotional reactions to respond to their child's needs, such as Item 8, "I will hide my emotions around my child to meet my child's needs", or Item 12, "I can't hide my emotions to address my child's needs". In the present sample, including these two items as a separate factor of emotional suppression did not provide an adequate fit to the data;

however, this may have been related to the low number of items in the factor. Factors with fewer items tend to be unstable (Brown, 2014). Therefore, future studies should include additional items related to emotional suppression to determine the need for a fourth factor of emotional suppression.

Limitations and Future Directions

There are a number of considerations based on findings from the current study for future studies attempting to quantify and conceptualize emotion regulation in parenting. A number of items that were initially included referenced worry ("I can control my worries about my child's future" and "If I have other worries on my mind, I have a hard time focusing on what my child needs") or lack of concentration ("After a difficult interaction with my child, I can't concentrate"), but did not load onto any of the factors that were retained and generally had weak factor loadings. It is possible that these items may not have been appropriate for inclusion in the scale due to overlap with symptoms of psychopathology, such as symptoms of anxiety or depression, and likely do not reference attempts to regulate emotion, but rather responses to emotional experiences. In future psychometric evaluations of the REPS, these items should be excluded.

Item endorsements were generally low for "Never" or "Always" in a number of items. There is a lack of consensus on the optimal number of options for rating scales. Whereas having more options may offer greater sensitivity and reliability, options that are not frequently endorsed may not provide any information in smaller samples. Not including a midpoint response option (e.g., "Sometimes"), which is often overselected, may be a solution that forces participants to respond more to non-neutral items, but this practice is still disputed (Weems & Onwuegbuzie, 2001). Evaluating the performance of

the REPS with a different number of options, such as without a midpoint option, may be necessary to determine the optimal number of response options for the REPS.

In developing items for the REPS, a number of reverse-coded items were included. Although reverse-coded items can be useful as validity checks and to encourage participants to answer on the full spectrum of the construct in question, a number of measurement problems with reverse-coded items have been noted in previous research. From a practical perspective, reverse-coded items may, for instance, cause confusion in participants who have generally habituated to positively or negatively worded items when a change in polarity occurs (Herche & Engelland, 1996). Confusion in participants may cause frustration and lead participants to respond impulsively and may not be appropriate for inclusion in samples with low literacy or low cognitive functioning. Reverse-coded items may appear to be more "diagnostic" and gain greater attention from participants, potentially biasing participants' perceptions about what the scale appears to measure. Psychometrically, reverse-coded items also affect the factor structure of scales, causing scales to appear multidimensional without there necessarily being multiple dimensions. Mean scores have also been shown to be significantly different when positively-worded items are included compared with negatively-worded items, and responses obtained from participants may be different depending on the phrasing used (Weems & Onwuegbuzie, 2001).

A limitation specific to this study was the collection of data via Amazon MTurk, which may have affected the generalizability of the findings due to being limited to individuals who have self-selected themselves into a web-based research platform. Despite this limitation, using Amazon MTurk provided a number of advantages. First,

Amazon MTurk samples have been found to be more diverse than other Internet samples. Because there is a significant number of men participating in Amazon MTurk research, MTurk provided access to fathers, who are typically understudied in parenting research. In addition, data collection via Amazon MTurk facilitated the completion of the survey using a web-based platform, minimizing participant burden and maximizing anonymity. Because Amazon MTurk does not require individuals to identify themselves to researchers, parents may have also felt more comfortable responding on an anonymous web-based platform than an in-person format, which may have enhanced self-disclosure. In addition, data quality, as measured by internal consistency reliability and test-retest reliability, has not been shown to be affected by data collection using Amazon MTurk in previous studies (Buhrmester, Kwang, & Gosling, 2011). The reliability of the data in this study was not affected, as evidenced by Cronbach's alpha values ranging from adequate to excellent for all measures.

An additional limitation of this study was the limited recruitment of ethnically and racially diverse parents, which precluded the evaluation of measurement invariance by race and ethnicity. A larger sample size and targeted recruitment may be needed in future studies to establish measurement invariance of the REPS by race and ethnicity. Continued validation of the REPS is needed to examine its properties across multiple samples and with diverse populations to establish group norms. The factor structure of the REPS may also benefit from replication in a clinical sample of parents, as this may help differentiate how emotion dysregulation in psychopathology may differ from emotion dysregulation in parenting. As previously noted, focus groups may provide richer and more comprehensive data from parents' perspectives about the existing items

in the REPS and about the development of more items in other areas of emotion regulation in parenting that may not have been captured by the REPS.

Despite the limitations noted above, a self-report scale that measures parent emotion regulation is an essential first step towards developing better measures of this construct. The development of the REPS contributes to the quantification of a construct that has largely existed in the realm of theory and the evolving conceptualization of emotion regulation in parenting. The development of the REPS also had a number of strengths relative to other measures in the field of parenting, including using factor analytic, item response theory analyses and two validation samples to ensure strong psychometric properties (Hurley, Huscroft-D'Angelo, Trout, Griffith, & Epstein, 2014). Although attempts at quantifying the construct of emotion regulation in parenting have been made using the PERS and the PERI-2, these measures are specific to responding to children's emotions (Pereira et al., 2017), which tap into emotion socialization and emotion regulation during discipline-related encounters (Lorber, 2012; Lorber et al., 2017). These similar measures were not included in the present study to minimize participant burden and fatigue, but the REPS should be compared to these other scales to establish criterion validity.

Scale construction is an iterative process, involving several phases of item development and modification, conceptualization, and analysis (Clark & Watson, 1995). Future research should continue to evaluate its validity and explore problems with the current scale. Findings from such studies could inform subsequent conceptualizations of emotion regulation in parenting. Additionally, more studies are needed to assess the

performance of the REPS in other samples, which may ultimately result in rewriting of items to refine their psychometric properties.

Clinical Implications

Although this study did not test the factor structure and validity of the REPS as a clinical measure, there are several potential implications for researchers and practitioners from its development. Because the REPS had correlations of a stronger magnitude with measures of parenting, and child and parent psychopathology, the REPS may be more specific than broad measures of emotion regulation in prevention and intervention programs. Parents may frequently need to suppress or monitor their emotions to respond to their children's needs, tolerate distress, or re-consider their responses during or following parent-child encounters. The REPS may help identify adaptive emotion regulation strategies that can be taught to parents during these circumstances, or provide guidance for clinical recommendations or programmatic decisions for interventions for parents. Monitoring emotion regulation in parenting may be particularly important among parents of children with psychopathology, given that both child psychopathology and parent emotion dysregulation may influence each other. Future research on the REPS may confirm its utility as a clinical measure for both assessment and intervention.

Table 1

Demographic and Psychosocial Characteristics of the Phase 1 Sample (N = 331)

Characteristic	Mean (SD) n(%)
Age	36.02 (9.27)
Biological Sex	
Male	96 (25.5%)
Female	280 (74.5%)
Ethnicity	
Hispanic	43 (11.4%)
Not Hispanic	333 (88.6%)
Race	
American Indian/Native American	10 (2.7%)
Asian	14 (3.7%)
Black or African American	28 (7.4%)
Native Hawaiian or Pacific Islander	1 (0.3%)
White	304 (80.9%)
Biracial	8 (2.1%)
Multiracial	11 (2.9%)
Educational Attainment	
High School (or GED)	53 (14.1%)
Some College	127 (33.8%)
Bachelor's Degree	142 (37.8%)

Master's Degree	47 (12.5%)
Doctoral Degree	7 (1.9%)
Relationship Status	
Single	40 (10.6%)
Married	262 (69.7%)
Remarried	3 (0.8%)
Long-term domestic partnership	47 (12.5%)
Divorced	14 (3.7%)
Widowed	5 (1.3%)
Separated	5 (1.3%)
Average Yearly Income	
$0 - $5,000	31 (8.2%)
$5,000 - $10,000	11 (2.9%)
$10,000 - $20,000	29 (7.7%)
$20,000 - $30,000	49 (13.0%)
$30,000 - $40,000	42 (11.2%)
$40,000 - $50,000	44 (11.7%)
$50,000 - $60,000	47 (12.5%)
$60,000 - $70,000	23 (6.1%)
$70,000 - $80,000	27 (7.2%)
$80,000 or more	73 (19.4%)

Table 2

Demographic and Psychosocial Characteristics of the Phase 2 Sample (N = 662)

Characteristic	Mean (SD) n(%)
Age	36.81 (14.18)
Biological Sex	
Male	261 (39.4%)
Female	401 (60.6%)
Ethnicity	
Hispanic	65 (9.8%)
Not Hispanic	597 (90.2%)
Race	
American Indian/Native American	8 (1.2%)
Asian	44 (6.6%)
Black or African American	81 (12.2%)
Native Hawaiian or Pacific Islander	3 (0.5%)
White	496 (74.9%)
Biracial	11 (1.7%)
Multiracial	19 (2.9%)
Educational Attainment	
High School (or GED)	57 (8.6%)
Some College	201 (30.4%)
Bachelor's Degree	297 (44.9%)

Master's Degree	90 (13.6%)
Doctoral Degree	17 (2.6%)
Relationship Status	
Single	97 (14.7%)
Married	453 (68.4%)
Remarried	8 (1.2%)
Long-term domestic partnership	61 (9.2%)
Divorced	41 (6.2%)
Separated	2 (0.3%)
Average Yearly Income	
$0 - $5,000	33 (5.0%)
$5,000 - $10,000	24 (3.6%)
$10,000 - $20,000	51 (7.7%)
$20,000 - $30,000	77 (11.6%)
$30,000 - $40,000	78 (11.8%)
$40,000 - $50,000	75 (11.3%)
$50,000 - $60,000	81 (12.2%)
$60,000 - $70,000	59 (8.9%)
$70,000 - $80,000	57 (8.6%)
$80,000 or more	127 (19.2%)

Table 3

Exploratory Factor Analysis of the Regulating Emotions in Parenting Scale (N = 331)

	M (SD)	Self-Awareness	Suppression	Rumination
1. When I'm upset while with my child, I'm able to change what I'm thinking about	3.47 (0.99)	**0.566**	-0.188	-0.109
2. I will hide my emotions around my child to meet my child's needs	3.68 (0.94)	**0.512**	0.190	-0.197
3. I can decide when to set my emotions aside to respond to my child	3.90 (0.87)	**0.613**	-0.006	-0.341
4. I can tell what my child needs even when I'm upset	4.09 (0.84)	**0.586**	0.087	-0.441
5. I think about whether or not to show how I'm feeling when relating to my child	2.60 (0.98)	**-0.572**	-0.170	-0.066
6. If I'm feeling upset about something, I set aside my emotions to respond to my child	3.86 (0.90)	**0.759**	0.025	-0.280
7. I pay attention to my emotions when I'm with my child	3.91 (0.89)	**0.669**	-0.040	-0.228

8.	I can help my child even when I'm upset	4.08 (0.91)	**0.537**	0.034	-0.334
9.	When I'm upset with my child, I put the situation into perspective before I react	3.65 (0.89)	**0.735**	-0.261	-0.056
10.	When my child is being difficult, I remind myself that my frustration will pass	3.74 (0.96)	**0.591**	-0.187	-0.101
11.	When my child needs my help, I set my emotions aside to help them	4.04 (0.83)	**0.699**	-0.048	-0.391
12.	After being upset around my child, I know I'll have a chance to correct things	3.97 (0.92)	**0.514**	-0.012	-0.172
13.	After being upset with my child, I'm ready to move on	3.50 (1.10)	**0.467**	-0.134	0.133
14.	When my child upsets me, I take time to figure out what I'm really feeling	3.51 (1.00)	**0.706**	0.050	0.012
15.	I can control my worries about my child's future	3.44 (1.06)	**0.511**	-0.377	0.049
16.	When I'm upset while with my child, I tell them how I'm feeling and why	3.57 (1.00)	**0.481**	0.112	-0.002

17. I take care of my emotions before I respond to my child	3.35 (0.99)	**0.668**	-0.123	0.057
18. I can respond to my child's needs despite feeling upset or stressed	4.05 (0.84)	**0.661**	-0.090	-0.429
19. When my child has a problem and I know what the solution is, I'm able to manage my emotions to help solve the problem	4.17 (0.83)	**0.600**	0.068	-0.428
20. I feel like I can handle most problems in the care of my child regardless of how I feel	4.13 (0.88)	**0.615**	-0.007	-0.422
21. After losing my temper around my child, I feel guilty*	1.96 (1.04)	-0.056	**-0.804**	0.205
22. After being upset around my child, I feel guilty afterward for showing negative emotions*	2.29 (1.13)	-0.032	**-0.768**	0.110
23. After a difficult interaction with my child, I can't concentrate	3.20 (1.10)	0.164	**-0.540**	-0.377
24. When I don't feel good about how I interacted with my child, I dwell on it longer than I should	2.87 (1.16)	-0.004	**-0.683**	-0.204
25. I think about my mistakes or failures as a parent	2.37 (1.07)	-0.015	**-0.715**	-0.044

26. No matter how much I do, I feel guilty about not doing enough for my child	2.66 (1.23)	0.062	**-0.736**	-0.048
27. I think about my interactions with my child, wishing it had gone better	2.57 (1.04)	-0.003	**-0.710**	-0.092
28. It's hard to manage my emotions when my child has a problem and I don't know how to help them	3.38 (1.07)	0.276	-0.387	**-0.520**
29. I don't think about my negative interactions with my child*	4.13 (1.10)	-0.133	0.289	**-0.721**
30. I can't help my child when I'm upset	4.06 (1.04)	0.195	-0.110	**-0.705**
31. After losing my temper with my child, I don't think about it much*	1.94 (1.11)	0.048	-0.292	**0.758**
32. When my child needs my help, I feel overwhelmed or don't know what to do	3.97 (0.94)	0.209	-0.277	**-0.687**
33. When I don't feel good about how I interacted with my child, I take it out on someone else	4.05 (1.04)	0.143	-0.240	**-0.647**
34. I can't change what I think when I'm upset with my child	3.72 (1.03)	0.257	-0.170	**-0.663**

35. I can't hide my emotions to address my child's needs	3.88 (1.03)	0.328	-0.119	**-0.737**
36. There's little I can do after a negative interaction with my child	4.18 (1.08)	0.144	-0.010	**-0.781**
37. If I have other worries on my mind, I have a hard time focusing on what my child needs	3.78 (1.08)	0.259	-0.275	**-0.645**
38. When I lose my temper with my child, I don't think about it much after it's over*	4.06 (1.09)	-0.037	0.235	**-0.775**
Reliability (alpha)		.831	.729	.821
Eigenvalue		8.448	4.335	3.459
Variance explained		35.483	17.861	10.432

Note. *Denotes reverse-coded item.

Table 4

Correlations, and Descriptive Statistics for the REPS (N = 331)

	1	2	3
1. Self-Awareness	—		
2. Suppression	-0.202***	—	
3. Rumination	0.212***	-0.278***	—
M (SD)	58.26 (8.11)	16.28 (4.50)	22.62 (5.95)

Note. Spearman correlations.

*p < 0.05, **p < 0.01, ***p < 0.001.

Table 5

Confirmatory Factor Analysis of the REPS (N = 662)

	M (SD)	Self-Awareness	Suppression	Rumination
1. I can decide when to set my emotions aside to respond to my child	4.01 (0.85)	0.637		
2. If I'm feeling upset about something, I set aside my emotions to respond to my child	3.88 (0.94)	0.669		
3. I pay attention to my emotions when I'm with my child	3.92 (0.9)	0.578		
4. When I'm upset with my child, I put the situation into perspective before I react	3.65 (0.91)	0.656		
5. When my child needs my help, I set my emotions aside to help them	4.07 (0.88)	0.783		
6. When my child upsets me, I take time to figure out what I'm really feeling	3.44 (1.05)	0.431		
7. I take care of my emotions before I respond to my child	3.32 (1.02)	0.406		

8. I can respond to my child's needs despite feeling upset or stressed	4.05 (0.87)	0.776		
9. When my child has a problem and I know what the solution is, I'm able to manage my emotions to help solve the problem	4.12 (0.86)	0.737		
10. I feel like I can handle most problems in the care of my child regardless of how I feel	4.11 (0.91)	0.709		
11. After losing my temper with my child, I don't think about it much	4.04 (0.83)		0.807	
12. There's little I can do after a negative interaction with my child*	3.97 (0.92)		-0.714	
13. When I lose my temper with my child, I don't think about it much after it's over	3.50 (1.10)		0.746	
14. I don't think about my negative interactions with my child	3.51 (1.00)		0.735	
15. After losing my temper around my child, I feel guilty	3.97 (1.05)			0.491
16. I think about my mistakes or failures as a parent	3.39 (1.05)			0.683

17. No matter how much I do, I feel guilty about not doing enough for my child	3.03 (1.27)			0.782
18. I think about my interactions with my child, wishing it had gone better	3.24 (1.04)			0.731
Reliability (alpha)		.87	.81	.76

Note. *Denotes reverse-coded item.

Table 6

Tests of Measurement Invariance of the REPS by Parent Gender (N = 662)

	χ^2	*df*	χ^2_{diff}	Δ*df*	RMSEA (90% CI)	SRMR	CFI	TLI
Measurement Invariance								
Equal form (Configural Invariance)	472.61***	264			0.049 (0.042, 0.056)	0.069	0.92	0.90
Equal factor loadings (Metric Invariance)	485.55***	279	12.94	15	0.047 (0.040, 0.054)	0.075	0.92	0.91
Equal indicator intercepts (Scalar Invariance)	511.78***	294	26.23*	15	0.047 (0.040, 0.054)	0.077	0.91	0.91
Equal indicator error variances (Strict Invariance)	576.37***	312	64.59***	18	0.051 (0.044, 0.057)	0.100	0.89	0.90

Note. χ^2_{diff} = nested difference. RMSEA = root mean square of error approximation. 90% CI = 90% confidence interval for RMSEA. SRMR = standardized root mean square residual. CFI = comparative fit index. TLI = Tucker-Lewis Index.

*p < 0.05, **p < 0.01, ***p < 0.001.

Table 7

Differential Item Functioning (DIF) by Parent Gender of the REPS

Item	Uniform DIF Models 1 vs. 2 *p*	McFadden Pseudo ΔR^2	Total DIF Models 1 vs. 3 *p*	Non-Uniform DIF Models 2 vs. 3 *p*
1. I can decide when to set my emotions aside to respond to my child	0.773	--	0.911	0.748
2. If I'm feeling upset about something, I set aside my emotions to respond to my child	0.222	--	0.111	0.089
3. I pay attention to my emotions when I'm with my child	0.124	--	0.070	0.086
4. When I'm upset with my child, I put the situation into perspective before I react	0.400	--	0.469	0.369
5. When my child needs my help, I set my emotions aside to help them	0.070	--	0.050	0.101

6. When my child upsets me, I take time to figure out what I'm really feeling	0.739	--	0.875	0.693
7. I take care of my emotions before I respond to my child	0.040	--	0.114	0.733
8. I can respond to my child's needs despite feeling upset or stressed	0.349	--	0.544	0.560
9. When my child has a problem and I know what the solution is, I'm able to manage my emotions to help solve the problem	0.274	--	0.449	0.525
10. I feel like I can handle most problems in the care of my child regardless of how I feel	0.583	--	0.814	0.740
11. After losing my temper with my child, I don't think about it much	0.012	--	0.032	0.469
12. There's little I can do after a negative interaction with my child*	0.058	--	0.085	0.250
13. When I lose my temper with my child, I don't think about it much after it's over	**< 0.001**	0.0073	**0.002**	0.844

14. I don't think about my negative interactions with my child	**< 0.001**	0.0087	**0.001**	0.959
15. After losing my temper around my child, I feel guilty	**< 0.001**	0.0143	**< 0.001**	0.145
16. I think about my mistakes or failures as a parent	0.015	--	0.044	0.533
17. No matter how much I do, I feel guilty about not doing enough for my child	**< 0.001**	0.0087	**< 0.001**	0.032
18. I think about my interactions with my child, wishing it had gone better	**0.001**	0.0061	**0.002**	0.416

Note. Bold denotes statistically significant model comparison at $\alpha = 0.01$.

Table 8

Associations between the REPS and related constructs

	REPS SA	REPS S	REPS R	CP 2-4	CP 5-10	CP 11-17	CTQ	CESD	APQ I	APQ S	APQ Pu	APQ Po	APQ In	ERQ R	ERQ S	FEQ N	FEQ P	CPRS C	CPRS P	CPRS D
REPS SA	—																			
REPS S	-.222**	—																		
REPS R	0.021	-.108**	—																	
CP 2-4	-.177**	.466**	.169*	—																
CP 5-10	-.267**	.488**	.111*	.714**	—															
CP 11-17	-.302**	.343**	.256**	.639**	.596**	—														
CTQ	-0.071	.247**	.151**	.447**	.416**	.429**	—													
CESD	-.312**	.320**	.343**	.530**	.431**	.542**	.566**	—												
APQ I	.395**	-.203**	.080*	-0.099	-.282**	-.214**	-.115**	-.222**	—											
APQ S	-.199**	.610**	-0.021	.536**	.574**	.387**	.405**	.381**	-0.07	—										
APQ Pu	-.147**	.562**	0.034	.486**	.540**	.498**	.423**	.435**	-.092*	.649**	—									
APQ Po	.454**	-.360**	.171**	-.258**	-.374**	-.175**	-.206**	-.228**	.682**	-.355**	-.240**	—								
APQ In	-.299**	.487**	.223**	.515**	.482**	.540**	.332**	.451**	-.111**	.557**	.559**	-.217**	—							
ERQ R	.557**	-.126**	0.026	-0.085	-0.097	-.225**	-.117**	-.324**	.383**	-0.044	-0.062	.348**	-.149**	—						
ERQ S	-0.03	.362**	.145**	.333**	.388**	.295**	.212**	.284**	-.097*	.325**	.310**	-.140**	.308**	0.035	—					

FEQ N	-.187**	.363**	.228**	.488**	.490**	.580**	.318**	.463**	0.004	.464**	.464**	-0.051	.492**	-0.061	.269**	—				
FEQ P	.419**	-.300**	.127**	-0.095	-.261**	-.234**	-.125**	-.220**	.521**	-.164**	-.133**	.557**	-.145**	.418**	-.195**	.108**	—			
CPRS C	-.356**	.502**	.206**	.593**	.621**	.672**	.364**	.508**	-.213**	.532**	.518**	-.298**	.635**	-.187**	.374**	.571**	-.226**	—		
CPRS P	.464**	-.347**	.082*	-.239**	-.361**	-.352**	-.158**	-.250**	.501**	-.325**	-.226**	.625**	-.239**	.376**	-.161**	-.104*	.551**	-.358**	—	
CPRS D	-0.009	.211**	.238**	.338**	.290**	.361**	.176**	.288**	0.061	.243**	.245**	0.055	.350**	0.048	.243**	.349**	0.07	.444**	.131**	—

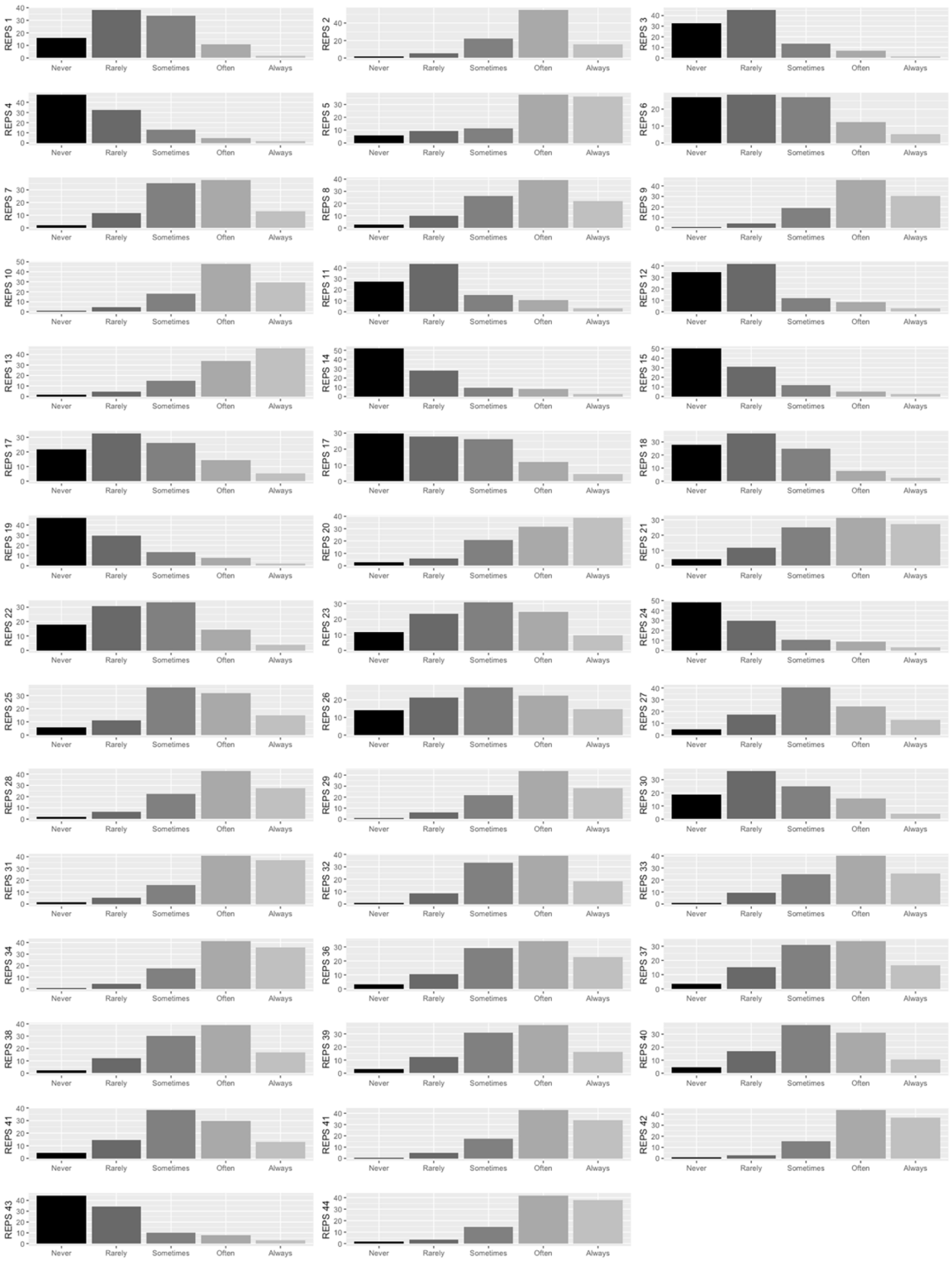

Figure 1. Frequencies for REPS items

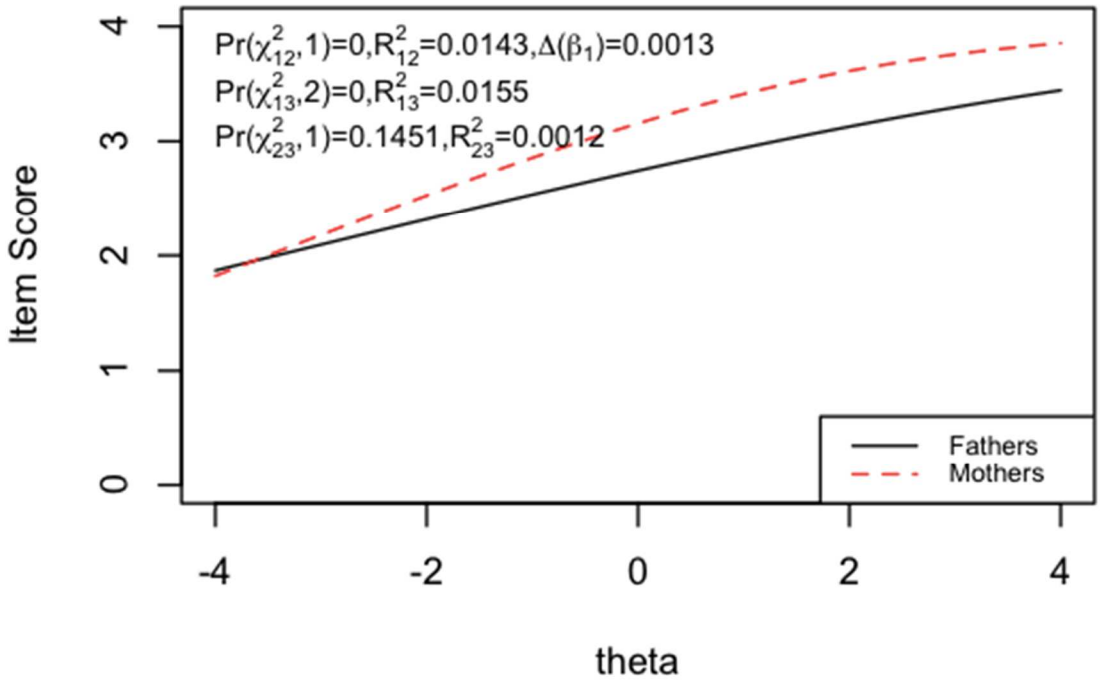

Figure 2. Category Response Curve for "After losing my temper around my child, I feel guilty" (Item 21).

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