An Integrated Analysis of the Mechanisms by Which Parents Facilitate the Development of Emotion Regulation in Young Adolescents

Andrew Fox
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An Integrated Analysis of the Mechanisms by Which Parents Facilitate the Development of Emotion Regulation in Young Adolescents

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Clinical Psychology

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June 30, 2020

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Dedication

To my family, friends, mentors, and fiancée, whose support, encouragement, and love continue to inspire and motivate me in the pursuit of my academic and professional passions.
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Abstract

Effective emotion regulation strategies are associated with adaptive outcomes in youth. While previous research has established parental socialization of emotion regulation as an important predictor of adaptive outcomes, the mechanisms by which parents contribute to young adolescents’ emotion regulation outcomes is poorly understood. The current study examined pathways between parenting style, parental socialization of emotion regulation practices, and adolescent negative affectivity to emotion regulation outcomes in adolescents cross-sectionally and prospectively over the course of a year. Participants were 150 young adolescents ages to 10 to 14 ($M_{age} = 13.03$, $SD_{age} = .90$; 51.33% female) and their parent/legal guardian recruited from four middle schools in the Pacific Northwest. Contrary to hypotheses, robust path analyses conducted in Mplus examining the conditional indirect pathways of the cross-sectional moderated mediation path models predicting cognitive reappraisal (Model 1; $b_{aX->MoM->Y} = -1.26$ [2.05], 95% CI [-5.28, 2.76], $p = .54$) and expressive suppression (Model 2; $b_{aX->MoM->Y} = -1.60$ [1.29], 95% CI [-4.13, 0.92], $p = .21$), as well as the conditional indirect pathway of the prospective moderated mediation path model predicting cognitive reappraisal (Model 3; $b_{aX->MoM->Y} = 0.72$ [1.91], 95% CI [-3.02, 4.47], $p = .71$), were nonsignificant. However, consistent with hypotheses, the conditional indirect pathway of the prospective moderated mediation path model predicting expressive suppression (Model 4; $b_{aX->MoM->Y} = 3.76$ [1.87], 95% CI [0.10, 7.43], $p = .04$) was statistically significant, indicating that suppression at 12 months was significantly greater at higher levels of adolescent negative affectivity at baseline. Alternative models were evaluated for fit and associations among the variables post-hoc. Current results suggest limited support for the proposed causal pathways from parenting style to adolescent emotion regulation strategy use through socialization of emotion regulation.
Chapter I: Introduction and Literature Review

Purpose

Adolescence is a distinct period of development marked by changes in biological, interpersonal, and cognitive domains (Rawana et al., 2014), and characterized by intense and fluctuating emotionality (see Riediger & Klipker, 2014; Silk et al., 2003). This developmental stage is considered to be a fundamental period for the development of emotion regulation (Rawana et al., 2014), and emotion regulation is thought to play a key role in helping adolescents face developmental challenges (e.g., McLaughlin et al., 2011; Silk et al., 2007; Yap et al., 2007). Effective emotion regulation is an important predictor of adaptive outcomes for adolescents (e.g., Garnefski et al., 2006; Rice et al., 2007; Silk et al., 2003), while difficulties with emotion regulation are a major risk factor for most forms of psychopathology (see Beauchaine, 2015). Given the important role of emotion regulation in adolescent psychosocial outcomes in internalizing, externalizing, and adaptive outcomes (e.g., Garnefski et al., 2006, Silk et al., 2003), it is necessary to understand vulnerabilities that contribute to emotion regulation difficulties during this critical developmental period.

In their tripartite model of the impact of the family on children’s emotion regulation, Morris et al. (2007) proposed that direct and indirect parenting processes, and specifically parental socialization of emotion regulation, are particularly important in the development of adaptive emotion regulation in children and adolescents. In particular, specific parenting practices and behaviors are utilized to socialize adolescents’ emotion regulation strategies in ways that are consistent with parents’ beliefs about emotions and desired goals for their adolescents. Efficacious parental socialization strategies such as emotion-coaching and supportive reactions to children’s negative emotions have shown associations with positive
infant and child emotion regulation outcomes (e.g., Herbert et al., 2013; Lunkenheimer et al., 2007). More research is needed among adolescents, however, as well as research examining causal pathways linking broader parenting factors and adolescent characteristics with parental socialization of emotion and adolescent emotion regulation outcomes.

One broader parenting factor that may influence parental socialization of emotion regulation behaviors and subsequent adolescent emotion regulation is parenting style, which conveys more global attitudes that parents hold about their children (Morris et al., 2007). While research has established links between parenting style and youth emotion regulation outcomes (e.g., Fosco & Grych, 2012), less research has directly examined pathways with emotion socialization, and emotion regulation outcomes through emotion socialization (Chan et al., 2009). Furthermore, these pathways may be further moderated by child variables such as child temperament (Morris et al., 2007), though research is minimal at present and deserves further study.

The current study aims to examine the pathways between parenting style, parental socialization of emotion regulation practices, and adolescent temperament (specifically negative affectivity) to emotion regulation outcomes in adolescents cross-sectionally and over the course of a year. Warm and supportive parenting styles may set the stage for more supportive socialization practices, leading to more adaptive emotion regulation outcomes, while hostile and controlling parenting styles set the stage for more unsupportive socialization practices, leading to maladaptive emotion regulation outcomes. Further, adolescents’ negative affectivity may influence the nature of parents’ socialization of emotion regulation on emotion regulation outcomes, with adolescents higher in negative affectivity showing more negative emotion regulation outcomes in the presence of more unsupportive socialization practices and more
positive emotion regulation outcomes in the presence of more supportive socialization practices. Thus, I hypothesize that parental socialization of emotion regulation will act as a mediator between parenting style and emotion regulation outcomes, and that this pathway will be moderated by negative affectivity (see Figure 1).

**Figure 1**

*Hypothesized Associations Between Parenting Style, Parental Socialization of Emotion Regulation, Adolescent Negative Affectivity, and Adolescent Emotion Regulation*

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**Early Adolescence and Emotion Regulation Development**

Early adolescence is a critical period for emotion regulation development, setting the stage for future psychological and psychosocial functioning (Rawana et al., 2014). Emotion regulation is defined as “the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one’s goals” (Thompson, 1994, pp. 27-28). According to the modal model of emotion (Gross, 2014), emotions involve a sequence of events beginning with a *situation* (external or internal) that compels an individual’s *attention*, resulting in an *appraisal* that gives the situation meaning in light of currently active goals, and finally gives rise to coordinated, flexible multisystem responses. Gross’ process model of emotion regulation (1998) identifies
five sets of emotion regulation processes by which individuals can regulate their emotions, and which can be mapped onto the modal model of emotion: situation selection, situation modification, attentional deployment, cognitive change, and response modulation. Two emotion regulation strategies receiving much attention in the literature are cognitive reappraisal, a cognitive change strategy that involves changing a situation’s meaning to alter one’s emotional response to the situation, and expressive suppression, a response modulation strategy that involves attempts to inhibit emotional expression (Gross & John, 2003; Joormann & Siemer, 2014). While necessarily dependent on one’s immediate context and goals, cognitive reappraisal is generally considered to be a more adaptive emotion regulation strategy, while expressive suppression is generally considered to be a more maladaptive emotion regulation strategy, with these strategies resulting in differential psychosocial outcomes (Gross & John, 2003).

Emotion regulation is an important predictor of adaptive outcomes in children and adolescents, with better emotion regulation showing associations with lower levels of externalizing behaviors (Batum & Yagmurlu, 2007; Silk et al., 2003), better academic functioning and learning (Rice et al., 2007), lower substance use (Wills et al., 2006), lower levels of internalizing symptoms (Garnefski et al., 2006, Silk et al., 2003), lower levels of impulsivity (d’Acremont & Van der Linden, 2007), lower levels of body dissatisfaction and disordered eating (Sim & Zeman, 2006), more secure mother-child attachment (Contreras et al., 2000), and greater peer competence (Contreras et al., 2000; Vorbach, 2002). In contrast, “difficulties with [emotion regulation] characterize almost all forms of psychopathology” (Beauchaine, 2015, p. 43), with maladaptive emotion regulation being linked with increased anxiety (McLaughlin et al., 2011; Tortella-Feliu et al., 2010), depression (Garnefski et al., 2012; Silk et al., 2003), impulsivity (d’Acremont & Van der Linden, 2007), nonsuicidal self-injury (Hasking et al., 2017;
Sim et al., 2009), suicidality (Brausch & Woods, 2018) substance use (Wills et al., 2006), externalizing behavior (McLaughlin et al., 2011; Silk et al., 2003) and disordered eating (McLaughlin et al., 2011; Vandewalle et al., 2014) in children and adolescents. Ultimately, there are many factors contributing to the development of emotion regulation in children and young adolescents, and it is necessary to better understand the vulnerabilities that contribute to emotion regulation difficulties during this critical developmental period.

Theoretical Foundation

Importance of Intrinsic Factors in the Development of Emotion Regulation

Emotion regulation ultimately emerges as the byproduct of multiple developmental processes, involving both intrinsic and extrinsic components, as noted previously. However, the early years of a child’s life greatly involve development of intrinsic components of emotion regulation in particular (Calkins, 1994; Fox & Calkins, 2003; Thompson & Goodman, 2010). Calkins (1994) and Fox & Calkins (2003) emphasize that neuroregulatory systems that modulate attention, arousal, effortful control processes, executive functions, and reactivity to stimuli are especially important in early infant development of emotion regulation. These neuroregulatory systems include maturation of the limbic system, amygdala, hypothalamus, hypothalamic-pituitary-adrenocortical (HPA) axis, prefrontal cortex, anterior cingulate, and the parasympathetic nervous system, all of which have extended maturational courses (Thompson & Goodman, 2010). Nevertheless, maturation of these cortical systems is crucial for children to flexibly self-soothe and apply emotion regulation strategies, and the unique traits that emerge constitute intrinsic patterns of emotional reactivity and responsivity (i.e., temperament) that are relatively stable across time and are highly linked with later outcomes (Fox & Calkins, 2003). In addition to temperament, maturation of these neuroregulatory systems impacts other intrinsic
factors such as child beliefs/cognitions, regulatory style, and behavioral tendencies (e.g., emotion regulation strategy selection) that facilitate how a child interacts with their environment and contribute to adaptive or maladaptive regulation (Fox & Calkins, 2003). Temperament, beliefs/cognitions, and regulatory style alone are not all the intrinsic factors that contribute to emotion regulation, however. Diamond and Aspinwall (2003) further emphasize the importance that goals play in emotion regulation processes. That is, emotion regulation often is goal-directed, and serves a particular purpose, such as to decrease a negative emotion, or to focus internal resources toward achievement of an external goal. Thus, children’s motivations for engaging in emotion regulation are an important intrinsic factor to consider as well.

While intrinsic factors are certainly important for the development of emotion regulation, theorists also emphasize the interplay between children and their environment, noting that extrinsic factors also play a vital role (Calkins, 1994; Fox & Calkins, 2003; Morris et al., 2007; Thompson & Goodman, 2010). In particular, family and parental influences on children’s emotion regulation development is particularly important, as even children’s neuroregulatory systems are shaped by parental responsivity to infants’ emotional needs for external soothing and comfort (Fox, 1994; Thompson & Goodman, 2010). Thus, it is important to examine the ways in which parents contribute to children’s emotion regulation development over time.

Socialization of Emotion Regulation

Morris et al. (2007) proposed a tripartite model of family influence on youths’ emotion regulation, which identifies three primary domains by which parenting influences child emotion regulation: 1) child observation/modeling of parents’ emotional displays and interactions; 2) specific parenting practices and behaviors related to socialization of emotion regulation; and 3) emotional climate of the family. Consistent with Eisenberg et al.’s (1998) seminal model of
parental socialization of emotion, specific parenting practices related to the socialization of emotion regulation include parental emotion-coaching, parental reactions to children’s emotions, parental encouragement of and perceived control over emotions, explicit teaching of emotion regulation strategies, and parental expression of emotions (Morris et al., 2007). Much research has examined infant and childhood parental socialization of emotion regulation, generally indicating that emotion coaching (Dunsmore et al., 2013; Lunkenheimer et al., 2007), supportive reactions to children’s negative emotions (Herbert et al., 2013; Hurrell et al., 2015; Morelen & Suveg, 2012), positive emotional expressivity (Eisenberg et al., 2001a), and teaching about emotions (Eisenberg et al., 2001b) contribute to positive emotion regulation outcomes for infants and young children. In contrast, emotion dismissing (Lunkenheimer et al., 2007), unsupportive reactions to children’s negative emotions (Hurrell et al., 2015; Shaffer et al., 2012), and negative emotional expressivity (Eisenberg et al., 2001a; Ramsden & Hubbard, 2002) contribute to greater emotion dysregulation and maladaptive outcomes for infants and young children.

Less research has examined parental socialization of emotion regulation in adolescence, leading to calls for further research in this population (Klimes-Dougan & Zeman, 2007). Some initial research has indicated that emotion coaching (Kehoe et al., 2014; Stocker et al., 2007) and unsupportive parental responses (Buckhold et al., 2014; Otterpohl & Wild, 2015) in particular have shown associations with adolescent emotion regulation outcomes, but more research is needed. Furthermore, little research has examined full explanatory pathways examining parental influences on adolescents’ socialization of emotion regulation, beginning with broader parenting styles and emotional climate.
Parenting Style

Parenting style is defined as “a constellation of attitudes toward the child that are communicated to the child and that, taken together, create an emotional climate in which the parent's behaviors are expressed” (Darling & Steinberg, 1993). Parenting style is thought to be independent of the specific context in which emotion socialization behaviors occur, and instead conveys an attitude toward the child globally, rather than toward the child’s behavior specifically (Darling & Steinberg, 1993; Eisenberg et al., 1998; Morris et al., 2007). Parenting style has largely been examined in contrasting dimensions of warmth and hostility, as well as a dimension of parental control. Research suggests important links between parenting style and adolescent emotion regulation outcomes, with warm and supportive parenting styles being associated with more adaptive emotion regulation (e.g., Fosco & Grych, 2012, Jabeen et al., 2013; Jaffe et al., 2010; Walton & Flouri, 2010), harsh or punitive parenting styles being associated with less adaptive and more dysregulated emotion regulation (e.g., Chang et al., 2003; Fosco & Grych, 2012; Saritas et al., 2013; Vandewalle et al., 2014), and parental control showing mixed findings with emotion regulation outcomes (e.g., Cui et al., 2014; Manzeske & Stright, 2009; Perry et al., 2018; Reuth et al., 2017; Walton & Flouri, 2010).

There has been less research directly linking parenting style and emotion socialization (Chan et al., 2009). Eisenberg et al. (2001b) found a positive association between parental warmth and supportive emotion socialization practices, and Chan et al. (2009) found that more warm and supportive parental styles (i.e., authoritative) were generally associated with emotion-coaching and emotion-encouraging socialization practices, while more psychologically controlling parents engaged in more emotion-dismissing socialization practices. More research is needed identifying the pathways by which parenting style influences emotion socialization.
processes, which then in turn impacts adolescent emotion regulation development. Furthermore, research should examine the ways in which child variables impact these pathways, such as children’s negative affectivity.

**Negative Affectivity**

According to the theoretical models posited by Morris et al. (2007) and Eisenberg et al. (1998), it is also likely that child characteristics moderate the pathways of parental influence on emotion regulation. One such characteristic may be child negative affectivity, which is defined as the intense and frequent expression of negative emotions across a variety of contexts (Kim & Kochanska, 2012), and is a biologically based temperamental trait (Rothbart, 2007). Few studies have examined the interactions between temperament and parenting in predicting child emotion regulation (Jaffe et al., 2010). Some initial research supports a differential susceptibility model such that infants high in negative affectivity benefit more from positive parenting and have worse outcomes with negative parenting (e.g., Kim & Kochanska, 2012, Leerkes et al., 2009). Furthermore, the emotional cascade model of emotion dysregulation (Selby et al., 2008; Selby & Joiner, 2009) suggests that negative emotionality and rumination (similar to the emotion regulation strategy of suppression) have compounding effects on one another that lead to exponential increases in both negative affect and rumination, which can then result in impulsive and dysregulated behaviors (Selby et al., 2016). Thus, the association between unsupportive parental socialization behaviors in the current study and poor adolescent emotion regulation may be particularly strong when adolescents also exhibit high negative affectivity. Further research is thus needed to examine how negative affectivity impacts parental socialization of emotion regulation pathways among adolescents.
Current Study

The current study examined the pathways between parenting style, parental socialization of emotion regulation practices, and adolescent negative affectivity to adolescent emotion regulation outcomes cross-sectionally and prospectively over the course of a year. Prior research has demonstrated relations between both parenting style and socialization of emotion on emotion regulation outcomes, but less research has examined mediational pathways among these variables, as well as the moderating effects of child characteristics such as negative affectivity. Warm and supportive parenting styles may set the stage for more supportive socialization practices, leading to more adaptive emotion regulation outcomes, while hostile and controlling parenting styles set the stage for more unsupportive socialization practices, leading to maladaptive emotion regulation outcomes. Thus, I hypothesized that emotion socialization practices would mediate the association between parenting style and adolescent emotion regulation, such that 1) parental warmth would predict greater use of supportive socialization practices which would in turn predict greater use of reappraisal strategies and lower use of suppression; 2) parental warmth would predict lower use of unsupportive socialization practices which would in turn predict lower use of reappraisal strategies and greater use of suppression; 3) parental hostility would predict lower use of supportive socialization practices which in turn would predict lower use of reappraisal strategies and greater use of suppression; and 4) parental hostility would predict greater use of unsupportive socialization practices which would in turn predict lower use of reappraisal strategies and greater use of suppression. Finally, 5) I hypothesized that these pathways would be moderated by negative affectivity, such that consistent with a differential susceptibility model those high in negative affectivity would be more likely to engage in suppression and less likely to engage in reappraisal when parents used
more unsupportive socialization practices, but would be more likely to engage in reappraisal and less likely to engage in suppression when parents used more supportive socialization practices. All hypotheses were tested both cross-sectionally and prospectively (see Figures 2, 3, 4, and 5).

**Figure 2**

*Hypothesized Path Diagram of the Cross-Sectional Effects of Parenting Style on Adolescent Cognitive Reappraisal through Parental Socialization of Emotion Regulation*
Figure 3

Hypothesized Path Diagram of the Cross-Sectional Effects of Parenting Style on Adolescent Suppression through Parental Socialization of Emotion Regulation
Figure 4

Hypothesized Path Diagram of the Prospective Effects of Parenting Style on Adolescent Cognitive Reappraisal through Parental Socialization of Emotion Regulation
Chapter II: Method

Sample and Participant Selection

Participants

The current study utilized a participant pool from an ongoing longitudinal study investigating cognitive, affective, and physiological vulnerabilities for adolescent depression. Participants were 150 young adolescents ages 10 to 14 ($M_{age} = 13.03$, $SD_{age} = .90$; 51.33% female) and 150 parents/legal guardians, recruited from four middle schools in the Pacific Northwest. Approximately 70.57% of young adolescents identified as White/European American, 8.67% as multiracial/other, 7.33% as Asian origin/Asian American, 0.67% as African origin/African American, and 0.67% as Pacific Islander or Native American. Full participant demographics are reported in Table 1.
### Table 1

**Participant Demographics**

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<td>Multiracial/Other</td>
<td>13</td>
<td>8.67</td>
<td>9.85</td>
</tr>
<tr>
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<td>18</td>
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<td>–</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>132</td>
<td>88.00</td>
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</tr>
</tbody>
</table>

Various rules of thumb have been advanced regarding the necessary samples size to achieve sufficient power to conduct a path analysis, including (a) a minimum sample size of 100
or 200 (Boomsma, 1982, 1985), (b) 5 or 10 observations per parameter to be estimated (Bentler & Chou, 1987; see also Bollen, 1989), and (c) 10 cases per variable (Nunnally, 1967). Given that each model to be run consisted of 20 parameters to be estimated and 8 observed variables, the sample size is likely to be sufficient for statistical power based on the criteria set forth by Boomsma (1982, 1985), Bentler and Chou (1987), and Nunnally (1967). A sensitivity analysis was also conducted in G*Power 3.1 (Faul et al., 2009) using the settings for the multiple regression case which, while imperfect as it does not fully account for variance in the dependent variable explained by the indirect effects, provides further support for determining the likelihood of detecting an effect given the sample. The sensitivity analysis results indicated that given 150 participants, an effect size ($f^2$) of .17 (small-to-medium effect; Cohen, 1988) can be reliably detected with a power of .80 and type-I error rate of .05. This provides further support that the sample size may be sufficient for statistical power.

**Procedure**

Parents of recruited participants were interviewed via phone to determine if the youth met criteria for the study. Eligible youth had to be able to read English and not have significant learning or attention problems that would interfere with the youth’s ability to complete study tasks. Youth taking stimulant medications had to be able to abstain from the medication for 36 hours prior to the laboratory visit. Parents and study staff jointly determined the participant’s eligibility based on the criteria above, as well as one caregiver’s ability to complete caregiver questionnaires in English. Eligible youth were invited to participate in a baseline laboratory visit.

**Baseline Laboratory Visit.** Eligible youth and their parents completed a university-based laboratory visit, which took approximately four hours. Parents provided consent and adolescents provided assent prior to the start of the visit. During the visit, adolescents reported
on their use of emotion regulation strategies, and parents reported on their parenting style, socialization of emotion regulation practices, and their adolescents’ negative affectivity via online questionnaires. As this research was part of a larger study, youths and their parents also completed multiple other questionnaires of mood (e.g., Children’s Depression Inventory, Second Edition [CDI-II]; Kovacs, 2010), development (e.g., Self-Administered Rating Scale for Pubertal Development; Carskadon & Acebo, 1993), and internalizing and externalizing symptoms (e.g., Child Behavior Checklist [CBCL]; Achenbach & Rescorla, 2001), and two semi-structured interviews that assessed for the presence of mood disorders (Kiddie Schedule for Affective Disorders [KSADS]; Kaufman et al., 1997) and acute and chronic positive and negative stressful life events (Children’s Life Stress Interview [LSI], Rudolph & Hammen, 1999) during the baseline laboratory visit. Youths also completed a stressful task (unsolvable anagrams) and rewarding task (delayed matching-to-sample task with opportunity to earn extra money), during which youths’ physiological responding was recorded, along with measures of mood (e.g., Positive Affect and Negative Affect Scale, Children’s Version [PANAS-C]), attention (e.g., modified dot-probe; MacLeod et al., 1986; Posner, 1980) and cognitive processing tasks (e.g., emotional N-back; Kensinger & Corkin, 2003). Youth were paid $35 and parents $50 for their participation in the first laboratory visit.

**Follow-Up Laboratory Visits.** Youth then completed two follow-up laboratory visits at 4 months and 12 months following the baseline visit. At each visit, adolescents reported on their use of emotion regulation strategies, and parents reported on their parenting style and socialization of emotion regulation practices via online questionnaires. Parents and youths also completed follow-up questionnaires that were part of the larger study (e.g., CDI), the KSADS
and LSI, and youth’s resting physiological responding to nature pictures were recorded at each visit. Parents were compensated $25 for each follow up visit; youth were paid $15.

**Measures**

**Demographic Variables**

Demographic variables including youth age, biological sex, race, and ethnicity were collected at the first laboratory visit.

**Emotion Regulation**

Emotion regulation was assessed using the Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA; Gullone & Taffe, 2012). The ERQ-CA is a 10-item self-report measure in which adolescents rate the degree to which they utilize cognitive reappraisal (6 items; e.g., “I control my feelings about things by changing the way I think about them”) or suppression (4 items; e.g., “I keep my feelings to myself”) emotion regulation strategies. Items are rated on a scale from 1 (strongly disagree) to 7 (strongly agree). The ERQ-CA has demonstrated satisfactory internal consistency (cognitive reappraisal $\alpha = .83$; expressive suppression $\alpha = .75$), construct validity, and convergent validity (Gullone & Taffe, 2012). The ERQ-CA was administered at the baseline and 12-month laboratory visits. Internal consistency for the ERQ-CA in the current study at baseline was $\alpha = .82$ for cognitive reappraisal and $\alpha = .79$ for expressive suppression. Internal consistency for the ERQ-CA in the current study at 12 months was $\alpha = .90$ for cognitive reappraisal and $\alpha = .81$ for expressive suppression.

**Parenting Style**

Parenting style was assessed using the Parental Acceptance-Rejection Questionnaire (PARQ; Rohner, 2005). The PARQ is a 60-item parent-report measure in which parents rate the degree to which statements are true of them on subscales of warmth/affection (20 items; e.g., “I
say nice things about my child”), hostility/aggression (15 items; e.g., “I am harsh with my child”), indiff erence/neglect (15 items; e.g., “I pay no attention to my child”), and undifferentiated rejection (10 items; e.g., “I wonder if I really love my child”) on a scale from 1 (almost never true) to 4 (almost always true). Higher scores on each subscale represent higher levels of the subscale’s construct. Only the warmth/affection and hostility/aggression subscales were used in the current study. The PARQ has demonstrated satisfactory internal consistency (mean-weighted $\alpha = .84$; Khaleque & Rohner, 2002), construct, convergent, and discriminant validity (Rohner, 2005). The PARQ was administered at the baseline laboratory visit and demonstrated internal consistencies of $\alpha = .79$ for warmth and $\alpha = .82$ hostility.

**Socialization of Emotion Regulation**

Emotion socialization was assessed using the Coping with Children’s Negative Emotions Scale (CCNES; Fabes et al., 1990). The CCNES is a self-report measure in which parents respond to nine hypothetical situations in which their child might experience distress (e.g., “When my teenager gets down because he/she has had a bad day, I usually…”). Parents indicated the likelihood that they would respond in six different ways to the situation ranging from 1 (very unlikely) to 7 (very likely). The measure yields six subscales: problem-focused reactions (e.g., “help him/her think of things to do to solve the problem”), emotion-focused reactions (e.g., “listen to him/her talk about his/her feelings”), expressive-encouragement reactions (e.g., “encourage him/her to talk about what is making him/her nervous”), minimization reactions (“tell him/her not to make such a big deal out of it”), punitive reactions (e.g., “get angry at him/her for losing his/her temper”), and distress reactions (e.g., “become obviously uncomfortable when I see he/she is feeling down”). Based on previous research, a composite supportive parenting scale (problem-focused, emotion-focused, expressive encouragement) and a
composite unsupportive parenting scale (minimization reactions, punitive reactions, distress reactions) were each calculated as an average across the respective subscales (DeBoard-Lucas et al., 2010; Fabes et al., 2002; Nelson et al., 2009). The CCNES has demonstrated satisfactory internal consistency (supportive $\alpha = .88-.94$; unsupportive $\alpha = .82-.88$), test-retest reliability, convergent validity, and predictive validity (DeBoard-Lucas et al., 2010; Fabes et al., 2002; Nelson et al., 2009). The CCNES was administered at the baseline and four-month laboratory visits. Internal consistencies at baseline were $\alpha = .89$ for supportive parenting and $\alpha = .91$ for unsupportive parenting. Internal consistencies at four months were $\alpha = .91$ for supportive parenting and $\alpha = .88$ for unsupportive parenting.

**Negative Affectivity**

Adolescent negative affectivity was assessed using the negative affect superscale of the Early Adolescent Temperament Questionnaire-Revised (EATQ-R; Ellis & Rothbart, 2001). The EATQ-R is a self-report measure in which parents rated the degree to which statements were true of their child on subscales of frustration (e.g., “they get very frustrated when they make a mistake in their school work”), fear (“they feel scared when they enter a darkened room at home”), and shyness (“they feel shy about meeting new people”) on a scale from 1 (*almost always untrue of your child*) to 5 (*almost always true of your child*). Subscales were calculated as an average of all items on the respective subscale, and the negative affect superscale was calculated as an average of the three subscales, with higher scores indicating greater overall adolescent negative affectivity. The EATQ-R has demonstrated satisfactory internal consistency ($\alpha = .65$ to .82), moderate to good test-retest reliability, and construct validity (Ellis & Rothbart, 2001; Muris & Meesters, 2009). The EATQ-R was administered at the baseline laboratory visit and demonstrated an internal consistency of $\alpha = .78$. 
Chapter III: Results

Participant Flow

150 young adolescents aged 10 to 14 ($M_{\text{age}} = 13.03$, $SD_{\text{age}} = .90$, 51.33% female) and 150 parents/legal guardians (76.67% biological or adoptive mothers; 19.33% biological or adoptive fathers; 1.33% stepmothers; 1.33% stepfathers; 0.67% legal guardians; 0.67% step-grandmothers) completed the initial baseline laboratory visit. One hundred and thirty-five young adolescents ($M_{\text{age}} = 13.42$, $SD_{\text{age}} = .91$, 48.89% female) and 135 parents/legal guardians (78.63% biological or adoptive mothers; 19.66% biological or adoptive fathers; 0.85% stepmothers; 0.85% stepfathers) completed the 4-month laboratory visit. One hundred and eighteen young adolescents ($M_{\text{age}} = 14.18$, $SD_{\text{age}} = .91$, 49.15% female) and 118 parents/legal guardians (80.51% biological or adoptive mothers; 16.95% biological or adoptive fathers; 2.54% stepfathers) completed the 12-month laboratory visit, indicating a retention rate of 78.67% across the year. Full parent demographics are reported in Table 2.

Table 2

Parent Demographics

<table>
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<th></th>
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<th>%</th>
<th>Valid %</th>
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<td></td>
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<td>76.67</td>
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<td>1.33</td>
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<tr>
<td>Stepfather</td>
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<td>1.33</td>
<td>1.33</td>
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**4-Month Visit**

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<td>SD</td>
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<tr>
<td>-----------------------------</td>
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<td>-----</td>
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<td>Biological/Adoptive Father</td>
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<tr>
<td>Stepfather</td>
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<td>0.85</td>
</tr>
<tr>
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<td>117</td>
<td>78.00</td>
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</table>

**12-Month Visit**

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<th>SD</th>
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<td>Biological/Adoptive Father</td>
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<td>16.95</td>
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<tr>
<td></td>
<td>118</td>
<td>78.67</td>
<td></td>
</tr>
</tbody>
</table>

**Data Analytic Plan**

SPSS 26.0 was used to prepare and examine data prior to testing the primary study hypotheses. This included analyses examining outliers, missingness, descriptive statistics, and correlations among the study variables. Examination and evaluation of data normality, as well as calculations of lambda (λ) values needed for Box-Cox transformations (Box & Cox, 1964) were conducted in R (Version 3.6.1; R Core Team, 2019).

Data were then analyzed to address the primary hypotheses using path analysis with Mplus (Version 8.4; Muthén & Muthén, 2017), following the guidelines of Preacher and Hayes (2008) for multiple mediation models. To address Hypotheses 1, 2, 3, 4, and 5, a total of four models were run (see Figures 2, 3, 4, and 5) in which warmth, hostility, supportive responses, unsupportive responses, negative affectivity, and either reappraisal or suppression were entered as observed variables in order to assess the structural relationships between variables. Four models were run to assess the relations among the variables: two cross-sectional and two prospective relationships. Thus, for the models represented in Figure 2 and Figure 3, all variables...
were assessed at the baseline visit, whereas for the models represented in Figure 4 and Figure 5, warmth, hostility, and negative affectivity were assessed at the baseline visit, supportive and unsupportive responses were assessed at the 4-month visit, and reappraisal and suppression were assessed at the 12-month visit.

To assess model fit, several indices were used, including the $\chi^2$ test of model fit, the comparative-fit-index (CFI), the Tucker-Lewis Index (TLI), and the standardized root mean square residual (RMSEA). Good model fit is represented by a non-significant $\chi^2$ test, CFI value greater than 0.95, TLI value greater than .95, and an RMSEA value less than 0.06 (Hu & Bentler, 1999). The significance and strength of the path coefficients were used to visually assess the direct effect of warmth on supportive responses, warmth on unsupportive responses, hostility on supportive responses, hostility on unsupportive responses, supportive responses on reappraisal, supportive responses on suppression, unsupportive responses on reappraisal, and unsupportive responses on suppression. The MODEL CONSTRAINT command was used to assess the conditional indirect effect of warmth on reappraisal through supportive and unsupportive responses, the conditional indirect effect of warmth on suppression through supportive and unsupportive responses, the conditional indirect effect of hostility on reappraisal through supportive and unsupportive responses, and the conditional indirect effect of hostility on suppression through supportive on unsupportive responses. The syntax run in the MODEL CONSTRAINT command was adapted from Stride et al.’s (2015) syntax for PROCESS model 14 using Mplus. The DEFINE command was used to compute the interactions between adolescent negative affectivity and the emotion socialization variables (supportive and unsupportive responses) on emotion regulation outcome, resulting in two interaction terms in
Data Preparation

Missing Data

Data were screened for missingness prior to analyses. Ninety-nine percent of the variables and 72.67% of the participants had some missing data; 89.56% of the values in the model had complete data. Results of Little’s (1988) missing completely at random (MCAR) test suggested that data was missing completely at random ($\chi^2[19873] = 9901.56, p = 1.00$). Self-report scale totals were computed using person-mean imputation for self-report scales where at least 80% of the variables had valid and non-missing values, resulting in 80% of scale totals and 42% of participants having some missing scale totals; 90.93% of the scale total values in the sample had complete data.

Missing data were handled for subsequent analyses using full information maximum likelihood. Full information maximum likelihood estimates missing parameters using a casewise likelihood function for each individual using only the variables that are observed for that case, and produces both model fit information (including chi-square) and standard error estimates based on all cases (Enders, 2001; Enders & Bandalos, 2001; Newsom, 2018). Full information maximum likelihood with data that is either missing completely at random or missing at random has been shown to be superior to multiple imputation methods in some studies, particularly for longitudinal data (Enders & Bandalos, 2001; Larsen, 2001; Newsom, 2018).

Normality and Outlier Analysis

Univariate normality was assessed graphically through histograms, normal curves, P-P plots, and Q-Q plots. Univariate skewness, kurtosis, and normality of all continuous variables
was assessed empirically using the MVN (Korkmaz et al., 2014), EnvStats (Millard, 2013), and psych (Revelle, 2019) packages in R. Skewness was estimated using the third sample moment statistic ($\sqrt{b_1}$), kurtosis was estimated using the fourth sample moment statistic ($b_2$), and omnibus univariate normality was assessed using the Shapiro-Wilks test ($W$), all of which have demonstrated good psychometric performance in detecting nonnormality associated with skewness and kurtosis (D’Agostino et al., 1990; DeCarlo, 1997; Yap & Sim, 2010). Statistics were computed for each variable for each model being tested and can be found in Table 3.

Statistically significant negative skew was found for PARQ-Warmth (PARQ-W) at baseline across all four models being tested (Skew = -1.72, -1.69, -1.70, and -1.70, respectively; all $p < .001$). Statistically significant positive skew was found for CCNES-Unsupportive (CCNES-U) at baseline in models 1 ($\sqrt{b_1} = 1.21, p < .001$) and 2 ($\sqrt{b_1} = 1.22, p < .001$), and for CCNES-U at four months in models 3 ($\sqrt{b_1} = 0.82, p = .002$) and 4 ($\sqrt{b_1} = 0.82, p < .001$), while ERQ-Reappraisal (ERQ-R) demonstrated statistically significant negative skew at baseline ($\sqrt{b_1} = -0.47, p = .03$) and four months ($\sqrt{b_1} = -0.56, p = .03$). Statistically significant kurtosis was found for participant age at baseline ($b_2 = -0.92, p < .001; b_2 = -0.93, p < .001; b_2 = -0.89, p = .005; b_2 = -0.89, p = .005$) and PARQ-Hostility (PARQ-H) at baseline ($b_2 = 2.78, p < .001; b_2 = 2.83, p < .001; b_2 = 2.60, p = .002; b_2 = 2.60, p = .002$) across all four models tested. CCNES-U at baseline demonstrated statistically significant kurtosis in Model 1 ($b_2 = 1.17, p = .03$) and Model 2 ($b_2 = 1.19, p = .02$), but CCNES-U at four months did not demonstrate statistically significant kurtosis in either Model 3 or 4. Finally, statistically significant violations of univariate normality were found for age at baseline ($K^2 = 14.28, p = .001; K^2 = 14.80, p = .001; K^2 = 8.67, p = .01; K^2 = 8.67, p = .01$) and PARQ-W at baseline ($K^2 = 50.13, p < .001; K^2 = 49.52, p < .001; K^2 = 38.21, p < .001; K^2 = 38.21, p < .001$) across all four models tested, for
CCNES-U at baseline in Model 1 ($K^2 = 28.00, p < .001$) and Model 2 ($K^2 = 28.31, p < .001$) and CCNES-U at four months in Model 3 ($K^2 = 10.79, p = .005$) and Model 4 ($K^2 = 10.79, p = .005$), and for ERQ-R at 12 months in Model 3 ($7.52, p = .02$) but not at baseline in Model 1.

Table 3

Univariate Tests of Variable Skewness, Kurtosis, and Normality by Model

<table>
<thead>
<tr>
<th>Model</th>
<th>Skew</th>
<th>p</th>
<th>Kurtosis</th>
<th>Normality ($W$)</th>
<th>p</th>
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</thead>
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<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Age at 0mo</td>
<td>0.25</td>
<td>.20</td>
<td>-0.97</td>
<td>0.97</td>
<td>.005**</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>-1.73</td>
<td>.00***</td>
<td>3.21</td>
<td>0.80</td>
<td>.00***</td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.17</td>
<td>.39</td>
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<td>.14</td>
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<tr>
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<td>.00***</td>
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<td>.00***</td>
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<tr>
<td>EATQ-NA 0mo</td>
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<td>.41</td>
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<tr>
<td>ERQ-R 0mo</td>
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<td>.02*</td>
<td>0.29</td>
<td>0.98</td>
<td>.10</td>
</tr>
<tr>
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<tr>
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<td>.19</td>
<td>-0.97</td>
<td>0.97</td>
<td>.005**</td>
</tr>
<tr>
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<td>.00***</td>
<td>3.21</td>
<td>0.81</td>
<td>.00***</td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
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<td>.39</td>
<td>-0.50</td>
<td>0.98</td>
<td>.12</td>
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<tr>
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<td>.00***</td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
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<td>0.98</td>
<td>.13</td>
</tr>
<tr>
<td>CCNES-S 4mo</td>
<td>-0.54</td>
<td>.02*</td>
<td>-0.11</td>
<td>0.97</td>
<td>.02*</td>
</tr>
<tr>
<td>CCNES-U 4mo</td>
<td>0.81</td>
<td>.001**</td>
<td>0.05</td>
<td>0.94</td>
<td>.00***</td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
<td>-0.07</td>
<td>.73</td>
<td>-0.18</td>
<td>0.99</td>
<td>.78</td>
</tr>
<tr>
<td>ERQ-S 12mo</td>
<td>0.42</td>
<td>.06</td>
<td>-0.42</td>
<td>0.97</td>
<td>.03*</td>
</tr>
</tbody>
</table>

Note. PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, PARQ-H 0mo = Parental Acceptance-Rejection Questionnaire-Hostility Subscale at baseline, EATQ-NA 0mo = Early Adolescent Temperament Questionnaire-Revised Negative Affect Subscale at baseline, CCNES-S 0mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at baseline, CCNES-U 0mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at baseline, CCNES-S 4mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at four months, CCNES-U 4mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at four months, ERQ-R 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at baseline, ERQ-S 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at baseline, ERQ-R 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at 12 months, ERQ-S 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at 12 months.

*p < .05, **p < .01, ***p < .001.

Multivariate skewness, kurtosis, normality, and outliers were assessed using the MVN package in R (Korkmaz et al., 2014) utilizing Mardia’s coefficients of skew ($b_1$) and kurtosis
(b_2), and Royston’s (1992) test for multivariate normality (H). Results are presented in Table 4. Mardia’s (1970, 1974) test of multivariate skew indicated significant multivariate skewness for Model 1 (b_1[6] = 162.81, p < .001), Model 2 (b_1[6] = 166.23, p < .001), Model 3 (b_1[6] = 131.46, p = .001), and Model 4 (b_1[6] = 127.42, p = .002). Mardia’s (1970, 1974) test of multivariate kurtosis indicated no significant multivariate kurtosis across the four models. Finally, Royston’s (1992) omnibus test for multivariate normality indicated significant violations of normality in Model 1 (H[7] = 91.52, p < .001), Model 2 (H = 92.22, p < .001), Model 3 (H = 67.97, p < .001), and Model 4 (H = 68.86, p < .001).

Table 4

<table>
<thead>
<tr>
<th>Model</th>
<th>Skewness (b_1)</th>
<th>p</th>
<th>Kurtosis (b_2)</th>
<th>p</th>
<th>Normality (H)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>162.81</td>
<td>.00***</td>
<td>1.55</td>
<td>.12</td>
<td>91.52</td>
<td>.00***</td>
</tr>
<tr>
<td>Model 2</td>
<td>166.23</td>
<td>.00***</td>
<td>1.58</td>
<td>.11</td>
<td>92.22</td>
<td>.00***</td>
</tr>
<tr>
<td>Model 3</td>
<td>131.46</td>
<td>.001***</td>
<td>0.96</td>
<td>.34</td>
<td>67.97</td>
<td>.00***</td>
</tr>
<tr>
<td>Model 4</td>
<td>127.42</td>
<td>.002**</td>
<td>0.30</td>
<td>.76</td>
<td>68.86</td>
<td>.00***</td>
</tr>
</tbody>
</table>

Note. *p < .05, **p < .01, ***p < .001.

Given the violations to multivariate normality, maximum likelihood estimation with robust standard errors (MLR) was used in all path analyses conducted in Mplus. The MLR estimator is robust to nonnormality and non-independence of observations and a preferred approach to data transformations, and standard errors are computed using a sandwich estimator.

---

1 All path models were also run in Mplus utilizing Box-Cox transformation of model variables (Osborne, 2010). Lambda coefficients used for Box-Cox transformations in all four models were derived utilizing the R package MVN (Korkmaz et al., 2014) and can be found in Table 5, while univariate and multivariate tests of skewness, kurtosis, and normality for models with Box-Cox transformed variables can be found in Tables 6 and 7, respectively. Box-Cox transformed variables were further z-scored to normalize variances so that Mplus could run the model. Comparison of model Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and loglikelihood indicated that all four models run using the MLR estimator performed better than the corresponding models run using Box-Cox transformed data (see Table 8). Statistical comparison of the chi-square test of model fit was not possible due to all models consisting of the same degrees of freedom. Given the superior fit for the MLR models, all subsequent Mplus analyses utilized the untransformed variables and parameters were estimated using the MLR estimator.
(Curran-Bauer Analytics, 2019; Muthén & Muthén, 2017). Further, Muthén and Muthén (2017) state that the MLR chi-square test statistic is considered asymptotically equivalent to the Yuan-Bentler T-2* test statistic.

Table 5

*Lambda Coefficient Constants Used for Box-Cox Power Transformations of Model Variables and Transformed Variable Means*

<table>
<thead>
<tr>
<th></th>
<th>λ</th>
<th>Transformed Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model BC 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age at 0mo</td>
<td>-0.94</td>
<td>0.09 (0.01)</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>16.97</td>
<td>1.21 x 10^{10} (5.86 x 10^9)</td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.81</td>
<td>1.56 (0.28)</td>
</tr>
<tr>
<td>CCNES-S 0mo</td>
<td>1.68</td>
<td>18.76 (3.59)</td>
</tr>
<tr>
<td>CCNES-U 0mo</td>
<td>-0.60</td>
<td>0.72 (0.14)</td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
<td>1.12</td>
<td>3.26 (0.73)</td>
</tr>
<tr>
<td>ERQ-R 0mo</td>
<td>1.55</td>
<td>170.18 (57.95)</td>
</tr>
<tr>
<td><strong>Model BC 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age at 0mo</td>
<td>-0.82</td>
<td>0.12 (0.01)</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>17.12</td>
<td>1.21 x 10^{10} (5.86 x 10^9)</td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.81</td>
<td>1.56 (0.28)</td>
</tr>
<tr>
<td>CCNES-S 0mo</td>
<td>1.89</td>
<td>27.38 (5.84)</td>
</tr>
<tr>
<td>CCNES-U 0mo</td>
<td>-0.62</td>
<td>0.71 (0.14)</td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
<td>1.09</td>
<td>3.14 (0.68)</td>
</tr>
<tr>
<td>ERQ-S 0mo</td>
<td>0.45</td>
<td>3.15 (0.53)</td>
</tr>
<tr>
<td><strong>Model BC 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age at 0mo</td>
<td>-0.98</td>
<td>0.08 (0.01)</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>18.68</td>
<td>1.02 x 10^{11} (5.22 x 10^{10})</td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.57</td>
<td>1.36 (0.17)</td>
</tr>
<tr>
<td>CCNES-S 4mo</td>
<td>2.26</td>
<td>47.17 (14.01)</td>
</tr>
<tr>
<td>CCNES-U 4mo</td>
<td>-0.42</td>
<td>0.79 (0.10)</td>
</tr>
<tr>
<td>Measure</td>
<td>Time</td>
<td>Coefficient</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
<td>0.90</td>
<td>2.57</td>
</tr>
<tr>
<td>ERQ-R 12mo</td>
<td>1.84</td>
<td>497.55</td>
</tr>
</tbody>
</table>

**Model BC 4**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Time</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at 0mo</td>
<td>-0.83</td>
<td>0.12</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>18.64</td>
<td>9.75 x 10^10</td>
<td>4.99 x 10^10</td>
<td></td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.55</td>
<td>1.34</td>
<td>0.16</td>
<td></td>
</tr>
<tr>
<td>CCNES-S 4mo</td>
<td>2.18</td>
<td>41.37</td>
<td>11.92</td>
<td></td>
</tr>
<tr>
<td>CCNES-U 4mo</td>
<td>-0.46</td>
<td>0.77</td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
<td>0.85</td>
<td>2.44</td>
<td>0.42</td>
<td></td>
</tr>
<tr>
<td>ERQ-S 12mo</td>
<td>0.44</td>
<td>2.99</td>
<td>0.52</td>
<td></td>
</tr>
</tbody>
</table>

PARQ-W 0m = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline,
PARQ-H 0mo = Parental Acceptance-Rejection Questionnaire-Hostility Subscale at baseline,
EATQ-NA 0mo = Early Adolescent Temperament Questionnaire-Revised Negative Affect Subscale at baseline, CCNES-S 0mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at baseline, CCNES-U 0mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at baseline, CCNES-S 4mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at four months, CCNES-U 4mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at four months, ERQ-R 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at baseline, ERQ-S 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at baseline, ERQ-R 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at 12 months, ERQ-S 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at 12 months.

*p < .05, **p < .01, ***p < .001.
Table 6

Univariate Tests of Variable Skewness, Kurtosis, and Normality by Model of Box-Cox

Transformed Variables

<table>
<thead>
<tr>
<th>Model BC 1</th>
<th>Skew</th>
<th>p</th>
<th>Kurtosis</th>
<th>Normality (W)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at 0mo</td>
<td>0.06</td>
<td>.77</td>
<td>-1.03</td>
<td>0.97</td>
<td>.01*</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>-0.31</td>
<td>.11</td>
<td>-0.97</td>
<td>0.93</td>
<td>.00***</td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.08</td>
<td>.69</td>
<td>-0.55</td>
<td>0.99</td>
<td>.18</td>
</tr>
<tr>
<td>CCNES-S 0mo</td>
<td>-0.43</td>
<td>.03*</td>
<td>0.19</td>
<td>0.99</td>
<td>.36</td>
</tr>
<tr>
<td>CCNES-U 0mo</td>
<td>0.10</td>
<td>.61</td>
<td>-0.62</td>
<td>0.99</td>
<td>.21</td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
<td>-0.00</td>
<td>1.00</td>
<td>-0.20</td>
<td>0.99</td>
<td>.44</td>
</tr>
<tr>
<td>ERQ-R 0mo</td>
<td>-0.07</td>
<td>.73</td>
<td>-0.21</td>
<td>0.99</td>
<td>.90</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model BC 2</th>
<th>Skew</th>
<th>p</th>
<th>Kurtosis</th>
<th>Normality (W)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at 0mo</td>
<td>0.07</td>
<td>.73</td>
<td>-1.03</td>
<td>0.97</td>
<td>.01*</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>-0.30</td>
<td>.12</td>
<td>-0.97</td>
<td>0.93</td>
<td>.00***</td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.08</td>
<td>.69</td>
<td>-0.55</td>
<td>0.98</td>
<td>.16</td>
</tr>
<tr>
<td>CCNES-S 0mo</td>
<td>-0.34</td>
<td>.09</td>
<td>0.01</td>
<td>0.99</td>
<td>.46</td>
</tr>
<tr>
<td>CCNES-U 0mo</td>
<td>0.09</td>
<td>.65</td>
<td>-0.63</td>
<td>0.99</td>
<td>.21</td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
<td>-0.02</td>
<td>.92</td>
<td>-0.20</td>
<td>0.99</td>
<td>.47</td>
</tr>
<tr>
<td>ERQ-S 0mo</td>
<td>-0.11</td>
<td>.58</td>
<td>-0.30</td>
<td>0.99</td>
<td>.48</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model BC 3</th>
<th>Skew</th>
<th>p</th>
<th>Kurtosis</th>
<th>Normality (W)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at 0mo</td>
<td>0.05</td>
<td>.79</td>
<td>-1.03</td>
<td>0.97</td>
<td>.05</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>-0.22</td>
<td>.25</td>
<td>-1.03</td>
<td>0.93</td>
<td>.00***</td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>-0.04</td>
<td>.84</td>
<td>-0.59</td>
<td>0.98</td>
<td>.25</td>
</tr>
<tr>
<td>CCNES-S 4mo</td>
<td>-0.12</td>
<td>.59</td>
<td>-0.64</td>
<td>0.98</td>
<td>.16</td>
</tr>
<tr>
<td>CCNES-U 4mo</td>
<td>0.02</td>
<td>.94</td>
<td>-0.93</td>
<td>0.98</td>
<td>.08</td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
<td>-0.13</td>
<td>.53</td>
<td>-0.15</td>
<td>0.99</td>
<td>.78</td>
</tr>
<tr>
<td>ERQ-R 12mo</td>
<td>0.05</td>
<td>.83</td>
<td>-0.04</td>
<td>0.99</td>
<td>.59</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model BC 4</th>
<th>Skew</th>
<th>p</th>
<th>Kurtosis</th>
<th>Normality (W)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at 0mo</td>
<td>0.07</td>
<td>.73</td>
<td>-1.03</td>
<td>0.97</td>
<td>.02*</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>-0.22</td>
<td>.25</td>
<td>-1.03</td>
<td>0.80</td>
<td>.00***</td>
</tr>
<tr>
<td>Measure</td>
<td>0mo</td>
<td>4mo</td>
<td>12mo</td>
<td>0mo</td>
<td>4mo</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>PARQ-H</td>
<td>-0.05</td>
<td>0.80</td>
<td>-0.59</td>
<td>0.98</td>
<td>0.26</td>
</tr>
<tr>
<td>CCNES-S</td>
<td>-0.14</td>
<td>0.51</td>
<td>-0.62</td>
<td>0.98</td>
<td>0.16</td>
</tr>
<tr>
<td>CCNES-U</td>
<td>-0.00</td>
<td>0.99</td>
<td>-0.93</td>
<td>0.98</td>
<td>0.07</td>
</tr>
<tr>
<td>EATQ-NA</td>
<td>-0.16</td>
<td>0.44</td>
<td>-0.13</td>
<td>0.99</td>
<td>0.77</td>
</tr>
<tr>
<td>ERQ-S</td>
<td>-0.08</td>
<td>0.72</td>
<td>-0.53</td>
<td>0.98</td>
<td>0.21</td>
</tr>
</tbody>
</table>

*Note. PARQ-W 0m = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, PARQ-H 0mo = Parental Acceptance-Rejection Questionnaire-Hostility Subscale at baseline, EATQ-NA 0mo = Early Adolescent Temperament Questionnaire-Revised Negative Affect Subscale at baseline, CCNES-S 0mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at baseline, CCNES-U 0mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at baseline, CCNES-S 4mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at four months, CCNES-U 4mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at four months, ERQ-R 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at baseline, ERQ-S 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at baseline, ERQ-R 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at 12 months, ERQ-S 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at 12 months.*

*p < .05, **p < .01, ***p < .001.*
Table 7

*Multivariate Tests of Skewness, Kurtosis, and Normality by Model of Box-Cox Transformed Variables*

<table>
<thead>
<tr>
<th>Model BC</th>
<th>Skewness ($b_1$)</th>
<th>$p$</th>
<th>Kurtosis ($b_2$)</th>
<th>$p$</th>
<th>Normality ($H$)</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>68.07</td>
<td>.90</td>
<td>-1.74</td>
<td>.08</td>
<td>30.71</td>
<td>.00***</td>
</tr>
<tr>
<td>2</td>
<td>73.60</td>
<td>.78</td>
<td>-1.84</td>
<td>.07</td>
<td>30.58</td>
<td>.00***</td>
</tr>
<tr>
<td>3</td>
<td>69.04</td>
<td>.88</td>
<td>-1.57</td>
<td>.12</td>
<td>25.20</td>
<td>.00***</td>
</tr>
<tr>
<td>4</td>
<td>62.71</td>
<td>.96</td>
<td>-1.43</td>
<td>.15</td>
<td>26.60</td>
<td>.00***</td>
</tr>
</tbody>
</table>

*Note. $b_1$ = Mardia’s skewness coefficient. $b_2$ = Mardia’s kurtosis coefficient. $H$ = Royston’s omnibus test of multivariate normality.***$p < .05$, **$p < .01$, ***$p < .001$.

Table 8

*Comparison of Models With and Without Box-Cox Transformed Variables*

<table>
<thead>
<tr>
<th>Model</th>
<th>AIC</th>
<th>BIC</th>
<th>Loglikelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2848.26</td>
<td>2965.67</td>
<td>-985.06</td>
</tr>
<tr>
<td>Model BC 1</td>
<td>2952.50</td>
<td>3069.91</td>
<td>-1065.55</td>
</tr>
<tr>
<td>2</td>
<td>2751.30</td>
<td>2868.71</td>
<td>-939.64</td>
</tr>
<tr>
<td>Model BC 2</td>
<td>2973.53</td>
<td>3090.94</td>
<td>-1071.05</td>
</tr>
<tr>
<td>3</td>
<td>2410.86</td>
<td>2528.28</td>
<td>-814.78</td>
</tr>
<tr>
<td>Model BC 3</td>
<td>2680.28</td>
<td>2797.70</td>
<td>-929.47</td>
</tr>
<tr>
<td>4</td>
<td>2316.63</td>
<td>2434.05</td>
<td>-766.82</td>
</tr>
<tr>
<td>Model BC 4</td>
<td>2688.08</td>
<td>2805.50</td>
<td>-921.44</td>
</tr>
</tbody>
</table>

*Note. AIC = Akaike Information Criterion, BIC = Bayesian Information Criterion. Models with lower AIC, BIC, and loglikelihood values are considered to be a better fit for the data.*
Descriptive Statistics

Variable means, standard deviations, and bivariate correlations are presented in Table 9. Of note, neither of the covariates of sex or age at baseline were significantly correlated with any other variables being examined, and were removed from all further analyses. Consistent with the hypothesized models, parental warmth and hostility at baseline were significantly negatively correlated ($r = -0.45, p < .001$). Interestingly, parental supportiveness and unsupportiveness was significantly negatively correlated at baseline ($r = -0.24, p = .009$), but not at 4 months ($r = 0.00, p = 98$). However, parental supportiveness at baseline and 4 months ($r = 0.54, p < .001$) and parental unsupportiveness at baseline and 4 months ($r = 0.69, p < .001$) were each significantly positively correlated. Finally, reappraisal and suppression were significantly negatively correlated at baseline ($r = 0.19, p = .02$) but not 12 months ($r = -0.14, p = .14$), while reappraisal at baseline and 12 months ($r = 0.33, p < .001$) and suppression at baseline and 12 months ($r = 0.54, p < .001$) were each significantly positively correlated.

Table 9

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sex</td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
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<td>.51 (.50)</td>
</tr>
<tr>
<td>2. Age at 0mo</td>
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<td></td>
<td></td>
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<td>13.03 (.90)</td>
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<tr>
<td>3. PARQ-W 0mo</td>
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<td>-.04</td>
<td></td>
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<td>.45***</td>
<td></td>
<td></td>
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<td>-.19*</td>
<td>.30**</td>
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<td></td>
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<td>2.69 (.51)</td>
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<tr>
<td>6. CCNES-S 0mo</td>
<td>-.06</td>
<td>-.07</td>
<td>.42***</td>
<td>-.16*</td>
<td>-.09</td>
<td></td>
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<td></td>
<td></td>
<td>5.70 (.67)</td>
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<tr>
<td>7. CCNES-U 0mo</td>
<td>.08</td>
<td>- .04</td>
<td>-.25**</td>
<td>.33**</td>
<td>.34***</td>
<td>- .24**</td>
<td>.193</td>
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<td>8. CCNES-U 4mo</td>
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<td>-.09</td>
<td>.39**</td>
<td>- .15</td>
<td>.01</td>
<td>.54***</td>
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<td>-</td>
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</tr>
<tr>
<td>9. CCNES-U 4mo</td>
<td>.02</td>
<td>-.11</td>
<td>-.24**</td>
<td>.19*</td>
<td>.19*</td>
<td>-.06</td>
<td>.69**</td>
<td>.00</td>
<td>-</td>
<td></td>
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</tr>
<tr>
<td>10. ERQ-R 0mo</td>
<td>-.05</td>
<td>.02</td>
<td>.11</td>
<td>-.11</td>
<td>-.04</td>
<td>-.02</td>
<td>.13</td>
<td>.09</td>
<td>.08</td>
<td>-</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11. ERQ-S 0mo</td>
<td>-.10</td>
<td>.04</td>
<td>.05</td>
<td>.02</td>
<td>.04</td>
<td>-.03</td>
<td>.07</td>
<td>.07</td>
<td>.21*</td>
<td>.19*</td>
<td>-</td>
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</tr>
<tr>
<td>12. ERQ-R 12mo</td>
<td>-.10</td>
<td>.08</td>
<td>.14</td>
<td>-.22*</td>
<td>-.21*</td>
<td>.08</td>
<td>.02</td>
<td>.12</td>
<td>.08</td>
<td>.33***</td>
<td>-.06</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>13. ERQ-S 12mo</td>
<td>-.03</td>
<td>.03</td>
<td>.03</td>
<td>.07</td>
<td>.17†</td>
<td>-.07</td>
<td>.20*</td>
<td>.26*</td>
<td>.16</td>
<td>.05</td>
<td>.54***</td>
<td>-.14</td>
<td>12.69 (.45)</td>
</tr>
</tbody>
</table>

**Note.** PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, PARQ-H 0mo = Parental Acceptance-Rejection Questionnaire-Hostility Subscale at baseline, EATQ-NA 0mo = Early Adolescent Temperament Questionnaire-Revised Negative Affect Subscale at baseline, CCNES-S 0mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at baseline, CCNES-U 0mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at baseline, CCNES-S 4mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at four months, CCNES-U 4mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at four months, ERQ-R 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at baseline, ERQ-S 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at baseline, ERQ-R 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at 12 months, ERQ-S 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at 12 months. Sex was dummy coded prior to analyses (0 = male, 1 = female).

†p < .07, *p < .05, **p < .01, ***p < .001.
Primary Analyses

Model 1

Model 1 examined cross-sectional pathways hypothesized to predict cognitive reappraisal. All variables in Model 1 were assessed at baseline.

Test of Model Fit. Model fit was poor across all fit indices assessed: $\chi^2(7) = 248.27, p < .001; CFI = 0.44; TLI = 0.00; RMSEA = 0.48$. Thus, the full results for Model 1 presented below should be interpreted with caution, given poor model fit.

Tests of Direct and Indirect Effects. Results of the moderated mediation path analysis for Model 1 are presented in Table 10 and Figure 6. Parental warmth (PARQ-W 0mo) and hostility (PARQ-H 0mo) covaried significantly in the specified model ($b = -0.03 [0.01], 95\% CI [-0.04, -0.02], p < .001$). Partially consistent with hypotheses, warmth at baseline (PARQ-W 0mo) predicted greater supportive parenting at baseline (CCNES-S 0mo; $b = 1.77 [0.32], 95\% CI [1.14, 2.39], p < .001$), but did not significantly predict lower unsupportive parenting at baseline (CCNES-U 0mo; $b = -0.56 [0.36], 95\% CI [-1.27, 0.16], p = .13$). Similarly, hostility at baseline (PARQ-H 0mo) predicted greater unsupportive parenting at baseline (CCNES-U 0mo; $b = 0.53 [0.13], 95\% CI [0.27, 0.79], p < .001$), but did not significantly predict lower supportive parenting at baseline (CCNES-S 0mo; $b = 0.06 [0.14], 95\% CI [-0.22, 0.34], p = .68$), thus only partially supporting the predicted hypotheses. The proportion of variance explained for both the CCNES-S 0mo ($R^2 = .19, p = .02$) and CCNES-U 0mo ($R^2 = .13, p = .04$) were both statistically significant, suggesting that parental warmth and hostility explained 19% of the variance in supportive parenting outcomes, and that parental warmth and hostility explained 13% of the variance in unsupportive parenting outcomes.
Inconsistent with hypotheses, supportive parenting (CCNES-S 0mo; $b = -0.08 [1.30]$, 95% CI [-2.64, 2.47], $p = .95$), unsupportive parenting (CCNES-U 0mo; $b = 1.17 [1.16]$, 95% CI [-1.11, 3.44], $p = .31$), adolescent trait negative affect (EATQ-NA 0mo; $b = 0.14 [3.71]$, 95% CI [-7.14, 7.42], $p = .97$), and the interactions between adolescent trait negative affect and supportive parenting (CCNES-S 0mo x EATQ-NA 0mo; $b = -0.20 [0.55]$, 95% CI [-1.27, 0.88], $p = .72$) or unsupportive parenting (CCNES-S 0mo x EATQ-NA 0mo; $b = 0.25 [0.51]$, 95% CI [-0.76, 1.26], $p = .63$) were not significant predictors of reappraisal outcomes (ERQ-R 0mo). Furthermore, the covariates of sex ($b = -0.73 [1.05]$, 95% CI [-2.79, 1.33], $p = .49$) and age at baseline ($b = 0.33 [0.53]$, 95% CI [-0.70, 1.36], $p = .53$) were not significant predictors of ERQ-R baseline scores. Finally, the proportion of variance explained for ERQ-R baseline scores by all variables in the model was not statistically significant ($R^2 = .05, p = .18$).

**Table 10**

Path Analysis of Moderated Mediation for Hypothesized Cross-Sectional Model Predicting Reappraisal

<table>
<thead>
<tr>
<th>Path</th>
<th>$R^2$</th>
<th>$p$</th>
<th>$b$ (SE)</th>
<th>95% CI</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERQ-R 0mo on</td>
<td>.04</td>
<td>.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCNES-S 0mo</td>
<td>-0.15 (1.31)</td>
<td>-2.72</td>
<td>2.42</td>
<td>.91</td>
<td></td>
</tr>
<tr>
<td>CCNES-U 0mo</td>
<td>0.99 (1.13)</td>
<td>-1.22</td>
<td>3.20</td>
<td>.38</td>
<td></td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
<td>-0.03 (3.78)</td>
<td>-7.44</td>
<td>7.39</td>
<td>.99</td>
<td></td>
</tr>
<tr>
<td>CCNES-S 0mo x EATQ-NA 0mo</td>
<td>-0.18 (0.56)</td>
<td>-1.27</td>
<td>0.91</td>
<td>.75</td>
<td></td>
</tr>
<tr>
<td>CCNES-U 0mo x EATQ-NA 0mo</td>
<td>0.29 (0.50)</td>
<td>-0.70</td>
<td>1.27</td>
<td>.57</td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>5.88 (4.14)</td>
<td>-2.23</td>
<td>14.00</td>
<td>.16</td>
<td></td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>-2.20 (1.35)</td>
<td>-4.84</td>
<td>0.43</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>CCNES-S 0mo on</td>
<td>.19</td>
<td>.02*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PARQ-W 0mo</td>
<td>PARQ-H 0mo</td>
<td>CCNES-U 0mo</td>
<td>PARQ-W 0mo with PARQ-H 0mo</td>
<td></td>
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<tr>
<td>--------------------------------</td>
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<td></td>
</tr>
<tr>
<td>1.77 (0.32)</td>
<td>1.14</td>
<td>2.39</td>
<td>.00***</td>
<td>1.33 (0.01)</td>
<td></td>
</tr>
<tr>
<td>0.06 (0.14)</td>
<td>-0.22</td>
<td>0.34</td>
<td>.68</td>
<td>-0.04</td>
<td></td>
</tr>
<tr>
<td>.13</td>
<td>.04*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0.56 (0.36)</td>
<td>-1.27</td>
<td>0.16</td>
<td>.13</td>
<td>-0.02</td>
<td></td>
</tr>
<tr>
<td>0.53 (0.13)</td>
<td>0.27</td>
<td>0.79</td>
<td>.00***</td>
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</tr>
</tbody>
</table>

*Note.* PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, PARQ-H 0mo = Parental Acceptance-Rejection Questionnaire-Hostility Subscale at baseline, EATQ-NA 0mo = Early Adolescent Temperament Questionnaire-Revised Negative Affect Subscale at baseline, CCNES-S 0mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at baseline, CCNES-U 0mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at baseline, ERQ-R 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at baseline.

*p < .05, **p < .01, ***p < .001.
Figure 6

Path Diagram of the Cross-sectional Effects of Parenting Style on Adolescent Cognitive Reappraisal Through Parental Socialization of Emotion Regulation

Note. ***p < .001.

Conditional Direct and Indirect Effects. The conditional direct and indirect effects for Model 1 can be found in Table 11. Specific indirect effects were evaluated utilizing Hayes’ (2015) index of moderated mediation. Contrary to hypotheses, adolescent negative affectivity did not significantly moderate the specific indirect effect of warmth on reappraisal through supportive parenting at baseline (b = -0.35 [0.98], 95% CI [-2.27, 1.57], p = .72), the specific indirect effect of warmth on reappraisal through unsupportive parenting at baseline (b = 0.11 [0.31], 95% CI [-0.49, 0.71], p = .72), the specific indirect effect of hostility on reappraisal through supportive parenting at baseline (b = 0.02 [0.05], 95% CI [-0.08, 0.10], p = .75), or the specific indirect effect of hostility on reappraisal through unsupportive parenting at baseline (b =
0.13 [0.27], 95% CI [-0.16, 2.31], \( p = .63 \). Similarly, contrary to hypotheses, adolescent negative affectivity did not significantly moderate either the total indirect or total direct effects on reappraisal. Thus, results did not support adolescent negative affectivity as a moderator of Model 1.

Table 11

*Conditional Indirect and Direct Effects of Hypothesized Cross-Sectional Model Predicting Reappraisal*

<table>
<thead>
<tr>
<th>Model</th>
<th>95% CI</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PARQ-W 0mo ( \rightarrow ) CCNES-S 0mo ( \rightarrow ) ERQ-R 0mo</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>-0.99 (1.55)</td>
<td>-4.04</td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>-1.17 (1.82)</td>
<td>-4.74</td>
</tr>
<tr>
<td>+1 SD EATQ-NA 0mo</td>
<td>-1.35 (2.20)</td>
<td>-5.68</td>
</tr>
<tr>
<td>Index of Moderated Mediation</td>
<td>-0.32 (1.00)</td>
<td>-2.27</td>
</tr>
<tr>
<td><strong>PARQ-H 0mo ( \rightarrow ) CCNES-S 0mo ( \rightarrow ) ERQ-R 0mo</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>-0.03 (0.10)</td>
<td>-0.22</td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>-0.04 (0.12)</td>
<td>-0.26</td>
</tr>
<tr>
<td>+1 SD EATQ-NA 0mo</td>
<td>-0.05 (0.14)</td>
<td>-0.31</td>
</tr>
<tr>
<td>Index of Moderated Mediation</td>
<td>0.02 (0.05)</td>
<td>-0.08</td>
</tr>
<tr>
<td><strong>PARQ-W 0mo ( \rightarrow ) CCNES-U 0mo ( \rightarrow ) ERQ-R 0mo</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>-0.92 (0.78)</td>
<td>-2.44</td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>-1.01 (0.91)</td>
<td>-2.78</td>
</tr>
<tr>
<td>+1 SD EATQ-NA 0mo</td>
<td>-1.10 (1.06)</td>
<td>-3.17</td>
</tr>
<tr>
<td>Index of Moderated Mediation</td>
<td>0.10 (0.31)</td>
<td>-0.51</td>
</tr>
<tr>
<td><strong>PARQ-H 0mo ( \rightarrow ) CCNES-U 0mo ( \rightarrow ) ERQ-R 0mo</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>0.87 (0.44)</td>
<td>0.02</td>
</tr>
</tbody>
</table>
Mean EATQ-NA 0mo  0.96 (0.52)  -0.05  1.97  .06†
+1 SD EATQ-NA 0mo  1.05 (0.62)  -0.18  2.27  .09†
Index of Moderated Mediation  0.15 (0.27)  -0.38  0.68  .57

**Total Indirect Effect**
-1 SD EATQ-NA 0mo  -1.07 (1.78)  -4.56  2.43  .55
Mean EATQ-NA 0mo  -1.26 (2.05)  -5.28  2.76  .54
+1 SD EATQ-NA 0mo  -1.45 (2.44)  -6.23  3.32  .55

**Total Direct Effect**
-1 SD EATQ-NA 0mo  2.61 (4.46)  -6.12  11.34  .56
Mean EATQ-NA 0mo  2.42 (4.37)  -6.14  10.98  .58
+1 SD EATQ-NA 0mo  2.23 (4.35)  -6.31  10.76  .61

*Note.* PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, PARQ-H 0mo = Parental Acceptance-Rejection Questionnaire-Hostility Subscale at baseline, EATQ-NA 0mo = Early Adolescent Temperament Questionnaire-Revised Negative Affect Subscale at baseline, CCNES-S 0mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at baseline, CCNES-U 0mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at baseline, ERQ-R 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at baseline.

†*p < .10,  *p < .05.

**Model 2**

Model 2 examined cross-sectional pathways hypothesized to predict expressive suppression. All variables in Model 2 were assessed at baseline.
**Test of Model Fit.** Model fit was poor across all fit indices assessed: $\chi^2(7) = 220.97, p < .001$; $CFI = 0.46$; $TLI = 0.00$; $RMSEA = 0.45$. Thus, the full results for Model 2 presented below should be interpreted with caution, given poor model fit.

**Tests of Direct and Indirect Effects.** Results of the moderated mediation path analysis for Model 2 are presented in Table 12 and Figure 7. Parental warmth (PARQ-W 0mo) and hostility (PARQ-H 0mo) covaried significantly in the specified model ($b = -0.03 [0.01], 95\% CI [-0.04, -0.02], p < .001$). Partially consistent with hypotheses, warmth at baseline (PARQ-W 0mo) predicted greater supportive parenting at baseline (CCNES-S 0mo; $b = 1.77 [0.32], 95\% CI [1.25, 2.39], p < .001$), but did not significantly predict lower unsupportive parenting at baseline (CCNES-U 0mo; $b = -0.57 [0.37], 95\% CI [-1.28, 0.15], p = .12$). Similarly, hostility at baseline (PARQ-H 0mo) predicted greater unsupportive parenting at baseline (CCNES-U 0mo; $b = 0.53 [0.13], 95\% CI [0.27, 0.79], p < .001$), but did not significantly predict lower supportive parenting at baseline (CCNES-S 0mo; $b = 0.06 [0.14], 95\% CI [-0.22, 0.34], p = .67$), thus only partially supporting the predicted hypotheses. The proportion of variance explained for both the CCNES-S 0mo ($R^2 = .19, p = .02$) and CCNES-U 0mo ($R^2 = .13, p = .04$) were both statistically significant, suggesting that parental warmth and hostility explained 19% of the variance in supportive parenting outcomes, and that parental warmth and hostility explained 13% of the variance in unsupportive parenting outcomes.

Inconsistent with hypotheses, supportive parenting (CCNES-S 0mo; $b = 0.77 [1.24], 95\% CI [-1.66, 3.20], p = .54$), unsupportive parenting (CCNES-U 0mo; $b = -0.77 [1.33], 95\% CI [-3.37, 1.84], p = .56$), adolescent trait negative affect (EATQ-NA 0mo; $b = 3.76 [3.14], 95\% CI [-2.38, 9.91], p = .23$), and the interactions between adolescent trait negative affect and supportive parenting (CCNES-S 0mo x EATQ-NA 0mo; $b = -0.56 [0.46], 95\% CI [-1.46, 0.33], p = .22$) or
unsupportive parenting (CCNES-S 0mo x EATQ-NA 0mo; \( b = 0.53 \) [0.46], 95% CI [-0.37, 1.43], \( p = .25 \)) were not significant predictors of suppression outcomes (ERQ-S 0mo).

Furthermore, the covariates of sex (\( b = -0.99 \) [0.76], 95% CI [-2.48, 0.49], \( p = .19 \)) and age at baseline (\( b = 0.08 \) [0.38], 95% CI [-0.67, 0.83], \( p = .83 \)) were not significant predictors of ERQ-R 0mo scores. Finally, the proportion of variance explained for ERQ-R 0mo scores by all variables in the model trended toward statistical significance (\( R^2 = .18, p = .07 \)).

### Table 12

**Path Analysis of Moderated Mediation for Hypothesized Cross-Sectional Model Predicting Suppression**

<table>
<thead>
<tr>
<th></th>
<th>( R^2 )</th>
<th>( p )</th>
<th>( b ) (SE)</th>
<th>( b ) (SE)</th>
<th>( 95% ) CI</th>
<th>( 95% ) CI</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERQ-S 0mo on</td>
<td>0.18</td>
<td>.09†</td>
<td>-1.78</td>
<td>3.09</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.60</td>
</tr>
<tr>
<td>CCNES-S 0mo</td>
<td>0.66 (1.24)</td>
<td></td>
<td>-1.78</td>
<td>3.09</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.60</td>
</tr>
<tr>
<td>CCNES-U 0mo</td>
<td>-1.00 (1.25)</td>
<td></td>
<td>-3.46</td>
<td>1.46</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.43</td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
<td>3.37 (3.11)</td>
<td></td>
<td>-2.72</td>
<td>9.46</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.28</td>
</tr>
<tr>
<td>CCNES-S 0mo x EATQ-NA 0mo</td>
<td>-0.53 (0.46)</td>
<td></td>
<td>-1.43</td>
<td>0.37</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.25</td>
</tr>
<tr>
<td>CCNES-U 0mo x EATQ-NA 0mo</td>
<td>0.60 (0.44)</td>
<td></td>
<td>0.26</td>
<td>1.46</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.17</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>5.14 (2.58)</td>
<td></td>
<td>0.08</td>
<td>10.20</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.047*</td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.35 (1.26)</td>
<td></td>
<td>-2.13</td>
<td>2.83</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.78</td>
</tr>
<tr>
<td>CCNES-S 0mo on</td>
<td>0.19</td>
<td>.02*</td>
<td>1.15</td>
<td>2.39</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.00***</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>1.77 (0.32)</td>
<td></td>
<td>1.15</td>
<td>2.39</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.00***</td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.06 (0.14)</td>
<td></td>
<td>-0.22</td>
<td>0.34</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.66</td>
</tr>
<tr>
<td>CCNES-U 0mo on</td>
<td>0.13</td>
<td>.04*</td>
<td>0.53</td>
<td>0.79</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.00***</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>-0.57 (0.37)</td>
<td></td>
<td>-1.28</td>
<td>0.15</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.12</td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.53 (0.13)</td>
<td></td>
<td>0.27</td>
<td>0.79</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.00***</td>
</tr>
<tr>
<td>PARQ-W 0mo with PARQ-H 0mo</td>
<td>-0.03 (0.01)</td>
<td></td>
<td>-0.04</td>
<td>-0.02</td>
<td>95% CI</td>
<td>95% CI</td>
<td>.00***</td>
</tr>
</tbody>
</table>
Note. PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, PARQ-H 0mo = Parental Acceptance-Rejection Questionnaire-Hostility Subscale at baseline, EATQ-NA 0mo = Early Adolescent Temperament Questionnaire-Revised Negative Affect Subscale at baseline, CCNES-S 0mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at baseline, CCNES-U 0mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at baseline, ERQ-S 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at baseline.

†p < .10, *p < .05, **p < .01, ***p < .001.

Figure 7

Path Diagram of the Cross-Sectional Effects of Parenting Style on Adolescent Suppression Through Parental Socialization of Emotion Regulation

Note. ***p < .001.
**Conditional Direct and Indirect Effects.** The conditional direct and indirect effects for Model 2 can be found in Table 13. Contrary to hypotheses, adolescent negative affectivity did not significantly moderate the specific indirect effect of warmth on suppression through supportive parenting at baseline \((b = -1.00[1.83], 95\% \text{ CI } [-2.61, 0.12], p = .23)\), the specific indirect effect of warmth on suppression through unsupportive parenting at baseline \((b = 0.32[0.30], 95\% \text{ CI } [-0.27, 0.91], p = .29)\), the specific indirect effect of hostility on suppression through supportive parenting at baseline \((b = 0.03[0.08], 95\% \text{ CI } [-0.12, 0.19], p = .68)\), or the specific indirect effect of hostility on suppression through unsupportive parenting at baseline \((b = 0.28[0.25], 95\% \text{ CI } [-0.21, 0.77], p = .27)\). Similarly, contrary to hypotheses, adolescent negative affectivity did not significantly moderate either the total indirect or total direct effects on suppression. Thus, results did not support adolescent negative affectivity as a moderator for Model 2.

**Table 13**

*Conditional Indirect and Direct Effects of Hypothesized Cross-Sectional Model Predicting Suppression*

<table>
<thead>
<tr>
<th></th>
<th>(b ) (SE)</th>
<th>Lower</th>
<th>Upper</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PARQ-W 0mo -&gt; CCNES-S 0mo</strong> -&gt; ERQ-S 0mo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>-0.98 (1.10)</td>
<td>-3.13</td>
<td>1.17</td>
<td>.37</td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>-1.52 (1.19)</td>
<td>-3.84</td>
<td>0.80</td>
<td>.20</td>
</tr>
<tr>
<td>+1 SD EATQ-NA 0mo</td>
<td>-2.05 (1.43)</td>
<td>-4.86</td>
<td>0.75</td>
<td>.15</td>
</tr>
<tr>
<td>Index of Moderated Mediation</td>
<td>-0.94 (0.82)</td>
<td>-2.55</td>
<td>0.68</td>
<td>.26</td>
</tr>
<tr>
<td><strong>PARQ-H 0mo -&gt; CCNES-S 0mo</strong> -&gt; ERQ-S 0mo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>-0.04 (0.08)</td>
<td>-0.20</td>
<td>0.13</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>Mean EATQ-NA 0mo</td>
<td>+1 SD EATQ-NA 0mo</td>
<td>Index of Moderated Mediation</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-----------------</td>
<td>-------------------</td>
<td>-----------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>PARQ-W 0mo -&gt; CCNES-U 0mo -&gt; ERQ-S 0mo</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>-0.21 (0.42)</td>
<td>-1.03</td>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>-0.40 (0.51)</td>
<td>-1.40</td>
<td>0.59</td>
<td></td>
</tr>
<tr>
<td>+1 SD EATQ-NA 0mo</td>
<td>-0.60 (0.65)</td>
<td>-1.87</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>Index of Moderated Mediation</td>
<td>0.30 (0.30)</td>
<td>-0.29</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td><strong>PARQ-H 0mo -&gt; CCNES-U 0mo -&gt; ERQ-S 0mo</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>0.19 (0.35)</td>
<td>-0.50</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>0.37 (0.38)</td>
<td>-0.36</td>
<td>1.11</td>
<td></td>
</tr>
<tr>
<td>+1 SD EATQ-NA 0mo</td>
<td>0.55 (0.44)</td>
<td>-0.31</td>
<td>1.42</td>
<td></td>
</tr>
<tr>
<td>Index of Moderated Mediation</td>
<td>0.31 (0.24)</td>
<td>-0.16</td>
<td>0.79</td>
<td></td>
</tr>
<tr>
<td><strong>Total Indirect Effect</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>-1.03 (1.16)</td>
<td>-3.31</td>
<td>1.24</td>
<td></td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>-1.60 (1.29)</td>
<td>-4.13</td>
<td>0.92</td>
<td></td>
</tr>
<tr>
<td>+1 SD EATQ-NA 0mo</td>
<td>-2.17 (1.57)</td>
<td>-5.24</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td><strong>Total Direct Effect</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>4.45 (3.08)</td>
<td>-1.48</td>
<td>10.48</td>
<td></td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>3.88 (3.08)</td>
<td>-2.16</td>
<td>9.92</td>
<td></td>
</tr>
<tr>
<td>+1 SD EATQ-NA 0mo</td>
<td>3.32 (3.17)</td>
<td>-2.89</td>
<td>9.52</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, PARQ-H 0mo = Parental Acceptance-Rejection Questionnaire-Hostility Subscale at baseline, EATQ-NA 0mo = Early Adolescent Temperament Questionnaire-Revised Negative Affect Subscale at baseline, CCNES-S 0mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at baseline, CCNES-U 0mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at baseline.
Emotions Scale-Unsupportive Subscale at baseline, ERQ-S 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at baseline.

**Model 3**

Model 3 examined longitudinal pathways hypothesized to predict cognitive reappraisal at 12 months.

**Test of Model Fit.** Model fit was poor across all fit indices assessed: $\chi^2(7) = 285.26$, $p < .001$; CFI = 0.34; TLI = 0.00; RMSEA = 0.52. Thus, the full results for Model 3 presented below should be interpreted with caution, given poor model fit.

**Tests of Direct and Indirect Effects.** Results of the moderated mediation path analysis for Model 3 are presented in Table 14 and Figure 8. Parental warmth (PARQ-W 0mo) and hostility (PARQ-H 0mo) covaried significantly in the specified model ($b = -0.03[0.01]$, 95% CI [-0.04, -0.02], $p < .001$). Consistent with hypotheses, warmth at baseline (PARQ-W 0mo) predicted significantly greater supportive parenting at four months (CCNES-S 4mo; $b = 2.02\ [0.50]$, 95% CI [1.05, 2.99], $p < .001$) and significantly lower unsupportive parenting at four months (CCNES-U 4mo; $b = -0.79\ [0.37]$, 95% CI [-1.53, -0.06], $p = .03$). Inconsistent with hypotheses, however, hostility at baseline (PARQ-H 0mo) did not significantly predict either supportive (CCNES-S 4mo; $b = 0.09\ [0.19]$, 95% CI [-0.28, 0.47], $p = .63$) or unsupportive parenting at four months (CCNES-U 4mo; $b = 0.15\ [0.16]$, 95% CI [-0.15, 0.46], $p = .33$). The proportion of variance explained for CCNES-S 4mo ($R^2 = .18, p = .01$) but not CCNES-U 4mo ($R^2 = .07, p = .17$) scores was statistically significant, suggesting that baseline parental warmth and hostility explained 18% of the variance in supportive parenting outcomes at four months,
and that parental warmth and hostility explained 7% of the variance in unsupportive parenting outcomes at four months.

Inconsistent with hypotheses, supportive parenting (CCNES-S 4mo; \( b = -1.26 \) [3.69], 95% CI [-8.48, 5.97], \( p = .73 \)), unsupportive parenting (CCNES-U 4mo; \( b = -3.99 \) [3.43], 95% CI [-10.71, 2.74], \( p = .25 \)), adolescent trait negative affect (EATQ-NA 0mo; \( b = -9.81 \) [7.41], 95% CI [-24.33, 4.71], \( p = .91 \)), and the interaction between adolescent trait negative affect and supportive parenting (CCNES-S 4mo x EATQ-NA 0mo; \( b = 0.76 \) [1.29], 95% CI [-1.78, 3.29], \( p = .56 \)) were not significant predictors of reappraisal outcomes at 12 months (ERQ-R 12mo). However, the interaction between adolescent trait negative affect and unsupportive parenting (CCNES-U 4mo x EATQ-NA 0mo; \( b = 1.95 \) [1.00], 95% CI [-0.01, 3.91], \( p = .05 \)) and parental hostility at baseline (PARQ-H 0mo; \( b = -3.76 \) [1.58], 95% CI [-6.85, -0.67], \( p = .02 \)) were significant predictors of reappraisal outcomes (ERQ-R 12mo). Furthermore, the covariates of sex (\( b = -1.08 \) [1.24], 95% CI [-3.51, 1.35], \( p = .38 \)) and age at baseline (\( b = 1.03 \) [0.62], 95% CI [-0.17, 2.24], \( p = .09 \)) were not significant predictors of ERQ-R 12mo scores. Finally, the proportion of variance explained for ERQ-R 12mo scores by all variables in the model was not statistically significant (\( R^2 = .40, p = .08 \)).

**Table 14**

Path Analysis of Moderated Mediation for Hypothesized Longitudinal Model Predicting Reappraisal

<table>
<thead>
<tr>
<th></th>
<th>( R^2 )</th>
<th>( p )</th>
<th>( b (SE) )</th>
<th>95% CI</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERQ-R 12mo on</td>
<td>(.42)</td>
<td>(.06^*)</td>
<td>(-1.45 (4.53))</td>
<td>(-10.33, 7.44)</td>
<td>(.75)</td>
</tr>
<tr>
<td>CCNES-S 4mo</td>
<td></td>
<td></td>
<td>(-4.48 (3.51))</td>
<td>(-11.35, 2.40)</td>
<td>(.20)</td>
</tr>
<tr>
<td>CCNES-U 4mo</td>
<td></td>
<td></td>
<td>()</td>
<td>()</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
<td>-9.98</td>
<td>8.58</td>
<td>-26.80</td>
<td>6.84</td>
<td></td>
</tr>
<tr>
<td>CCNES-S 4mo x EATQ-NA 0mo</td>
<td>0.77</td>
<td>1.60</td>
<td>-2.35</td>
<td>3.90</td>
<td></td>
</tr>
<tr>
<td>CCNES-U 4mo x EATQ-NA 0mo</td>
<td>2.04</td>
<td>1.02</td>
<td>0.03</td>
<td>4.04</td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>1.11</td>
<td>5.07</td>
<td>-8.83</td>
<td>11.05</td>
<td></td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>-3.58</td>
<td>1.60</td>
<td>-6.71</td>
<td>-0.45</td>
<td></td>
</tr>
<tr>
<td>CCNES-S 4mo on</td>
<td>.18</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>2.01</td>
<td>0.49</td>
<td>1.04</td>
<td>2.98</td>
<td></td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.09</td>
<td>0.19</td>
<td>-0.28</td>
<td>0.47</td>
<td></td>
</tr>
<tr>
<td>CCNES-U 4mo on</td>
<td>.07</td>
<td>.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>-0.80</td>
<td>0.38</td>
<td>-1.54</td>
<td>-0.07</td>
<td></td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.15</td>
<td>0.16</td>
<td>-0.16</td>
<td>0.46</td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo with PARQ-H 0mo</td>
<td>-0.03</td>
<td>0.01</td>
<td>-0.04</td>
<td>-0.02</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, PARQ-H 0mo = Parental Acceptance-Rejection Questionnaire-Hostility Subscale at baseline, EATQ-NA 0mo = Early Adolescent Temperament Questionnaire-Revised Negative Affect Subscale at baseline, CCNES-S 4mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at 4 months, CCNES-U 4mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at 4 months, ERQ-R 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at 12 months.

†p < .10, *p < .05, **p < .01, ***p < .001.
Figure 8

Path Diagram of the Prospective Effects of Parenting Style on Adolescent Cognitive Reappraisal Through Parental Socialization of Emotion Regulation

Note. *p < .05, **p < .01, ***p < .001.

Conditional Direct and Indirect Effects. The conditional direct and indirect effects for Model 3 can be found in Table 15. Contrary to hypotheses, adolescent negative affectivity at baseline did not significantly moderate the specific indirect effect of warmth at baseline on reappraisal at 12 months through supportive parenting at 4 months ($b = 1.52$ [2.66], 95% CI [-3.68, 6.73], $p = .57$), the specific indirect effect of warmth at baseline on suppression at 12 months through unsupportive parenting at 4 months ($b = -0.60$ [1.04], 95% CI [-2.63, 1.43], $p = .56$), the specific indirect effect of hostility at baseline on suppression at 12 months through supportive parenting at 4 months ($b = 0.18$ [0.37], 95% CI [-0.55, 0.91], $p = .63$), or the specific indirect effect of hostility at baseline on suppression at 12 months through unsupportive parenting at 4 months ($b = 0.30$ [0.36], 95% CI [-0.41, 1.00], $p = .41$). Similarly, contrary to
hypotheses, adolescent negative affectivity at baseline did not significantly moderate either the total indirect or total direct effects on reappraisal at 12 months. Thus, results did not support adolescent negative affectivity as a moderator for Model 3.

Table 15

*Conditional Indirect and Direct Effects of Hypothesized Longitudinal Model Predicting Reappraisal*

<table>
<thead>
<tr>
<th></th>
<th>b (SE)</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
</tr>
<tr>
<td><strong>PARQ-W 0mo -&gt; CCNES-S 4mo -&gt; ERQ-R 12mo</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>0.65 (2.31)</td>
<td>-3.86</td>
<td>5.17</td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>1.54 (1.69)</td>
<td>-1.77</td>
<td>4.85</td>
</tr>
<tr>
<td>+1 SD EATQ-NA 0mo</td>
<td>2.43 (2.69)</td>
<td>-2.84</td>
<td>7.70</td>
</tr>
<tr>
<td>Index of Moderated Mediation</td>
<td>1.55 (3.24)</td>
<td>-4.79</td>
<td>7.90</td>
</tr>
<tr>
<td><strong>PARQ-H 0mo -&gt; CCNES-S 4mo -&gt; ERQ-R 12mo</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>0.03 (0.12)</td>
<td>-0.20</td>
<td>0.26</td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>0.07 (0.16)</td>
<td>-0.25</td>
<td>0.39</td>
</tr>
<tr>
<td>+1 SD EATQ-NA 0mo</td>
<td>0.11 (0.26)</td>
<td>-0.40</td>
<td>0.62</td>
</tr>
<tr>
<td>Index of Moderated Mediation</td>
<td>0.19 (0.39)</td>
<td>-0.58</td>
<td>0.96</td>
</tr>
<tr>
<td><strong>PARQ-W 0mo -&gt; CCNES-U 4mo -&gt; ERQ-R 12mo</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>-0.15 (1.13)</td>
<td>-2.36</td>
<td>2.05</td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>-1.09 (0.96)</td>
<td>-2.97</td>
<td>0.78</td>
</tr>
<tr>
<td>+1 SD EATQ-NA 0mo</td>
<td>-2.03 (1.17)</td>
<td>-4.34</td>
<td>0.27</td>
</tr>
<tr>
<td>Index of Moderated Mediation</td>
<td>-0.63 (1.29)</td>
<td>-3.15</td>
<td>1.91</td>
</tr>
<tr>
<td><strong>PARQ-H 0mo -&gt; CCNES-U 4mo -&gt; ERQ-R 12mo</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1 SD EATQ-NA 0mo</td>
<td>0.03 (0.21)</td>
<td>-0.38</td>
<td>0.44</td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>0.20 (0.26)</td>
<td>-0.31</td>
<td>0.72</td>
</tr>
</tbody>
</table>
+1 SD EATQ-NA 0mo 0.38 (0.43) -0.47 1.22 .38  
Index of Moderated Mediation 0.31 (0.37) -0.43 1.04 .41  
**Total Indirect Effect**

-1 SD EATQ-NA 0mo 0.56 (2.84) -5.00 6.12 .84  
Mean EATQ-NA 0mo 0.72 (1.91) -3.02 4.47 .71  
+1 SD EATQ-NA 0mo 0.89 (3.04) -5.07 6.84 .77  
**Total Direct Effect**

-1 SD EATQ-NA 0mo -1.91 (5.16) -12.01 8.20 .71  
Mean EATQ-NA 0mo -1.74 (5.61) -12.74 9.25 .76  
+1 SD EATQ-NA 0mo -1.58 (6.80) -14.91 11.75 .82  

**Note.** PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, PARQ-H 0mo = Parental Acceptance-Rejection Questionnaire-Hostility Subscale at baseline, EATQ-NA 0mo = Early Adolescent Temperament Questionnaire-Revised Negative Affect Subscale at baseline, CCNES-S 4mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at 4 months, CCNES-U 4mo = Coping with Children’s Negative Emotions Scale-Unsupported Subscale at 4 months, ERQ-R 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at 12 months.  
†p < .10.  

**Model 4**

Model 4 examined longitudinal pathways hypothesized to predict expressive suppression at 12 months.  

**Test of Model Fit.** Model fit was poor across all fit indices assessed: \( \chi^2(21) = 257.33, p \) < .001; CFI = 0.45; TLI = 0.00; RMSEA = 0.49. Thus, the full results for Model 4 presented below should be interpreted with caution, given poor model fit.
Tests of Direct and Indirect Effects. Results of the moderated mediation path analysis for Model 4 are presented in Table 16 and Figure 9. Parental warmth (PARQ-W 0mo) and hostility (PARQ-H 0mo) covaried significantly in the specified model ($b = -0.03 \ [0.01]$, 95% CI [-0.04, -0.02], $p < .001$). Consistent with hypotheses, warmth at baseline (PARQ-W 0mo) predicted significantly greater supportive parenting at four months (CCNES-S 4mo; $b = 2.00 \ [0.49]$, 95% CI [1.04, 2.97], $p < .001$) and significantly lower unsupportive parenting at four months (CCNES-U 4mo; $b = -0.82 \ [0.36]$, 95% CI [-1.54, -0.11], $p = .02$). Inconsistent with hypotheses, however, hostility at baseline (PARQ-H 0mo) did not significantly predict either supportive (CCNES-S 4mo; $b = 0.10 \ [0.19]$, 95% CI [-0.28, 0.47], $p = .62$) or unsupportive parenting at four months (CCNES-U 4mo; $b = 0.16 \ [0.16]$, 95% CI [-0.15, 0.46], $p = .31$). The proportion of variance explained for CCNES-S 4mo ($R^2 = .18$, $p = .01$) but not CCNES-U 4mo ($R^2 = .08$, $p = .14$) scores was statistically significant, suggesting that parental warmth and hostility explained 18% of the variance in supportive parenting outcomes at four months, and that parental warmth and hostility explained 8% of the variance in unsupportive parenting outcomes at four months.

Inconsistent with hypotheses, supportive parenting (CCNES-S 4mo; $b = 1.09 \ [0.89]$, 95% CI [-0.67, 2.84], $p = .23$), adolescent trait negative affect (EATQ-NA 0mo; $b = 2.49 \ [2.10]$, 95% CI [-1.63, 6.60], $p = .24$), and the interaction between adolescent trait negative affect and supportive parenting (CCNES-S 4mo x EATQ-NA 0mo; $b = 0.35 \ [0.32]$, 95% CI [-0.28, 0.97], $p = .28$) were not significant predictors of suppression outcomes at 12 months (ERQ-S 12mo). However, unsupportive parenting (CCNES-U 4mo; $b = 3.28 \ [1.23]$, 95% CI [0.86, 5.69], $p = .008$), and the interaction between adolescent trait negative affect and unsupportive parenting (CCNES-U 4mo x EATQ-NA 0mo; $b = -0.84 \ [0.38]$, 95% CI [-1.59, -0.10], $p = .03$) were
significant predictors of suppression outcomes (ERQ-S 12mo). Furthermore, the covariates of sex ($b = -0.61 [0.81], 95\% \text{ CI} [-2.20, 0.98], p = .45$) and age at baseline ($b = 0.11 [0.50], 95\% \text{ CI} [-0.88, 1.09], p = .83$) were not significant predictors of ERQ-S 12mo scores. Finally, the proportion of variance explained for ERQ-S 12mo scores by all variables in the model was statistically significant ($R^2 = .34, p = .008$), accounting for 34\% of the variance.

**Table 16**

*Path Analysis of Moderated Mediation for Hypothesized Longitudinal Model Predicting Suppression*

<table>
<thead>
<tr>
<th></th>
<th>$R^2$</th>
<th>$p$</th>
<th>$b$ (SE)</th>
<th>95% CI</th>
<th>Lower</th>
<th>Upper</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERQ-S 12mo on</td>
<td>.33</td>
<td>.008**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCNES-S 4mo</td>
<td>1.08 (0.87)</td>
<td>-0.62</td>
<td>2.79</td>
<td>.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCNES-U 4mo</td>
<td>3.28 (1.22)</td>
<td>0.89</td>
<td>5.67</td>
<td>.007**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EATQ-NA 0mo</td>
<td>2.53 (2.03)</td>
<td>-1.45</td>
<td>6.51</td>
<td>.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCNES-S 4mo x EATQ-NA 0mo</td>
<td>0.34 (0.31)</td>
<td>-0.27</td>
<td>0.94</td>
<td>.28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCNES-U 4mo x EATQ-NA 0mo</td>
<td>-0.86 (0.38)</td>
<td>-1.61</td>
<td>-0.11</td>
<td>.03*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>-1.01 (2.48)</td>
<td>-5.87</td>
<td>3.84</td>
<td>.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>1.04 (1.38)</td>
<td>-1.67</td>
<td>3.74</td>
<td>.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCNES-S 4mo on PARQ-W 0mo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>2.01 (0.49)</td>
<td>1.05</td>
<td>2.97</td>
<td>.00***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARQ-H 0mo</td>
<td>0.10 (0.19)</td>
<td>-0.28</td>
<td>0.47</td>
<td>.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCNES-U 4mo on PARQ-W 0mo with PARQ-H 0mo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Note. PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, PARQ-H 0mo = Parental Acceptance-Rejection Questionnaire-Hostility Subscale at baseline, EATQ-NA 0mo = Early Adolescent Temperament Questionnaire-Revised Negative Affect Subscale at baseline, CCNES-S 4mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at 4 months, CCNES-U 4mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at 4 months, ERQ-S 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at 12 months.

*p < .05, **p < .01, ***p < .001.

Figure 9

Path Diagram of the Prospective Effects of Parenting Style on Adolescent Suppression Through Parental Socialization of Emotion Regulation

Note. Bolded lines signify a statistically significant indirect effect.

*p < .05, **p < .01, ***p < .001.
Conditional Direct and Indirect Effects. The conditional direct and indirect effects for Model 4 can be found in Table 17. Contrary to hypotheses, adolescent negative affectivity at baseline did not significantly moderate the specific indirect effect of warmth at baseline on suppression at 12 months through supportive parenting at 4 months ($b = 0.69 [-0.67], 95\% \text{ CI } [-0.63, 2.01], p = .30$), the specific indirect effect of warmth at baseline on suppression at 12 months through unsupportive parenting at 4 months ($b = -0.28 [0.31], 95\% \text{ CI } [-0.89, 0.32], p = .35$), the specific indirect effect of hostility at baseline on suppression at 12 months through supportive parenting at 4 months ($b = -0.08 [0.17], 95\% \text{ CI } [-0.41, 0.25], p = .63$), or the specific indirect effect of hostility at baseline on suppression at 12 months through unsupportive parenting at 4 months ($b = -0.13 [0.15], 95\% \text{ CI } [-0.43, 0.17], p = .40$). However, there was a significant specific indirect effect of parental warmth at baseline on suppression at 12 months through supportive parenting at 4 months (at EATQ-NA 0mo mean: $b = 4.16 [1.63], 95\% \text{ CI } [0.97, 7.35], p = .01$), though in the opposite direction hypothesized such that higher parental warmth predicted greater levels of supportive responses, which in turn predicted greater levels of suppression.

Contrary to hypotheses, adolescent negative affectivity at baseline did not significantly moderate the total direct effects on suppression at 12 months. However, consistent with hypotheses adolescent negativity at baseline significantly moderated the total indirect effects on suppression at 12 months. Specifically, the total indirect effect was not significant at one standard deviation below the mean of negative affectivity ($b = 3.05 [1.80], 95\% \text{ CI } [-0.48, 6.57], p = .09$), but was significant at both the mean ($b = 3.78 [1.89], 95\% \text{ CI } [0.08, 7.48], p = .045$) and one standard deviation above the mean of negative affectivity ($b = 4.51 [2.10], 95\% \text{ CI } [0.39,
8.63], \( p = .03 \)). Thus, suppression at 12 months was significantly greater at higher levels of adolescent negative affectivity at baseline.

Table 17

*Conditional Indirect and Direct Effects of Hypothesized Longitudinal Model Predicting Suppression*

<table>
<thead>
<tr>
<th></th>
<th>( b (SE) )</th>
<th>Lower</th>
<th>Upper</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PARQ-W 0mo -&gt; CCNES-S 0mo -&gt; ERQ-S 0mo</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(-1 SD EATQ-NA 0mo)</td>
<td>3.72 (1.48)</td>
<td>0.82</td>
<td>6.62</td>
<td>.01*</td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>4.11 (1.61)</td>
<td>0.95</td>
<td>7.26</td>
<td>.01*</td>
</tr>
<tr>
<td>(+1 SD EATQ-NA 0mo)</td>
<td>4.49 (1.81)</td>
<td>0.94</td>
<td>8.05</td>
<td>.01*</td>
</tr>
<tr>
<td>Index of Moderated Mediation</td>
<td>0.67 (0.65)</td>
<td>-0.61</td>
<td>1.96</td>
<td>.30</td>
</tr>
<tr>
<td><strong>PARQ-H 0mo -&gt; CCNES-S 0mo -&gt; ERQ-S 0mo</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(-1 SD EATQ-NA 0mo)</td>
<td>0.18 (0.36)</td>
<td>-0.52</td>
<td>0.88</td>
<td>.62</td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>0.20 (0.39)</td>
<td>-0.58</td>
<td>0.97</td>
<td>.62</td>
</tr>
<tr>
<td>(+1 SD EATQ-NA 0mo)</td>
<td>0.21 (0.43)</td>
<td>-0.64</td>
<td>1.06</td>
<td>.62</td>
</tr>
<tr>
<td>Index of Moderated Mediation</td>
<td>-0.08 (0.17)</td>
<td>-0.41</td>
<td>0.25</td>
<td>.63</td>
</tr>
<tr>
<td><strong>PARQ-W 0mo -&gt; CCNES-U 0mo -&gt; ERQ-S 0mo</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(-1 SD EATQ-NA 0mo)</td>
<td>-1.07 (0.84)</td>
<td>-2.71</td>
<td>0.57</td>
<td>.20</td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>-0.67 (0.74)</td>
<td>-2.11</td>
<td>0.77</td>
<td>.36</td>
</tr>
<tr>
<td>(+1 SD EATQ-NA 0mo)</td>
<td>-0.27 (0.71)</td>
<td>-1.66</td>
<td>1.12</td>
<td>.70</td>
</tr>
<tr>
<td>Index of Moderated Mediation</td>
<td>-0.27 (0.30)</td>
<td>-0.85</td>
<td>0.31</td>
<td>.35</td>
</tr>
<tr>
<td><strong>PARQ-H 0mo -&gt; CCNES-U 0mo -&gt; ERQ-S 0mo</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(-1 SD EATQ-NA 0mo)</td>
<td>0.21 (0.25)</td>
<td>-0.28</td>
<td>0.69</td>
<td>.40</td>
</tr>
<tr>
<td>Mean EATQ-NA 0mo</td>
<td>0.13 (0.18)</td>
<td>-0.23</td>
<td>0.49</td>
<td>.47</td>
</tr>
<tr>
<td>(+1 SD EATQ-NA 0mo)</td>
<td>0.05 (0.14)</td>
<td>-0.23</td>
<td>0.33</td>
<td>.71</td>
</tr>
</tbody>
</table>
Index of Moderated Mediation  -0.14 (0.16)  -0.44  0.17  .38

**Total Indirect Effect**

-1 SD EATQ-NA 0mo  3.04 (1.78)  -0.45  6.53  .09†
Mean EATQ-NA 0mo  3.76 (1.87)  0.10  7.43  .04*
+1 SD EATQ-NA 0mo  4.49 (2.08)  0.42  8.56  .03*

**Total Direct Effect**

-1 SD EATQ-NA 0mo  3.06 (3.66)  -4.10  10.23  .40
Mean EATQ-NA 0mo  3.79 (3.66)  -3.39  10.96  .30
+1 SD EATQ-NA 0mo  4.51 (3.73)  -2.80  11.82  .23

*Note. PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, PARQ-H 0mo = Parental Acceptance-Rejection Questionnaire-Hostility Subscale at baseline, EATQ-NA 0mo = Early Adolescent Temperament Questionnaire-Revised Negative Affect Subscale at baseline, CCNES-S 4mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at 4 months, CCNES-U 4mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at 4 months, ERQ-S 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at 12 months.*

†p < .10, *p < .05.

**Ancillary Analyses**

To further evaluate the models being examined, a series of models were run to better identify any effects operating within the hypothesized models. Results are summarized in Table 18 and Table 19.
### Table 18

**Model Fit for Models Under Consideration**

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>Correction Factor</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
<th>BIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>248.27</td>
<td>7</td>
<td>&lt; .001</td>
<td>3.1750</td>
<td>0.44</td>
<td>0.00</td>
<td>0.48</td>
<td>2956.45</td>
</tr>
<tr>
<td>Model 1b</td>
<td>1.43</td>
<td>1</td>
<td>.23</td>
<td>2.8710</td>
<td>0.99</td>
<td>0.90</td>
<td>0.05</td>
<td>1613.58</td>
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<tr>
<td>Model 1c</td>
<td>325.32</td>
<td>10</td>
<td>&lt; .001</td>
<td>2.5914</td>
<td>0.19</td>
<td>0.00</td>
<td>0.46</td>
<td>2884.89</td>
</tr>
<tr>
<td>Model 1d*</td>
<td>1.18</td>
<td>1</td>
<td>.28</td>
<td>2.8414</td>
<td>0.99</td>
<td>0.95</td>
<td>0.04</td>
<td>1548.14</td>
</tr>
<tr>
<td>Model 1e</td>
<td>365.77</td>
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<td>2.3139</td>
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<td>0.00</td>
<td>0.49</td>
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<td>0.46</td>
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<tr>
<td>Model 2</td>
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<td>3.5382</td>
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<td>0.00</td>
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<td>2749.09</td>
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<td>Model 2b</td>
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<td>.23</td>
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<td>0.85</td>
<td>0.05</td>
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<td>Model 2c</td>
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<td>2.7840</td>
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<td>0.00</td>
<td>0.44</td>
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<td>0.94</td>
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<td>0.08</td>
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<tr>
<td>Model 3</td>
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<td>2.4232</td>
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<td>0.00</td>
<td>0.52</td>
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<td>0.88</td>
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<td>1267.97</td>
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<td>0.00</td>
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<td>Model 4d*</td>
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<td>.22</td>
<td>0.9287</td>
<td>0.99</td>
<td>0.91</td>
<td>0.06</td>
<td>1171.53</td>
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<tr>
<td>Model 4e</td>
<td>330.023</td>
<td>10</td>
<td>&lt; .001</td>
<td>2.1604</td>
<td>0.23</td>
<td>0.00</td>
<td>0.48</td>
<td>2332.54</td>
</tr>
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<tr>
<td>Model 4f</td>
<td>0.16</td>
<td>1</td>
<td>.69</td>
<td>0.7996</td>
<td>1.00</td>
<td>1.00</td>
<td>0.00</td>
<td>1189.49</td>
</tr>
</tbody>
</table>

*Note.* * Indicates final models selected for evaluation.

**Table 19**

*Satorra-Bentler Scaled Chi-Square Difference Test Results for Model Comparisons*

<table>
<thead>
<tr>
<th></th>
<th>$\Delta \chi^2$</th>
<th>$\Delta df$</th>
<th>$p$</th>
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<tbody>
<tr>
<td>1 vs. 1b</td>
<td>243.10</td>
<td>6</td>
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<tr>
<td>1 vs. 1c</td>
<td>62.66</td>
<td>3</td>
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<tr>
<td>1 vs. 1e</td>
<td>76.48</td>
<td>6</td>
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</tr>
<tr>
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<td>385.67</td>
<td>3</td>
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</tr>
<tr>
<td>1 vs. 1f</td>
<td>232.59</td>
<td>6</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>2 vs. 2b</td>
<td>213.20</td>
<td>6</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>2 vs. 2c</td>
<td>55.04</td>
<td>3</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>2 vs. 2d</td>
<td>212.98</td>
<td>6</td>
<td>&lt; .001</td>
</tr>
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</tr>
<tr>
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<td>3 vs. 3d</td>
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</tr>
<tr>
<td>4 vs. 4c</td>
<td>17.39</td>
<td>3</td>
<td>.001</td>
</tr>
</tbody>
</table>
Comparison of Model 1 Variants

Using Model 1 as the initial point of comparison, variants of the original model with less complexity were evaluated for model fit.

Model 1b: No Moderator Variable. Model 1b examined cross-sectional pathways from parental warmth and hostility hypothesized to predict cognitive reappraisal. Adolescent negative affectivity (EATQ-NA) was excluded from Model 1b.

Test of Model Fit. Model fit was excellent across all fit indices assessed: \( \chi^2(1) = 1.43, p = .23 \); CFI = 0.99; TLI = 0.90; RMSEA = 0.05; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 1 and Model 1b was significant (\( \Delta \chi^2[6] = 243.10, p < .001 \); see Table 19), suggesting that Model 1b has significantly better fit than Model 1, and thus Model 1b should be retained.

Model 1c: Warmth to Reappraisal. Model 1c examined cross-sectional pathways from parental warmth hypothesized to predict cognitive reappraisal.

Test of Model Fit. Model fit was poor across all fit indices assessed: \( \chi^2(10) = 325.32, p < .001 \); CFI = 0.19; TLI = 0.00; RMSEA = 0.46; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 1 and Model 1c was significant (\( \Delta \chi^2[3] = 62.66, p < .001 \); see Table 19), and chi-square fit indices were smaller for Model 1 (\( \chi^2[7] = 248.27, p < .001 \)) than Model 1c (\( \chi^2[10] = 325.32, p < .001 \)), suggesting that Model 1 has significantly better fit than Model 1c, and thus Model 1 should be retained.
Model 1e: Hostility to Reappraisal. Model 1e examined cross-sectional pathways from parental hostility hypothesized to predict cognitive reappraisal.

Test of Model Fit. Model fit was poor across all fit indices assessed: $\chi^2(10) = 365.77, p < .001; \text{CFI} = 0.20; \text{TLI} = 0.00; \text{RMSEA} = 0.49$; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 1 and Model 1e was significant ($\Delta \chi^2[3] = 76.48, p < .001$; see Table 19), and chi-square fit indices were smaller for Model 1 ($\chi^2[7] = 248.27, p < .001$) than Model 1c ($\chi^2[10] = 365.77, p < .001$), suggesting that Model 1 has significantly better fit than Model 1e, and thus Model 1 should be retained.

Model 1d: Warmth to Reappraisal, No Moderator Variable. Model 1d examined cross-sectional pathways from parental warmth to predict cognitive reappraisal. Adolescent negative affectivity (EATQ-NA) was excluded from Model 1d.

Test of Model Fit. Model fit was excellent across all fit indices assessed: $\chi^2(1) = 1.18, p = .28; \text{CFI} = 0.99; \text{TLI} = 0.95; \text{RMSEA} = 0.04$; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 1 and Model 1d was significant ($\Delta \chi^2[6] = 385.67, p < .001$; see Table 19), suggesting that Model 1b should be retained. Further, comparison of fit indices for Model 1d ($\chi^2[1] = 1.18; \text{CFI} = 0.99; \text{TLI} = 0.95; \text{RMSEA} = 0.04, \text{BIC} = 1548.14$) indicated better fit than for Model 1b ($\chi^2[1] = 1.43; \text{CFI} = 0.99; \text{TLI} = 0.90; \text{RMSEA} = 0.05, \text{BIC} = 1613.58$), suggesting that Model 1d should be retained.

Model 1f: Hostility to Reappraisal, No Moderator Variable. Model 1f examined cross-sectional pathways from parental hostility to predict cognitive reappraisal. Adolescent negative affectivity (EATQ-NA) was excluded from Model 1f.

Test of Model Fit. Model fit was poor across most fit indices assessed: $\chi^2(1) = 2.93, p = .09; \text{CFI} = 0.91; \text{TLI} = 0.46; \text{RMSEA} = 0.11$; see Table 18. Results of the Satorra-Bentler scaled
chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 1 and Model 1f was significant ($\Delta \chi^2[6] = 232.59, p < .001$; see Table 19), suggesting that Model 1b should be retained. Further, comparison of fit indices for Model 1b ($\chi^2[1] = 1.43; \text{CFI} = 0.99; \text{TLI} = 0.90; \text{RMSEA} = 0.05, \text{BIC} = 1613.58$) indicated better fit than for Model 1f ($\chi^2[1] = 2.93; \text{CFI} = 0.91; \text{TLI} = 0.46; \text{RMSEA} = 0.11, \text{BIC} = 1574.28$), suggesting that Model 1b should be retained.

**Comparison of Model 2 Variants**

Using Model 2 as the initial point of comparison, variants of the original model with less complexity were evaluated for model fit.

**Model 2b: No Moderator Variable.** Model 1b examined cross-sectional pathways from parental warmth and hostility hypothesized to predict suppression. Adolescent negative affectivity (EATQ-NA) was excluded from Model 2b.

**Test of Model Fit.** Model fit was fair across the fit indices assessed: $\chi^2(1) = 1.43, p = .23; \text{CFI} = 0.98; \text{TLI} = 0.85; \text{RMSEA} = 0.05$; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 2 and Model 2b was significant ($\Delta \chi^2[6] = 213.20, p < .001$; see Table 19), suggesting that Model 2b has significantly better fit than Model 2, and thus Model 2b should be retained.

**Model 2c: Warmth to Suppression.** Model 2c examined cross-sectional pathways from parental warmth hypothesized to predict suppression.

**Test of Model Fit.** Model fit was poor across all fit indices assessed: $\chi^2(10) = 301.08, p < .001; \text{CFI} = 0.19; \text{TLI} = 0.00; \text{RMSEA} = 0.44$; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 2 and Model 2c was significant ($\Delta \chi^2[3] = 55.04, p < .001$; see Table 19), and chi-square fit indices were smaller.
for Model 2 ($\chi^2[7] = 220.97, p < .001$) than Model 2c ($\chi^2[10] = 301.08, p < .001$), suggesting that Model 2 has significantly better fit than Model 2c, and thus Model 2 should be retained.

**Model 2e: Hostility to Suppression.** Model 2e examined cross-sectional pathways from parental hostility hypothesized to predict suppression.

**Test of Model Fit.** Model fit was poor across all fit indices assessed: $\chi^2(10) = 342.28, p < .001; \text{CFI} = 0.18; \text{TLI} = 0.00; \text{RMSEA} = 0.47$; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 2 and Model 2e was significant ($\Delta\chi^2[3] = 1078.38, p < .001$; see Table 19), and chi-square fit indices were smaller for Model 2 ($\chi^2[7] = 220.97, p < .001$) than Model 2e ($\chi^2[10] = 342.28, p < .001$), suggesting that Model 2 has significantly better fit than Model 2e, and thus Model 2 should be retained.

**Model 2d: Warmth to Suppression, No Moderator Variable.** Model 2d examined cross-sectional pathways from parental warmth to predict suppression. Adolescent negative affectivity (EATQ-NA) was excluded from Model 2d.

**Test of Model Fit.** Model fit was excellent across all fit indices assessed: $\chi^2(1) = 1.19, p = .28; \text{CFI} = 0.98; \text{TLI} = 0.94; \text{RMSEA} = 0.04$; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 2 and Model 2d was significant ($\Delta\chi^2[6] = 212.98, p < .001$; see Table 19). Further, comparison of fit indices for Model 2d ($\chi^2[1] = 1.19; \text{CFI} = 0.98; \text{TLI} = 0.94; \text{RMSEA} = 0.04; \text{BIC} = 1503.20$) indicated better fit than for Model 2b ($\chi^2[1] = 1.43; \text{CFI} = 0.99; \text{TLI} = 0.85; \text{RMSEA} = 0.05; \text{BIC} = 1473.23$), suggesting that Model 2d has significantly better fit than Model 2b, and thus Model 2d should be retained.
Model 2f: Hostility to Suppression, No Moderator Variable. Model 2f examined cross-sectional pathways from parental hostility to predict suppression. Adolescent negative affectivity (EATQ-NA) was excluded from Model 2f.

Test of Model Fit. Model fit was fair across most fit indices assessed: $\chi^2 (1) = 2.93, p = .09; \text{CFI} = 0.85; \text{TLI} = 0.08; \text{RMSEA} = 0.11$; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 2 and Model 2f was significant ($\Delta \chi^2 [6] = 232.59, p < .001$; see Table 19), suggesting that Model 2 should be retained. Further, comparison of fit indices for Model 2d ($\chi^2 [1] = 1.19; \text{CFI} = 0.98; \text{TLI} = 0.94; \text{RMSEA} = 0.04; \text{BIC} = 1503.20$) indicated better fit than for Model 2f ($\chi^2 [1] = 2.93; \text{CFI} = 0.85; \text{TLI} = 0.08; \text{RMSEA} = 0.11; \text{BIC} = 1488.70$), suggesting that Model 2d has significantly better fit than Model 2f, and thus Model 2d should be retained.

Comparison of Model 3 Variants

Using Model 3 as the initial point of comparison, variants of the original model with less complexity were evaluated for model fit.

Model 3b: No Moderator Variable. Model 3b examined longitudinal pathways from parental warmth and hostility hypothesized to predict cognitive reappraisal. Adolescent negative affectivity (EATQ-NA) was excluded from Model 3b.

Test of Model Fit. Model fit was fair across all fit indices assessed: $\chi^2 (1) = 1.40, p = .24; \text{CFI} = 0.99; \text{TLI} = 0.88; \text{RMSEA} = 0.05$; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 3 and Model 3b was significant ($\Delta \chi^2 [6] = 258.21, p < .001$; see Table 19), suggesting that Model 3b has significantly better fit than Model 3, and thus Model 3b should be retained.
**Model 3c: Warmth to Reappraisal.** Model 3c examined longitudinal pathways from parental warmth hypothesized to predict cognitive reappraisal.

**Test of Model Fit.** Model fit was poor across all fit indices assessed: $\chi^2(10) = 301.08, p < .001; \text{CFI} = 0.19; \text{TLI} = 0.00; \text{RMSEA} = 0.44$; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 3 and Model 3c was significant ($\Delta \chi^2[3] = 14.24, p = .003$; see Table 19), suggesting that Model 3c has significantly better fit than Model 3, and thus Model 3c should be retained.

**Model 3e: Hostility to Reappraisal.** Model 3e examined longitudinal pathways from parental hostility hypothesized to predict cognitive reappraisal.

**Test of Model Fit.** Model fit was poor across all fit indices assessed: $\chi^2(10) = 346.92, p < .001; \text{CFI} = 0.15; \text{TLI} = 0.00; \text{RMSEA} = 0.49$; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 3 and Model 3e was significant ($\Delta \chi^2[3] = 16.85, p = .001$; see Table 19), and chi-square fit indices were smaller for Model 3 ($\chi^2[7] = 285.26, p < .001$) than Model 3e ($\chi^2[10] = 346.92, p < .001$), suggesting that Model 3 has significantly better fit than Model 3e, and thus Model 3 should be retained.

**Model 3d: Hostility to Reappraisal, No Moderator Variable.** Model 3d examined longitudinal pathways from parental hostility to predict cognitive reappraisal. Adolescent negative affectivity (EATQ-NA) was excluded from Model 3d.

**Test of Model Fit.** Model fit was excellent across all fit indices assessed: $\chi^2(1) = 1.50, p = .22; \text{CFI} = 0.98; \text{TLI} = 0.88; \text{RMSEA} = 0.06$; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 3 and Model 3d was significant ($\Delta \chi^2[6] = 258.04, p < .001$; see Table 19), suggesting that Model 3d should be retained. Further, comparison of fit indices for Model 3d ($\chi^2[1] = 1.50; \text{CFI} = 0.98; \text{TLI} = 0.88;$
RMSEA = 0.06; BIC = 1261.30) indicated better fit than for Model 3b ($\chi^2[1] = 1.40; CFI = 0.99; TLI = 0.88; RMSEA = 0.05; BIC = 1267.97$), suggesting that Model 2d has better fit than Model 2b, and thus Model 2d should be retained.

**Model 3f: Hostility to Reappraisal, No Moderator Variable.** Model 3f examined longitudinal pathways from parental hostility to predict cognitive reappraisal. Adolescent negative affectivity (EATQ-NA) was excluded from Model 3f.  

**Test of Model Fit.** Model fit was excellent across all fit indices assessed: $\chi^2(1) = 0.16, p = .69; CFI = 1.00; TLI = 1.00; RMSEA = 0.00; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 3 and Model 3f was significant ($\Delta \chi^2[6] = 256.52, p < .001; see Table 19), suggesting that Model 3f should be retained. Further, comparison of fit indices for Model 3d ($\chi^2[1] = 1.50; CFI = 0.98; TLI = 0.88; RMSEA = 0.06; BIC = 1261.30$) indicated better fit than for Model 3f ($\chi^2[1] = 0.16; CFI = 1.00; TLI = 1.00; RMSEA = 0.00; BIC = 1276.48$), suggesting that Model 3d has better fit than Model 3f, and thus Model 3d should be retained.

**Comparison of Model 4 Variants**

Using Model 4 as the initial point of comparison, variants of the original model with less complexity were evaluated for model fit.

**Model 4b: No Moderator Variable.** Model 4b examined longitudinal pathways from parental warmth and hostility hypothesized to predict suppression. Adolescent negative affectivity (EATQ-NA) was excluded from Model 4b.

**Test of Model Fit.** Model fit was excellent across all fit indices assessed: $\chi^2(1) = 0.24, p = .24; CFI = 0.99; TLI = 0.89; RMSEA = 0.05; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 4 and Model 4b
was significant ($\Delta \chi^2[6] = 231.70, p < .001$; see Table 19), suggesting that Model 4b has significantly better fit than Model 4, and thus Model 4b should be retained.

**Model 4c: Warmth to Suppression.** Model 4c examined longitudinal pathways from parental warmth hypothesized to predict suppression.

*Test of Model Fit.* Model fit was poor across all fit indices assessed: $\chi^2(10) = 316.24, p < .001$; CFI = 0.27; TLI = 0.00; RMSEA = 0.46; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 4 and Model 4c was significant ($\Delta \chi^2[3] = 17.39, p = .001$; see Table 19), suggesting that Model 4 has significantly better fit than Model 4c, and thus Model 4 should be retained.

**Model 4e: Hostility to Suppression.** Model 4e examined longitudinal pathways from parental hostility hypothesized to predict suppression.

*Test of Model Fit.* Model fit was poor across all fit indices assessed: $\chi^2(10) = 330.02, p < .001$; CFI = 0.23; TLI = 0.00; RMSEA = 0.48; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 4 and Model 4e was significant ($\Delta \chi^2[3] = 21.53, p < .001$; see Table 19), suggesting that Model 4 has significantly better fit than Model 4e, and thus Model 4 should be retained.

**Model 4d: Warmth to Suppression, No Moderator Variable.** Model 4d examined longitudinal pathways from parental warmth to predict suppression. Adolescent negative affectivity (EATQ-NA) was excluded from Model 4d.

*Test of Model Fit.* Model fit was excellent across all fit indices assessed: $\chi^2(1) = 1.49, p = .22$; CFI = 0.99; TLI = 0.91; RMSEA = 0.06; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 4 and Model 4d was significant ($\Delta \chi^2[6] = 231.53, p < .001$; see Table 19), suggesting that Model 4d should be
retained. Further, comparison of fit indices for Model 4d ($\chi^2[1] = 1.49; \text{CFI} = 0.99; \text{TLI} = 0.91$; RMSEA = 0.06; BIC = 1171.53) indicated better fit than for Model 4b ($\chi^2[1] = 1.38; \text{CFI} = 0.99; \text{TLI} = 0.89; \text{RMSEA} = 0.05; \text{BIC} = 1183.76$), suggesting that Model 4d has better fit than Model 4b, and thus Model 4d should be retained.

**Model 4f: Hostility to Suppression, No Moderator Variable.** Model 4f examined longitudinal pathways from parental hostility to predict suppression. Adolescent negative affectivity (EATQ-NA) was excluded from Model 4f.

**Test of Model Fit.** Model fit was excellent across all fit indices assessed: $\chi^2(1) = 0.16, p = .69; \text{CFI} = 1.00; \text{TLI} = 1.00; \text{RMSEA} = 0.00$; see Table 18. Results of the Satorra-Bentler scaled chi-square difference test (Mplus, n.d.; Satorra, 2000) comparing Model 4 and Model 4f was significant ($\Delta \chi^2[6] = 230.29, p < .001$; see Table 19), suggesting that Model 4f should be retained. Further, comparison of fit indices for Model 4d ($\chi^2[1] = 1.49; \text{CFI} = 0.99; \text{TLI} = 0.91$; RMSEA = 0.06; BIC = 1171.53) indicated better fit than for Model 4f ($\chi^2[1] = 0.16; \text{CFI} = 1.00; \text{TLI} = 1.00; \text{RMSEA} = 0.00; \text{BIC} = 1189.49$), suggesting that Model 4d has better fit than Model 4b, and thus Model 4d should be retained.

**Examination of Final Models**

**Model 1d: No Moderator Variable.** Model 1d examined cross-sectional pathways from parental warmth to predict reappraisal. Adolescent negative affectivity (EATQ-NA) was excluded from Model 1d.

**Test of Model Fit.** Model fit was excellent across all fit indices assessed: $\chi^2(1) = 1.18, p = .28; \text{CFI} = 0.99; \text{TLI} = 0.95; \text{RMSEA} = 0.04$. Thus, examination of the direct and indirect effects is indicated.
**Tests of Direct and Indirect Effects.** Results of the mediation path analysis for Model 1d are presented in Table 20 and Figure 10. Consistent with hypotheses, warmth at baseline (PARQ-W 0mo) predicted greater supportive parenting at baseline (CCNES-S 0mo; \( b = 1.69 \ [0.29], 95\% \ CI [1.12, 2.25], p < .001 \)), and predicted lower unsupportive parenting at baseline (CCNES-U 0mo; \( b = -1.07 \ [0.37], 95\% \ CI [-1.79, -0.35], p = .004 \)). The proportion of variance explained for the CCNES-S 0mo \( (R^2 = .19, p = .01) \) was statistically significant, but not for CCNES-U 0mo \( (R^2 = .06, p = .16) \), suggesting that parental warmth and hostility explained 19% of the variance in supportive parenting outcomes, and that parental warmth and hostility explained 6% of the variance in unsupportive parenting outcomes.

Inconsistent with hypotheses, supportive parenting (CCNES-S 0mo; \( b = -0.54 \ [0.80], 95\% \ CI [-2.11, 1.03], p = .50 \)) and unsupportive parenting (CCNES-U 0mo; \( b = 1.35 \ [0.80], 95\% \ CI [-0.21, 2.92], p = .09 \)) were not significant predictors of reappraisal outcomes (ERQ-R 0mo). Finally, the proportion of variance explained for ERQ-R baseline scores by all variables in the model was not statistically significant \( (R^2 = .04, p = .24) \).

Evaluation of the specific indirect effects identified nonsignificant effects of parental warmth through supportive \( (b = -0.91 \ [1.40], 95\% \ CI [-3.65, 1.83], p = .52) \) and unsupportive parenting \( (b = -1.44 \ [1.04], 95\% \ CI [-3.48, 0.60], p = .17) \).

**Table 20**

*Model 1d Cross-Sectional Mediation Path Analysis Warmth to Reappraisal Results*

<table>
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<tr>
<th></th>
<th>( R^2 )</th>
<th>( p )</th>
<th>( b ) (SE)</th>
<th>95% CI</th>
<th>( p )</th>
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<td>.04</td>
<td>.24</td>
<td></td>
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<td></td>
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<tr>
<td>CCNES-S 0mo</td>
<td></td>
<td></td>
<td>-0.54 (0.80)</td>
<td>-2.11</td>
<td>1.03</td>
</tr>
<tr>
<td>CCNES-U 0mo</td>
<td></td>
<td></td>
<td>1.35 (0.80)</td>
<td>-0.21</td>
<td>2.92</td>
</tr>
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</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>6.74 (3.72)</td>
<td>-0.55</td>
<td>14.03</td>
<td>.07(^\dagger)</td>
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</tr>
<tr>
<td><strong>Specific Indirect Effects</strong></td>
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<tr>
<td>PARQ-W 0mo -&gt; CCNES-S 0mo</td>
<td>-0.91 (1.40)</td>
<td>-3.65</td>
<td>1.83</td>
<td>.52</td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo -&gt; CCNES-U 0mo</td>
<td>-1.44 (1.04)</td>
<td>-3.48</td>
<td>0.60</td>
<td>.17</td>
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<td><strong>Direct Effect</strong></td>
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<tr>
<td>PARQ-W 0mo -&gt; ERQ-R 0mo</td>
<td>6.74 (3.72)</td>
<td>-0.55</td>
<td>14.03</td>
<td>.07(^\dagger)</td>
<td></td>
</tr>
<tr>
<td><strong>Total Indirect Effect</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo -&gt; ERQ-R 0mo</td>
<td>-2.35 (1.57)</td>
<td>-5.43</td>
<td>0.73</td>
<td>.20</td>
<td></td>
</tr>
</tbody>
</table>

\(\dagger p < .10, *p < .05, **p < .01, ***p < .001.\)

\(\text{Note. PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, CCNES-S 0mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at baseline, CCNES-U 0mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at baseline, ERQ-R 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at baseline.}\)
Model 2d: Warmth to Suppression, No Moderator Variable. Model 2d examined cross-sectional pathways from parental warmth to predict suppression. Adolescent negative affectivity (EATQ-NA) was excluded from Model 2d.

Test of Model Fit. Model fit was excellent across all fit indices assessed except for TLI: $\chi^2(1) = 1.19$, $p = .28$; CFI = 0.99; TLI = 0.94; RMSEA = 0.04. Thus, examination of the direct and indirect effects is indicated.

Tests of Direct and Indirect Effects. Results of the mediation path analysis for Model 2d are presented in Table 21 and Figure 11. Consistent with hypotheses, warmth at baseline (PARQ-W 0mo) predicted greater supportive parenting at baseline (CCNES-S 0mo; $b = 1.69 [0.29]$, 95% CI [1.12, 2.25], $p < .001$) and lower unsupportive parenting at baseline (CCNES-U 0mo; $b = -
1.07 [0.37], 95% CI [-1.79, -0.35], \( p = .004 \). The proportion of variance explained for the CCNES-S 0mo (\( R^2 = .19, p = .01 \)) but not the CCNES-U 0mo (\( R^2 = .06, p = .16 \)) was statistically significant, suggesting that parental warmth explained 19% of the variance in supportive parenting outcomes, and that parental warmth explained 6% of the variance in unsupportive parenting outcomes.

Inconsistent with hypotheses, supportive parenting (CCNES-S 0mo; \( b = -0.38 \) [0.83], 95% CI [-2.01, 1.25], \( p = .65 \)), unsupportive parenting (CCNES-U 0mo; \( b = 0.52 \) [0.74], 95% CI [-0.92, 1.96], \( p = .48 \)), and parental warmth (PARQ-W 0mo; \( b = 2.86 \) [3.94], 95% CI [-3.10, 8.82], \( p = .35 \)) were not significant predictors of ERQ-S baseline scores. The proportion of variance explained for ERQ-S baseline scores by all variables in the model was not statistically significant (\( R^2 = .01, p = .62 \)).

Finally, evaluation of the specific indirect effects identified nonsignificant effects of parental warmth through supportive (\( b = -0.64 \) [1.44], 95% CI [-3.45, 2.17], \( p = .66 \)) and unsupportive parenting (\( b = -0.56 \) [0.87], 95% CI [-2.25, 1.14], \( p = .52 \)).

Table 21

Model 2d Cross-Sectional Mediation Path Analysis Warmth to Suppression Results

<table>
<thead>
<tr>
<th></th>
<th>( R^2 )</th>
<th>( p )</th>
<th>( b ) (( SE ))</th>
<th>( 95% ) CI</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>ERQ-S 0mo on</td>
<td>.01</td>
<td>.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCNES-S 0mo</td>
<td></td>
<td></td>
<td>-0.38 (0.83)</td>
<td>-2.01</td>
<td>1.25</td>
</tr>
<tr>
<td>CCNES-U 0mo</td>
<td></td>
<td></td>
<td>0.52 (0.74)</td>
<td>-0.92</td>
<td>1.96</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td></td>
<td></td>
<td>2.86 (3.04)</td>
<td>-3.10</td>
<td>8.82</td>
</tr>
<tr>
<td>CCNES-S 0mo on</td>
<td>.19</td>
<td>.01*</td>
<td>1.69 (0.29)</td>
<td>1.12</td>
<td>2.25</td>
</tr>
</tbody>
</table>
CCNES-U 0mo on PARQ-W 0mo

<table>
<thead>
<tr>
<th></th>
<th>.06</th>
<th>.16</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARQ-W 0mo</td>
<td>-1.07 (0.37)</td>
<td>-1.79</td>
</tr>
</tbody>
</table>

**Specific Indirect Effects**

PARQ-W 0mo -> CCNES-S 0mo

<p>| | | | | |</p>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>PARQ-W 0mo -&gt; CCNES-S 0mo</td>
<td>-0.64 (1.44)</td>
<td>-3.45</td>
<td>2.17</td>
<td>.66</td>
</tr>
</tbody>
</table>

PARQ-W 0mo -> CCNES-U 0mo

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PARQ-W 0mo -&gt; CCNES-U 0mo</td>
<td>-0.56 (0.87)</td>
<td>-2.25</td>
<td>1.14</td>
<td>.52</td>
</tr>
</tbody>
</table>

**Total Direct Effect**

PARQ-W 0mo -> ERQ-S 0mo

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</tr>
</thead>
<tbody>
<tr>
<td>PARQ-W 0mo -&gt; ERQ-S 0mo</td>
<td>2.86 (3.04)</td>
<td>-3.10</td>
<td>8.82</td>
<td>.35</td>
</tr>
</tbody>
</table>

**Total Indirect Effect**

PARQ-W 0mo -> ERQ-S 0mo

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PARQ-W 0mo -&gt; ERQ-S 0mo</td>
<td>-1.20 (2.00)</td>
<td>-5.11</td>
<td>2.72</td>
<td>.55</td>
</tr>
</tbody>
</table>

**Note.** PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, CCNES-S 0mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at baseline, CCNES-U 0mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at baseline, ERQ-S 0mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at baseline.

†p < .10, *p < .05, **p < .01, ***p < .001.
Model 3d: No Moderator Variable. Model 3d examined longitudinal pathways from parental warmth hypothesized to predict cognitive reappraisal. Adolescent negative affectivity (EATQ-NA) was excluded from Model 3d.

Test of Model Fit. Model fit was fair across all fit indices assessed: $\chi^2(1) = 1.50, p = .22$; CFI = 0.98; TLI = 0.88; RMSEA = 0.06. Given that both the TLI and RMSEA estimates are outside of the range of good fit, interpretation of the direct and indirect effects should be done with caution.

Tests of Direct and Indirect Effects. Results of the mediation path analysis for Model 3d are presented in Table 22 and Figure 12. Consistent with hypotheses, warmth at baseline (PARQ-W 0mo) predicted greater supportive parenting at 4 months (CCNES-S 4mo; $b = 1.92$ [0.41], 95% CI [1.11, 2.72], $p < .001$) and lower unsupportive parenting at 4 months (CCNES-U 4mo; $b$
= -0.96 [0.34], 95% CI [-1.63, -0.28], \( p = .005 \)). The proportion of variance explained for the CCNES-S 4mo \( (R^2 = .16, p = .01) \) but not the CCNES-U 4mo \( (R^2 = .06, p = .18) \) was statistically significant, suggesting that parental warmth and hostility explained 16% of the variance in supportive parenting outcomes, and that parental warmth and hostility explained 6% of the variance in unsupportive parenting outcomes.

Inconsistent with hypotheses, supportive parenting (CCNES-S 4mo; \( b = 0.76 [0.96], 95\% \) CI [-1.13, 2.64], \( p = .29 \)), unsupportive parenting (CCNES-U 4mo; \( b = 1.27 [1.12], 95\% \) CI [-0.92, 3.47], \( p = .15 \)), and parental warmth (PARQ-W 0mo; \( b = 5.37 [5.04], 95\% \) CI [-4.51, 15.25], \( p = .94 \)), were not significant predictors of reappraisal outcomes (ERQ-R 12mo). Finally, the proportion of variance explained for ERQ-R baseline scores by all variables in the model was not statistically significant \( (R^2 = .04, p = .32) \).

Evaluation of the specific indirect effects identified nonsignificant effects of parental warmth through supportive \( (b = 0.03 [0.04], 95\% \) CI [-2.12, 5.02], \( p = .42 \)) and unsupportive parenting \( (b = -0.03 [0.03], 95\% \) CI [-3.44, 1.00], \( p = .27 \)).

Table 22

*Model 3d Longitudinal Mediation Path Analysis Warmth to Reappraisal Results*

<table>
<thead>
<tr>
<th></th>
<th>( R^2 )</th>
<th>( p )</th>
<th>( b ) (SE)</th>
<th>95% CI</th>
<th>( p )</th>
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<tbody>
<tr>
<td></td>
<td><strong>Lower</strong></td>
<td><strong>Upper</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERQ-R 12mo on</td>
<td>.04</td>
<td>.32</td>
<td>1.92 (0.41)</td>
<td>1.11</td>
<td>2.72</td>
</tr>
<tr>
<td>CCNES-S 4mo</td>
<td>0.76</td>
<td>-1.13</td>
<td>2.64</td>
<td>.29</td>
<td></td>
</tr>
<tr>
<td>CCNES-U 4mo</td>
<td>1.27</td>
<td>-0.92</td>
<td>3.47</td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>5.37</td>
<td>-4.51</td>
<td>15.25</td>
<td>.94</td>
<td></td>
</tr>
<tr>
<td>CCNES-S 4mo on</td>
<td>.16</td>
<td>.01</td>
<td>1.92 (0.41)</td>
<td>1.11</td>
<td>2.72</td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>1.92</td>
<td>1.11</td>
<td>2.72</td>
<td>.00***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Baseline (mo)</td>
<td>4mo</td>
<td>12mo</td>
<td>Effect Size</td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------</td>
<td>-----</td>
<td>------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>CCNES-U 4mo on</td>
<td>.06</td>
<td>.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo</td>
<td>-0.96 (0.34)</td>
<td>-1.63</td>
<td>-0.28</td>
<td>.005**</td>
<td></td>
</tr>
</tbody>
</table>

**Specific Indirect Effects**

<table>
<thead>
<tr>
<th></th>
<th>Baseline (mo)</th>
<th>4mo</th>
<th>12mo</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARQ-W 0mo -&gt; CCNES-S 4mo</td>
<td>0.03 (0.04)</td>
<td>-2.12</td>
<td>5.02</td>
<td>.42</td>
</tr>
<tr>
<td>-&gt; ERQ-R 12mo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo -&gt; CCNES-U 4mo</td>
<td>-0.03 (0.03)</td>
<td>-3.44</td>
<td>1.00</td>
<td>.27</td>
</tr>
<tr>
<td>-&gt; ERQ-R 12mo</td>
<td></td>
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</tr>
</tbody>
</table>

**Direct Effect**

<table>
<thead>
<tr>
<th></th>
<th>Baseline (mo)</th>
<th>12mo</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARQ-W 0mo -&gt; ERQ-R 12mo</td>
<td>0.13 (0.12)</td>
<td>-4.51</td>
<td>15.25</td>
</tr>
</tbody>
</table>

**Total Indirect Effect**

<table>
<thead>
<tr>
<th></th>
<th>Baseline (mo)</th>
<th>12mo</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARQ-W 0mo -&gt; ERQ-R 12mo</td>
<td>0.01 (0.05)</td>
<td>-4.02</td>
<td>4.49</td>
</tr>
</tbody>
</table>

*Note.* PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, CCNES-S 4mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at 4 months, CCNES-U 4mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at 4 months, ERQ-R 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Reappraisal Subscale at 12 months.

*p < .05, **p < .01, ***p < .001.
Figure 12

*Model 3d Longitudinal Mediation Path Analysis to Reappraisal*

![Diagram of Model 3d](image)

*Note. **p < .01, ***p < .001.*

**Model 4d: No Moderator Variable.** Model 4d examined longitudinal pathways from parental warmth hypothesized to predict suppression. Adolescent negative affectivity (EATQ-NA) was excluded from Model 4d.

**Test of Model Fit.** Model fit was excellent across all fit indices assessed: \( \chi^2(1) = 1.49, p = .22; \) CFI = 0.99; TLI = 0.91; RMSEA = 0.06. Given that both the TLI and RMSEA estimates are outside of the range of good fit, interpretation of the direct and indirect effects should be done with caution.

**Tests of Direct and Indirect Effects.** Results of the mediation path analysis for Model 4d are presented in Table 23 and Figure 13. Consistent with hypotheses, warmth at baseline (PARQ-W 0mo) predicted greater supportive parenting at 4 months (CCNES-S 4mo; \( b = 1.89 [0.41], \)
95% CI [0.24, 0.56], \( p < .001 \) and significantly lower unsupportive parenting at 4 months (CCNES-U 4mo; \( b = -0.97 \) [0.36], 95% CI [-0.44, -0.07], \( p = .004 \)). The proportion of variance explained for the CCNES-S 4mo (\( R^2 = .16, p = .01 \)) but not the CCNES-U 4mo (\( R^2 = .06, p = .17 \)) was statistically significant, suggesting that parental warmth and hostility explained 16% of the variance in supportive parenting outcomes, and that parental warmth and hostility explained 6% of the variance in unsupportive parenting outcomes.

Inconsistent with hypotheses, parental warmth (\( b = -1.28 \) [2.33], 95% CI [-0.20, 0.11], \( p = .58 \)) and unsupportive parenting at 4 months (CCNES-U 0mo; \( b = 1.40 \) [0.86], 95% CI [-0.03, 0.39], \( p = .10 \)) were not significant predictors of suppression outcomes at 12 months (ERQ-S 12mo). However, supportive parenting at 4 months (CCNES-S 0mo; \( b = 1.70 \) [0.60], 95% CI [0.08, 0.46], \( p = .005 \)) was a significant predictor of greater suppression at 12 months. Finally, the proportion of variance explained for ERQ-S 12mo scores by all variables in the model was not statistically significant (\( R^2 = .09, p = .10 \)).

Evaluation of the specific indirect effects identified a nonsignificant effect of parental warmth through unsupportive parenting (\( b = -0.05 \) [0.04], 95% CI [-3.43, 0.70], \( p = .19 \)). However, a positive significant specific indirect effect was found for parental warmth through supportive parenting on suppression at 12 months (\( b = 0.11 \) [0.05], 95% CI [0.34, 6.08], \( p = .03 \)).

\[ \text{Table 23} \]

\begin{tabular}{|l|c|c|c|c|c|c|}
\hline
 & \( R^2 \) & \( p \) & \( b \) (SE) & \multicolumn{2}{c|}{95\% CI} & \( p \) \\
\hline
 & & & & Lower & Upper \\
\hline
ERQ-S 12mo on & .09 & .10 & & & & \\
\hline
CCNES-S 4mo & 1.70 (0.60) & 0.08 & 0.46 & .005** \\
\hline
CCNES-U 4mo & 1.40 (0.86) & -0.03 & 0.39 & .10 \\
\hline
\end{tabular}
### Specific Indirect Effects

<table>
<thead>
<tr>
<th>Source</th>
<th>Model</th>
<th>B</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARQ-W 0mo -&gt; CCNES-S 4mo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo -&gt; CCNES-U 4mo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARQ-W 0mo -&gt; ERQ-S 12mo</td>
<td></td>
<td>0.11</td>
<td>0.05</td>
<td>3.43</td>
<td>.03</td>
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### Specific Direct Effect

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<th>B</th>
<th>SE</th>
<th>t</th>
<th>p</th>
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<tr>
<td>PARQ-W 0mo -&gt; ERQ-S 12mo</td>
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<td>-0.04</td>
<td>0.08</td>
<td>5.84</td>
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### Total Indirect Effect

<table>
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<th>B</th>
<th>SE</th>
<th>t</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>PARQ-W 0mo -&gt; ERQ-S 12mo</td>
<td></td>
<td>0.06</td>
<td>0.06</td>
<td>-1.68</td>
<td>5.37</td>
</tr>
</tbody>
</table>

Note. PARQ-W 0mo = Parental Acceptance-Rejection Questionnaire-Warmth Subscale at baseline, CCNES-S 4mo = Coping with Children’s Negative Emotions Scale-Supportive Subscale at 4 months, CCNES-U 4mo = Coping with Children’s Negative Emotions Scale-Unsupportive Subscale at 4 months, ERQ-S 12mo = Emotion Regulation Questionnaire for Children and Adolescents-Suppression Subscale at 12 months.

*p < .05, **p < .01, ***p < .001.
Figure 13

*Model 4d Longitudinal Mediation Path Analysis to Suppression*

![Diagram showing a longitudinal mediation path analysis with arrows indicating relationships between factors such as PARQ Warmth (Baseline), CCNES Supportive Responses 4 mo, and FRQ Suppression (12 mo).]

**Note.** Bolded lines signify a statistically significant indirect effect.

**p < .01, ***p < .001.

Chapter IV: Discussion

Adolescence is a critical period of period for the development of emotion regulation (Rawana et al., 2014), and emotion regulation is thought to play a key role in helping adolescents face developmental challenges (e.g., McLaughlin et al., 2011; Silk et al., 2007; Yap et al., 2007). Effective emotion regulation is an important predictor of adaptive outcomes for adolescents (e.g., Garnefski et al., 2006; Rice et al., 2007; Silk et al., 2003), while difficulties with emotion regulation are a major risk factor for most forms of psychopathology (see Beauchaine, 2015). Influential models of emotion regulation development in children (see Eisenberg et al., 1998; Morris et al., 2007) identify parenting style and parental socialization of emotion regulation as proposed mechanisms by which parents facilitate the development of adaptive emotion
regulation in children and adolescents, and child temperament as a possible moderator of these pathways. However, little research has focused on the mediational pathways by which emotion regulation develops through socialization of emotion regulation (Chan et al., 2009), and more research on emotion regulation processes is needed in adolescent populations.

The purpose of the current study was to help address these gaps in the literature. The current study examined the pathways between parenting style, parental socialization of emotion regulation practices, and adolescent negative affectivity to adolescent emotion regulation outcomes cross-sectionally and prospectively over the course of a year. I hypothesized that emotion socialization practices would mediate the association between parenting style and emotion regulation such that 1) parental warmth would predict greater use of supportive socialization practices which would in turn predict greater use of reappraisal strategies and lower use of suppression; 2) parental warmth would predict lower use of unsupportive socialization practices which would in turn predict lower use of reappraisal strategies and greater use of suppression; 3) parental hostility would predict lower use of supportive socialization practices which in turn would predict lower use of reappraisal strategies and greater use of suppression; and 4) parental hostility would predict greater use of unsupportive socialization practices which would in turn predict lower use of reappraisal strategies and greater use of suppression. Finally, 5) I hypothesized that these pathways would be moderated by negative affectivity, such that consistent with a differential susceptibility model those high in negative affectivity would be more likely to engage in suppression and less likely to engage in reappraisal when parents use more unsupportive socialization practices, but would be more likely to engage in in reappraisal and less likely to engage in suppression when parents use more supportive socialization practices.
Results were largely unsupportive of the proposed hypotheses. As indicated by Model 1, 2, 3, 4, and post-hoc models, parental warmth predicted statistically significant increases in supportive parenting in all models, and significant decreases in unsupportive parenting in longitudinal but not cross-sectional models. This is largely consistent with the limited prior research supporting that parental warmth positively predicts supportive emotion socialization practices (Chan et al., 2009; Eisenberg et al., 2001b), and the findings build upon this research by suggesting that parental warmth may also negatively predict unsupportive emotion socialization practices in youth. Despite limited research connecting parenting style and socialization of emotion practices, these findings make sense theoretically, as one would expect that parental warmth would contribute to both increases in supportive parenting and decreases unsupportive parenting given that many unsupportive parenting practices would appear to be incompatible with approaches to parenting characterized primarily by warmth between parent and youth. In contrast, however, parental hostility did not predict significant decreases in supportive parenting in any model, though hostility did predict significant increases in unsupportive parenting in cross-sectional but not longitudinal models. This somewhat aligns with the findings of Chan and colleagues (2009) indicating that psychologically controlling parents engaged in more emotion-dismissing socialization practices. However, the present findings do not provide conclusive evidence supporting decreases in supportive parenting as a result of greater hostility, and the fact that hostility did not predict significant increases in unsupportive parenting in longitudinal models does not provide support for a causal effect.

Inconsistent with hypotheses, supportive parenting did not predict statistically significant increases in cognitive reappraisal (see Models 1 and 3) or decreases in suppression (see Models 2 and 4). In fact, supportive parenting predicted nonsignificant decreases in cognitive reappraisal
and increases in suppression across the hypothesized and post-hoc models, and predicted a significant increase in expressive suppression in post-hoc Model 4d. This is inconsistent with research indicating that supportive parenting contributes to positive emotion regulation outcomes in children (e.g., Dunsmore et al., 2013; Herbert et al., 2013; Hurrell et al., 2015; Lunkenheimer et al., 2007; Morelen & Suveg, 2012). Similarly, unsupportive parenting predicted a nonsignificant increase in reappraisal and nonsignificant decrease in suppression in Models 1 and 2 (which were trending towards significance and nonsignificant in Models 1d and 2d, respectively), but predicted a nonsignificant decrease in reappraisal in Model 3 (which was a nonsignificant increase in Model 3d) and a significant increase in suppression in Model 4 (which was a nonsignificant increase in model 4d). This is inconsistent with prior findings indicating that unsupportive parenting contributes to greater emotion dysregulation in children (e.g., Hurrell et al., 2015; Lunkenheimer et al., 2007, Shaffer et al., 2012) and adolescents (e.g., Buckhold et al., 2014). Thus, current findings do not support a relation between socialization of emotion practices and use of either cognitive reappraisal or expressive suppression strategies in young adolescents.

Further inconsistent with hypotheses, adolescent negative affectivity did not significantly moderate the variable pathways in Models 1 or 2. However, there were significant moderations of negative affectivity on the pathway from unsupportive responses to reappraisal and on the pathway from unsupportive responses to suppression, consistent with the differential susceptibility hypothesis that those higher in negative affectivity at baseline were less likely to engage in reappraisal at 12 months (see Model 3) and more likely to engage in suppression at 12 months (see Model 4), supporting prior findings that infants high in negative affectivity demonstrate more maladaptive outcomes resulting from negative parenting (e.g., Kim &
Kochanska, 2012; Leerkes et al., 2009). However, this was not supported across all paths, suggesting that negative affectivity may not hold for varying parenting behaviors and adolescent outcomes. More investigation is needed to support these findings, given the limited prior empirical examination of these relationships.

Additionally, inconsistent with hypotheses, only one of the hypothesized models (Model 4) demonstrated a statistically significant specific indirect effect (i.e., parental warmth to suppression through unsupportive responses), and this significant indirect effect was found to be in the opposite direction than hypothesized, such that greater parental warmth at baseline predicted greater supportive responses at 4 months, which in turn predicted greater suppression at 12 months. This finding may be largely due to the strength of the relationship between parental warmth and supportive parenting, but nonetheless runs counter to theory and prior research failing to find any relationship between parental warmth and maladaptive and dysregulated emotion regulations (e.g., Chan et al., 2009; Fosco & Grych, 2012). It is possible that this could be a feature of overprotective rather than supportive parenting in our sample, which may account for greater suppression use in the adolescents to reduce parental anxiety and/or reduce parental intrusion into their experiences.

Finally, post-hoc analyses were conducted following the initial proposed analyses in order to test competing models for statistical fit. In all hypothesized models, a simpler model that omitted negative affectivity as a moderator demonstrated superior model fit. In all models, the best-fitting model omitted both negative affectivity and parental hostility from the path diagrams (Models 1d, 2d, 3d, and 4d). This may indicate that the sample size was insufficient for testing the originally proposed models, but may also suggest that these simpler models better explain the relations among the variables.
It is possible that the unique characteristics of the sample may partially explain the overall pattern of findings, particularly the community-based sample utilized in the study. It may be the case that our sample simply had lower overall levels of family conflict and unsupportiveness, thus resulting in ceiling and floor effects for the measures of parenting style and socialization of emotion regulation. Thus, the ability to detect statistical differences may have been small due to lowered sample variability among these variables. Additionally, the relatively well-adjusted nature of our sample may also explain the seemingly paradoxical effects found, such that in well-adjusted adolescents, greater supportive parenting may ultimately be enacted or received as excessive parental involvement in the child’s emotional affairs, resulting in more negative emotions and thus more maladaptive emotion regulation strategy use such as suppression. Further research could examine this potential relationship in healthy adolescent populations to evaluate this hypothesis. Finally, the total sample size may have been insufficient for the statistical power necessary to detect significant path or moderation effects for the complexity of the hypothesized models. Further power analysis of the proposed model utilizing complex Monte Carlo simulation studies would be necessary to further evaluate this point, which was not able to be conducted in the original analyses due to insufficient resources to conduct such power analyses.

Limitations and Future Directions

Results of the current study should be considered in light of the study’s limitations. First, due to the nonnormality of several variables (e.g., parental socialization of emotion regulation), it was necessary to utilize a robust estimation method that could account for the non-normal distribution of the variables. Due to the limitations of the statistical software utilized, the estimation method employed used listwise deletion, which lowered the total number of
participants available for analyses. Additionally, the community-based, non-clinical nature of the study sample limits the generalizability of the current study to clinical and more diverse populations. Further, the non-clinical nature of the sample may have resulted in strongly skewed data for variables such as parent-child relationship quality and parental socialization of emotion regulation, as families may both actually report and have a desire to present themselves as high in parental warmth and supportiveness, and low in parental hostility and unsupportiveness, thus affecting the statistical ability to detect differences among participants. Future studies may look at how these relations exist in clinical and more diverse samples. Additionally, future studies may want to evaluate different methods of operationalizing emotion regulation development in adolescents (e.g., physiological regulation, problem-solving strategies, etc.) as well as the influence of socialization of positive emotion regulation in youth emotion regulation development (e.g., observational coding of live interactions between parents and adolescents), to better understand the complex nature of emotion regulation development across the lifespan.

In conclusion, the present study did not find compelling evidence that parental socialization of emotion regulation mediated the cross-sectional or prospective relation between parenting style and adolescent emotion regulation, nor where these relations moderated by adolescent negative affectivity. Future research could benefit from exploration of these relations in diverse samples, with different indicators of emotion regulation development, and with the impact of socialization of positive emotion regulation.
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Appendix A: Mplus Syntax for Proposed Path Diagrams

A1. Mplus Syntax for Moderated Mediation for Hypothesized Cross-Sectional Model
Predicting Reappraisal

Title: Cross-Sectional Pathway to Reappraisal;
Data: FILE = Andrew Dissertation MPlus Scored Data.dat;
Variable:

NAMES = ID Gender Age_T1 Age_T2 TimeT1T2 Age_T4 Time_T3T4 Dx_T1 Dx_T2 DX_T4 Race Ethnicity CDIc_T1 CDIc_anh_T1 CDIc_nm_T1 RPAc_EF_T1 RPAc_SF_T1 RPAc_PR_T1 RPAc_D_T1 PANASc_NA_T1 PANASc_PA_T1 KSSc_T1 ERQc_Re_T1 ERQc_Su_T1 DERSc_T1 DERSc_Non_T1 DERSc_Go_T1 DERSc_Im_T1 DERSc_Awa_T1 DERSc_Str_T1 DERSc_Cla_T1 CCNESc_DR_T1 CCNESc_PR_T1 CCNESc_EE_T1 CCNESc_EFR_T1 CCNESc_PFR_T1 CCNESc_MR_T1 CCNESc_Pos_T1 CCNESc_Neg_T1 EATQc_NA_T1 ParentCompleter CDIp_T1 CRPRp_T1 ACESp_T1 PANASp_NA_T1 PANASp_PA_T1 CBCLp_AD_T1 CBCLp_WD_T1 CBCLp_Som_T1 CBCLp_Soc_T1 CBCLp_Tho_T1 CBCLp_Att_T1 CBCLp_RulB_T1 CBCLp_Agg_T1 CBCLp_Int_T1 CBCLp_RulB_T1 EATQp_NA_T1 PARQp_NA_T1 PARQp_WA_T1 PARQp_HA_T1 PARQp_InN_T1 PARQp_UnR_T1 PARQp_Co_T1 PARQp_WA_T1 PARQp_HA_T1 PARQp_InN_T1 PARQp_UnR_T1 PARQp_Co_T1 CCNESp_DR_T1 CCNESp_PR_T1 CCNESp_EE_T1 CCNESp_EFR_T1 CCNESp_PFR_T1 CCNESp_MR_T1 CCNESp_Sup_T1 CCNESp_UNS_T1 CDIC_T2 CDIc_anh_T2 CDIc_nm_T2 RPAC_EF_T2 RPAC_SF_T2 RPAC_PR_T2 RPAC_D_T2 PANASc_NA_T2 PANASc_PA_T2 DERSc_P_T2 ERQC_Re_T2 EATQC_Re_T2 EATQC_Su_T2 DERSc_T2 DERSc_Non_T2 DERSc_Go_T2 DERSc_Awa_T2 DERSc_Str_T2 DERSc_Cla_T2 Completer_T2 CDIp_T2 PANASp_NA_T2 PANASp_PA_T2 CCNESp_DR_T2 CCNESp_PR_T2 CCNESp_EE_T2 CCNESp_EFR_T2 CCNESp_PFR_T2 CCNESp_M_R_T2 CCNESp_SupT2 CCNESp_UNS_T2 CBCLp_AD_T2 CBCLp_WD_T2 CBCLp_Som_T2 CBCLp_Soc_T2 CBCLp_Tho_T2 CBCLp_Att_T2 CBCLp_RulB_T2 CBCLp_Agg_T2 CBCLp_Int_T2 CBCLp_RulB_T2 CDIC_T4 CDIc_anh_T4 CDIc_nm_T4 RPAC_EF_T4 RPAC_SF_T4 RPAC_PR_T4 RPAC_D_T4 PANASc_NA_T4 PANASc_PA_T4 EATQC_Re_T4 EATQC_Su_T4 DERSc_T4 DERSc_Non_T4 DERSc_Go_T4 DERSc_Awa_T4 DERSc_Str_T4 DERSc_Cla_T4 Completer_T4 CDIp_T4 PANASp_NA_T4 PANASp_PA_T4 CBCLp_AD_T4 CBCLp_WD_T4 CBCLp_Som_T4 CBCLp_Soc_T4 CBCLp_Tho_T4 CBCLp_Agg_T4 CBCLp_RulB_T4 CBCLp_Int_T4 CBCLp_Som_T4;

USEVARIABLES = ERQc_Re_T1 CCNESp_Sup_T1 CCNESp_UNS_T1 EATQc_NA_T1 PARQp_WA_T1 PARQp_HA_T1 Mod1 Mod2;
MISSING = ALL (-99);

Define:
   Mod1 = EATQc_NA_T1*CCNESp_Sup_T1;
   Mod2 = EATQc_NA_T1*CCNESp_Uns_T1;

Analysis:
   TYPE = GENERAL;
   ESTIMATOR = MLR;

Model:
   ERQc_Re_T1 ON
      CCNESp_Sup_T1 (b1)
      CCNESp_Uns_T1 (b2)
      EATQc_NA_T1 (b3)
      Mod1 (b4)
      Mod2 (b5)
      PARQp_WA_T1 (c_p1)
      PARQp_HA_T1 (c_p2);
   CCNESp_Sup_T1 ON
      PARQp_WA_T1 (a1)
      PARQp_HA_T1 (a2);
   CCNESp_Uns_T1 ON
      PARQp_WA_T1 (a3)
      PARQp_HA_T1 (a4);
   PARQp_WA_T1 WITH PARQp_HA_T1;
   Mod1 Mod2 EATQc_NA_T1;

! 'Mplus code for the mediation,
! moderation, and moderated mediation model templates from Andrew Hayes' PROCESS
! analysis examples', http://www.figureitout.org.uk
! Model 14

! Use model constraint subcommand to test conditional indirect effects
! You need to pick low, medium and high moderator values for Z
! for example, of 1 SD below mean, mean, 1 SD above mean

! 1 moderator, 3 values for it
! arbitrary naming convention for conditional indirect and total effects used below:
! MED_Q = medium value of Q, etc.

MODEL CONSTRAINT:
   NEW(LOW_Z MED_Z HIGH_Z
   IND_LOWZ1 IND_MEDZ1 IND_HIZ1
   IND_LOWZ2 IND_MEDZ2 IND_HIZ2
IND_LOWZ3 IND_MEDZ3 IND_HIZ3
IND_LOWZ4 IND_MEDZ4 IND_HIZ4
IMM1 IMM2 IMM3 IMM4
INDTOT_LOWZ INDTOT_MEDZ INDTOT_HIZ
TOT_LOWZ TOT_MEDZ TOT_HIZ);

LOW_Z = (2.2909); ! replace in the code with your chosen low value of Z
MED_Z = (2.8625); ! replace #MEDZ in the code with your chosen medium value of Z
HIGH_Z = (3.4341); ! replace #HIGHZ in the code with your chosen high value of Z

! Calc conditional indirect effects for each combination of moderator values
! and index/indices of moderated mediation

IND_LOWZ1 = a1*b1 + a1*b4*LOW_Z; !For Warmth through Supportive to Reappraisal
IND_MEDZ1 = a1*b1 + a1*b4*MED_Z;
IND_HIZ1 = a1*b1 + a1*b4*HIGH_Z;

IND_LOWZ2 = a2*b1 + a2*b4*LOW_Z; !For Hostility through Supportive to Reappraisal
IND_MEDZ2 = a2*b1 + a2*b4*MED_Z;
IND_HIZ2 = a2*b1 + a2*b4*HIGH_Z;

IND_LOWZ3 = a3*b2 + a3*b5*LOW_Z; !For Warmth through Unsupportive to Reappraisal
IND_MEDZ3 = a3*b2 + a3*b5*MED_Z;
IND_HIZ3 = a3*b2 + a3*b5*HIGH_Z;

IND_LOWZ4 = a4*b2 + a4*b5*LOW_Z; !For Hostility through Unsupportive to Reappraisal
IND_MEDZ4 = a4*b2 + a4*b5*MED_Z;
IND_HIZ4 = a4*b2 + a4*b5*HIGH_Z;

IMM1 = a1*b4; !For Warmth through Supportive to Reappraisal
IMM2 = a2*b5; !For Hostility through Supportive to Reappraisal
IMM3 = a3*b4; !For Warmth through Unsupportive to Reappraisal
IMM4 = a4*b5; !For Hostility through Unsupportive to Reappraisal

! Calc conditional total indirect effects for each combination of moderator values
INDTOT_LOWZ = IND_LOWZ1 + IND_LOWZ2 + IND_LOWZ3 + IND_LOWZ4;
INDTOT_MEDZ = IND_MEDZ1 + IND_MEDZ2 + IND_MEDZ3 + IND_MEDZ4;
INDTOT_HIZ = IND_HIZ1 + IND_HIZ2 + IND_HIZ3 + IND_HIZ4;

! Calc conditional total effects for each combination of moderator values

TOT_LOWZ = IND_LOWZ1 + IND_LOWZ2 + IND_LOWZ3 + IND_LOWZ4 + c_p1 + c_p2;
TOT_MEDZ = IND_MEDZ1 + IND_MEDZ2 + IND_MEDZ3 + IND_MEDZ4 + c_p1 + c_p2;
TOT_HIZ = IND_HIZ1 + IND_HIZ2 + IND_HIZ3 + IND_HIZ4 + c_p1 + c_p2;
! Use loop plot to plot conditional indirect effect of X on Y for each combination of low, med, high moderator values
! Could be edited to show conditional direct or conditional total effects instead
! NOTE - values of 1,5 in LOOP() statement need to be replaced by
! logical min and max limits of predictor X used in analysis

PLOT(LOMOD MEDMOD HIMOD);

LOOP(XVAL, 1, 5, 0.1);

LOMOD = INDTOT_LOWZ*XVAL;
MEDMOD = INDTOT_MEDZ*XVAL;
HIMOD = INDTOT_HIZ*XVAL;

PLOT:
  TYPE = plot2;

OUTPUT:
  STDYX CINTERVAL;
A2. Mplus Syntax for Moderated Mediation for Hypothesized Cross-Sectional Model Predicting Suppression

Title: Cross-Sectional Pathway to Suppression;
Data: FILE = Andrew Dissertation MPlus Scored Data.dat;
Variable:

NAMES =   ID Gender Age_T1 Age_T2 TimeT1T2 Age_T4 Time_T3T4 Dx_T1 Dx_T2 DX_T4 Race Ethnicity CDIc_T1 CDIc_anh_T1 CDIc_nm_T1 RPAc_EF_T1 RPAc_SF_T1 RPAc_PR_T1 RPAc_D_T1 PANAsc_NA_T1 PANAsc_PA_T1 KSSc_T1 ERQc_Re_T1 ERQc_Su_T1 DERSc_T1 DERSc_Non_T1 DERSc_Go_T1 DERSc_Imp_T1 DERSc_Awa_T1 DERSc_Str_T1 DERSc_Cla_T1 CCNESc_DR_T1 CCNESc_PR_T1 CCNESc_EE_T1 CCNEScEFR_T1 CCNESc_PFR_T1 CCNESc_MR_T1 CCNESc_Pos_T1 CCNESc_Neg_T1 EATQc_NA_T1 ParentCompleter CDIp_T1 CRPRp_T1 ACESp_T1 PANASp NA T1 PANASp PA_T1 CBCLp_AD_T1 CBCLp_WD_T1 CBCLp_Som_T1 CBCLp_Soc_T1 CBCLp_Tho_T1 CBCLp_Att_T1 CBCLp_RulB_T1 CBCLp_Agg_T1 CBCLp_Int_T1 CBCLp_Ext_T1 EATQp NA T1 PARQp WA T1 PARQp HA T1 PARQp_Inn_T1 PARQp UnR T1 PARQp Con_T1 CCNESp DR_T1 CCNESp PR T1 CCNESp EE T1 CCNESpEFR T1 CCNESpPFR T1 CCNESpMR T1 CCNESp Sup T1 CCNESpUns T1 CDIc_T2 CDIc_anh_T2 CDIc_nm_T2 RPAc_EF_T2 RPAc_SF_T2 RPAc_PR_T2 RPAc_D T2 PANASc NA T2 PANASc PA T2 ERQcRe T2 ERQcSu T2 DERSc T2 DERSc Non T2 DERSc Go T2 DERSc I mp T2 DERSc Awa T2 DERScStr T2 DERSc Cla T2 Completer T2 CDIp T2 PANASp NA T2 PANASp PA T2 CCNESp DR T2 CCNESp PR T2 CCNESpEE T2 CCNESpEFR T2 CCNESpPFR T2 CCNESpMR T2 CCNESpSup T2 CCNESpUns T2 CBCLp_AD T2 CBCLp_WD T2 CBCLp_Som T2 CBCLp_Soc T2 CBCLp_Tho T2 CBCLp_Att T2 CBCLp_RulB T2 CBCLp_Agg T2 CBCLp_Int T2 CBCLp_Ext T2 CDIc_T4 CDIc_anh_T4 CDIc_nm_T4 RPAc_EF_T4 RPAc_SF_T4 RPAc_PR_T4 RPAc_D T4 PANASc NA T4 PANASc PA T4 ERQcRe T4 ERQcSu T4 DERSc T4 DERSc Non T4 DERSc Go T4 DERSc I mp T4 DERSc Awa T4 DERScStr T4 DERSc Cla T4 Completer T4 CDIp T4 PANASp NA T4 PANASp PA T4 CBCLp_AD T4 CBCLp_WD T4 CBCLp Som T4 CBCLp Soc T4 CBCLp_Tho T4 CBCLp_Att T4 CBCLp_RulB T4 CBCLp_Agg T4 CBCLp_Int T4;

USEVARIABLES = ERQc_Su_T1 CCNESp_Sup_T1 CCNESp_Uns_T1 EATQc_NA_T1 PARQp_WA_T1 PARQp_HA_T1 Mod1 Mod2;

MISSING = ALL (-99);
Define:
   Mod1 = EATQc_NA_T1*CCNESp_Sup_T1;
   Mod2 = EATQc_NA_T1*CCNESp_Uns_T1;

Analysis:
   TYPE = GENERAL;
   ESTIMATOR = MLR;

Model:
   ERQc_Su_T1 ON
      CCNESp_Sup_T1 (b1)
      CCNESp_Uns_T1 (b2)
      EATQc_NA_T1 (b3)
      Mod1 (b4)
      Mod2 (b5)
      PARQp_WA_T1 (c_p1)
      PARQp_HA_T1 (c_p2);
   CCNESp_Sup_T1 ON
      PARQp_WA_T1 (a1)
      PARQp_HA_T1 (a2);
   CCNESp_Uns_T1 ON
      PARQp_WA_T1 (a3)
      PARQp_HA_T1 (a4);
   PARQp_WA_T1 WITH PARQp_HA_T1;
   Mod1 Mod2 EATQc_NA_T1;

! 'Mplus code for the mediation,
! moderation, and moderated mediation model templates from Andrew Hayes' PROCESS
! analysis examples', http://www.figureitout.org.uk
! Model 14

! Use model constraint subcommand to test conditional indirect effects
! You need to pick low, medium and high moderator values for Z
! for example, of 1 SD below mean, mean, 1 SD above mean

! 1 moderator, 3 values for it
! arbitrary naming convention for conditional indirect and total effects used below:
! MED_Q = medium value of Q, etc.

MODEL CONSTRAINT:
   NEW(LOW_Z MED_Z HIGH_Z
      IND_LOWZ1 IND_MEDZ1 IND_HIZ1
      IND_LOWZ2 IND_MEDZ2 IND_HIZ2
      IND_LOWZ3 IND_MEDZ3 IND_HIZ3
      IND_LOWZ4 IND_MEDZ4 IND_HIZ4
IMM1 IMM2 IMM3 IMM4
INDTOT_LOWZ INDTOT_MEDZ INDTOT_HIZ
TOT_LOWZ TOT_MEDZ TOT_HIZ);

LOW_Z = (2.2909); ! replace in the code with your chosen low value of Z
MED_Z = (2.8625); ! replace #MEDZ in the code with your chosen medium value of Z
HIGH_Z = (3.4341); ! replace #HIGHZ in the code with your chosen high value of Z

! Calc conditional indirect effects for each combination of moderator values
! and index/indices of moderated mediation

IND_LOWZ1 = a1*b1 + a1*b4*LOW_Z; !For Warmth through Supportive to Suppression
IND_MEDZ1 = a1*b1 + a1*b4*MED_Z;
IND_HIZ1 = a1*b1 + a1*b4*HIGH_Z;

IND_LOWZ2 = a2*b1 + a2*b4*LOW_Z; !For Hostility through Supportive to Suppression
IND_MEDZ2 = a2*b1 + a2*b4*MED_Z;
IND_HIZ2 = a2*b1 + a2*b4*HIGH_Z;

IND_LOWZ3 = a3*b2 + a3*b5*LOW_Z; !For Warmth through Unsupportive to Suppression
IND_MEDZ3 = a3*b2 + a3*b5*MED_Z;
IND_HIZ3 = a3*b2 + a3*b5*HIGH_Z;

IND_LOWZ4 = a4*b2 + a4*b5*LOW_Z; !For Hostility through Unsupportive to Suppression
IND_MEDZ4 = a4*b2 + a4*b5*MED_Z;
IND_HIZ4 = a4*b2 + a4*b5*HIGH_Z;

IMM1 = a1*b4; !For Warmth through Supportive to Suppression
IMM2 = a2*b5; !For Hostility through Supportive to Suppression
IMM3 = a3*b4; !For Warmth through Unsupportive to Suppression
IMM4 = a4*b5; !For Hostility through Unsupportive to Suppression

! Calc conditional total indirect effects for each combination of moderator values
INDTOT_LOWZ = IND_LOWZ1 + IND_LOWZ2 + IND_LOWZ3 + IND_LOWZ4;
INDTOT_MEDZ = IND_MEDZ1 + IND_MEDZ2 + IND_MEDZ3 + IND_MEDZ4;
INDTOT_HIZ = IND_HIZ1 + IND_HIZ2 + IND_HIZ3 + IND_HIZ4;

! Calc conditional total effects for each combination of moderator values

TOT_LOWZ = IND_LOWZ1 + IND_LOWZ2 + IND_LOWZ3 + IND_LOWZ4 + c_p1 + c_p2;
TOT_MEDZ = IND_MEDZ1 + IND_MEDZ2 + IND_MEDZ3 + IND_MEDZ4 + c_p1 + c_p2;
TOT_HIZ = IND_HIZ1 + IND_HIZ2 + IND_HIZ3 + IND_HIZ4 + c_p1 + c_p2;

! Use loop plot to plot conditional indirect effect of X on Y for each combination of low, med, high moderator values
! Could be edited to show conditional direct or conditional total effects instead
! NOTE - values of 1,5 in LOOP() statement need to be replaced by
! logical min and max limits of predictor X used in analysis

PLOT(LOMOD MEDMOD HIMOD);

LOOP(XVAL, 1, 5, 0.1);

LOMOD = INDTOT_LOWZ*XVAL;
MEDMOD = INDTOT_MEDZ*XVAL;
HIMOD = INDTOT_HIZ*XVAL;

PLOT:
  TYPE = plot2;

OUTPUT:
  STDYX CINTERVAL;
A3. Mplus Syntax for Moderated Mediation for Hypothesized Longitudinal Model Predicting Reappraisal

Title: Longitudinal Pathway to Reappraisal;
Data: FILE = Andrew Dissertation MPlus Scored Data.dat;
Variable:

NAMES = ID Gender Age_T1 Age_T2 TimeT1T2 Age_T4 Time_T3T4 Dx_T1 Dx_T2 DX_T4 Race Ethnicity CDIc_T1 CDIc_anh_T1 CDIc_nm_T1 RPAc_EF_T1 RPAc_SF_T1 RPAc_PR_T1 RPAc_D_T1 PANASc_NA_T1 PANASc_PA_T1 KSSc_T1 ERQc_Re_T1 ERQc_Su_T1 DERSc_T1 DERSc_Mod1 T1 DERSc_Mod2 T1 DERSc_Cla T1 DERSc_Awa T1 DERSc_Str T1 DERSc_Str T1 DERSc_Cla T1 CCNESc_DR_T1 CCNESc_PR_T1 CCNESc_EE_T1 CCNEScEFR_T1 CCNESc_PFR_T1 CCNESc_MR_T1 CCNESc_Pos T1 CCNESc_Neg T1 EATQc NA T1 ParentCompleter CDIp T1 CRPrp T1 ACESp_T1 PANASp NA T1 PANASp PA_T1 CBCLp_AD_T1 CBCLp WD_T1 CBCLp Som T1 CBCLp Soc T1 CBCLp Tho T1 CBCLp Att T1 CBCLp RuB T1 CBCLp Agg T1 CBCLp Int T1 CBCLp Ext T1 EATQc NA T1 PARQp WA T1 PARQp HA_T1 PARQp UnT1 PARQp ConT1 CCNESp DR_T1 CCNESp PR T1 CCNESp EE T1 CCNESpEFR T1 CCNESp_PFR_T1 CCNESp_MR_T1 CCNESp_Sup_T1 CCNESp Uns T1 CDIc T2 CDIc_anh T2 CDIc nm T2 RPAc_EF T2 RP Ac SF T2 RPAc PR T2 RPAc D T2 PANASc NA T2 PANASc PA T2 ERQc Re T2 ERQc Su T2 DERSc T2 DERSc_Mod1 T2 DERSc_Mod2 T2 DERSc_Cla T2 Completer T2 CDIp T2 PANASp NA T2 PANASp PA T2 CCNESp_DR T2 CCNESp PR T2 CCNESp EE T2 CCNESpEFR T2 CCNESp_PFR T2 CCNESp_M T2 CCNESp_Sup_T2 CCNESp Uns T2 CBCLp AD_T2 CBCLp WD_T2 CBCLp Som T2 CBCLp Soc T2 CBCLp Tho T2 CBCLp Att T2 CBCLp RuB T2 CBCLp Agg T2 CBCLp Int T2 CBCLp Ext T2 CDIc T4 CDIc_anh T4 CDIc nm T4 RPAc_EF T4 RP Ac SF T4 RPAc PR T4 RPAc D T4 PANASc NA T4 PANASc PA T4 ERQc Re T4 ERQc Su T4 DERSc T4 DERSc_Mod1 T4 DERSc_Mod2 T4 DERSc_Cla T4 Completer T4 CDIp T4 PANASp NA T4 PANASp PA T4 CBCLp AD_T4 CBCLp WD_T4 CBCLp Som T4 CBCLp Soc T4 CBCLp Tho T4 CBCLp Att T4 CBCLp RuB T4 CBCLp Agg T4 CBCLp Int T4 CBCLp Ext T4;

USEVARIABLES = ERQc_Re T4 CCNESp_Sup_T2 CCNESp_Uns_T2 EATQc NA T1 PARQp_WA_T1 PARQp HA_T1 Mod1 Mod2;

MISSING = ALL (-99);
Define:
Mod1 = EATQc_NA_T1*CCNESp_Sup_T2;
Mod2 = EATQc_NA_T1*CCNESp_Uns_T2;

Analysis:
TYPE = GENERAL;
ESTIMATOR = MLR;

Model:
ERQc_Re_T4 ON
  CCNESp_Sup_T2 (b1)
  CCNESp_Uns_T2 (b2)
  EATQc_NA_T1 (b3)
  Mod1 (b4)
  Mod2 (b5)
  PARQp_WA_T1 (c_p1)
  PARQp_HA_T1 (c_p2);
CCNESp_Sup_T2 ON
  PARQp_WA_T1 (a1)
  PARQp_HA_T1 (a2);
CCNESp_Uns_T2 ON
  PARQp_WA_T1 (a3)
  PARQp_HA_T1 (a4);
PARQp_WA_T1 WITH PARQp_HA_T1;
Mod1 Mod2 EATQc_NA_T1;

! Mplus code for the mediation,
! moderation, and moderated mediation model templates from Andrew Hayes' PROCESS
! analysis examples' , http://www.figureitout.org.uk
! Model 14

! Use model constraint subcommand to test conditional indirect effects
! You need to pick low, medium and high moderator values for Z
! for example, of 1 SD below mean, mean, 1 SD above mean

! 1 moderator, 3 values for it
! arbitrary naming convention for conditional indirect and total effects used below:
! MED_Q = medium value of Q, etc.

MODEL CONSTRAINT:
  NEW(LOW_Z MED_Z HIGH_Z
  IND_LOWZ1 IND_MEDZ1 IND_HIZ1
  IND_LOWZ2 IND_MEDZ2 IND_HIZ2
  IND_LOWZ3 IND_MEDZ3 IND_HIZ3
  IND_LOWZ4 IND_MEDZ4 IND_HIZ4
IMM1 IMM2 IMM3 IMM4
INDTOT_LOWZ INDTOT_MEDZ INDTOT_HIZ
TOT_LOWZ TOT_MEDZ TOT_HIZ);

LOW_Z = (2.2909);  ! replace in the code with your chosen low value of Z
MED_Z = (2.8625);  ! replace #MEDZ in the code with your chosen medium value of Z
HIGH_Z = (3.4341);  ! replace #HIGHZ in the code with your chosen high value of Z

! Calc conditional indirect effects for each combination of moderator values
! and index/indices of moderated mediation

IND_LOWZ1 = a1*b1 + a1*b4*LOW_Z; !For Warmth T1 through Supportive T2 to Reappraisal T4
IND_MEDZ1 = a1*b1 + a1*b4*MED_Z;
IND_HIZ1 = a1*b1 + a1*b4*HIGH_Z;

IND_LOWZ2 = a2*b1 + a2*b4*LOW_Z; !For Hostility T1 through Supportive T2 to Reappraisal T4
IND_MEDZ2 = a2*b1 + a2*b4*MED_Z;
IND_HIZ2 = a2*b1 + a2*b4*HIGH_Z;

IND_LOWZ3 = a3*b2 + a3*b5*LOW_Z; !For Warmth T1 through Unsupportive T2 to Reappraisal T4
IND_MEDZ3 = a3*b2 + a3*b5*MED_Z;
IND_HIZ3 = a3*b2 + a3*b5*HIGH_Z;

IND_LOWZ4 = a4*b2 + a4*b5*LOW_Z; !For Hostility T1 through Unsupportive T2 to Reappraisal T4
IND_MEDZ4 = a4*b2 + a4*b5*MED_Z;
IND_HIZ4 = a4*b2 + a4*b5*HIGH_Z;

IMM1 = a1*b4; !For Warmth T1 through Supportive T2 to Reappraisal T4
IMM2 = a2*b5; !For Hostility T1 through Supportive T2 to Reappraisal T4
IMM3 = a3*b4; !For Warmth T1 through Unsupportive T2 to Reappraisal T4
IMM4 = a4*b5; !For Hostility T1 through Unsupportive T2 to Reappraisal T4

! Calc conditional total indirect effects for each combination of moderator values
INDTOT_LOWZ = IND_LOWZ1 + IND_LOWZ2 + IND_LOWZ3 + IND_LOWZ4;
INDTOT_MEDZ = IND_MEDZ1 + IND_MEDZ2 + IND_MEDZ3 + IND_MEDZ4;
INDTOT_HIZ = IND_HIZ1 + IND_HIZ2 + IND_HIZ3 + IND_HIZ4;

! Calc conditional total effects for each combination of moderator values
TOT_LOWZ = IND_LOWZ1 + IND_LOWZ2 + IND_LOWZ3 + IND_LOWZ4 + c_p1 + c_p2;
TOT_MEDZ = IND_MEDZ1 + IND_MEDZ2 + IND_MEDZ3 + IND_MEDZ4 + c_p1 + c_p2;
TOT_HIZ = IND_HIZ1 + IND_HIZ2 + IND_HIZ3 + IND_HIZ4 + c_p1 + c_p2;

! Use loop plot to plot conditional indirect effect of X on Y for each combination of low, med, high moderator values
! Could be edited to show conditional direct or conditional total effects instead
! NOTE - values of 1,5 in LOOP() statement need to be replaced by
! logical min and max limits of predictor X used in analysis

PLOT(LOMOD MEDMOD HIMOD);

LOOP(XVAL, 1, 5, 0.1);

LOMOD = INDTOT_LOWZ*XVAL;
MEDMOD = INDTOT_MEDZ*XVAL;
HIMOD = INDTOT_HIZ*XVAL;

PLOT:
  TYPE = plot2;

OUTPUT:
  STDYX CINTERVAL;
A4. Mplus Syntax for Moderated Mediation for Hypothesized Longitudinal Model Predicting Suppression

Title: Longitudinal Pathway to Suppression;
Data: FILE = Andrew Dissertation MPlus Scored Data.dat;
Variable:

NAMES = ID Gender Age_T1 Age_T2 TimeT1T2 Age_T4 Time_T3T4 Dx_T1 Dx_T2 DX_T4 Race Ethnicity CDIc_T1 CDIc_anh_T1 CDIc_nm_T1 RPAc_EF_T1 RPAc_SF_T1 RPAc_PR_T1 RPAc_D_T1 PANAsc_NA_T1 PANAsc_PA_T1 KSSc_T1 ERQc_Re_T1 ERQc_Su_T1 DERSc_T1 DERSc_Non_T1 DERSc_Go_T1 DERSc_Imp_T1 DERSc_Awa_T1 DERSc_Str_T1 DERSc_Cla_T1 CCNESc_DR_T1 CCNESc_PR_T1 CCNESc_EE_T1 CCNEScEFR_T1 CCNESc_PFR_T1 CCNESc_MR_T1 CCNESc_Pos_T1 CCNESc_Neg_T1 EATQcNA_T1 ParentCompleter CDIp_T1 CRPRp_T1 ACESp_T1 PANASpNA_T1 PANASpPA_T1 CBCLpAD_T1 CBCLpWD_T1 CBCLpSom_T1 CBCLpSoc_T1 CBCLpTho_T1 CBCLpAtt_T1 CBCLpRulB_T1 CBCLpAgg_T1 CBCLpInt_T1 CBCLpExt_T1 EATQpNA_T1 PARQpWA_T1 PARQpHA_T1 PARQpInN_T1 PARQpUnR_T1 PARQpCon_T1 CCNESpDR_T1 CCNESpPR_T1 CCNESpEE_T1 CCNESpEFR_T1 CCNESpPFR_T1 CCNESpMR_T1 CCNESpSup_T1 CCNESpUns_T1 CDIc_T2 CDIc_anh_T2 CDIc_nm_T2 RPAc_EF_T2 RPAc_SF_T2 RPAcPR_T2 RPAcD_T2 PANAScNA_T2 PANASpPA_T2 CCNESpDR_T2 CCNESpPR_T2 CCNESpEE_T2 CCNESpEFR_T2 CCNESpPFR_T2 CCNESpMR_T2 CCNESpSup_T2 CCNESpUns_T2 CBCLpAD_T2 CBCLpWD_T2 CBCLpSom_T2 CBCLpSoc_T2 CBCLpTho_T2 CBCLpAtt_T2 CBCLpRulB_T2 CBCLpAgg_T2 CBCLpInt_T2 CBCLpExt_T2 CDIcT4 CDIc_anh_T4 CDIc_nm_T4 RPAc_EF_T4 RPAcSF_T4 RPAcPR_T4 RPAcD_T4 PANAScNA_T4 PANASpPA_T4 ERQcRe_T4 ERQcSu_T4 DERScT4 DERScN_T4 DERScG_T4 DERScI_T4 DERScA_T4 DERScST_T4 DERScCT_T4 DERScT4 PANAScNA_T4 PANASpPA_T4 CBCLpAD_T4 CBCLpWD_T4 CBCLpSom_T4 CBCLpSoc_T4 CBCLpTho_T4 CBCLpAtt_T4 CBCLpRulB_T4 CBCLpAgg_T4 CBCLpInt_T4 CBCLpExt_T4;

USEVARIABLES = ERQc_Su_T4 CCNESp_Sup_T2 CCNESp_Uns_T2 EATQcNA_T1 PARQpWA_T1 PARQpHA_T1 Mod1 Mod2;

MISSING = ALL (-99);
Define:
\[
\text{Mod1} = \text{EATQc}_\text{NA}_\text{T1} \times \text{CCNESp}_\text{Sup}_\text{T2};
\]
\[
\text{Mod2} = \text{EATQc}_\text{NA}_\text{T1} \times \text{CCNESp}_\text{Uns}_\text{T2};
\]

Analysis:
\[
\text{TYPE} = \text{GENERAL};
\]
\[
\text{ESTIMATOR} = \text{MLR};
\]

Model:
\[
\text{ERQc}_\text{Su}_\text{T4} \text{ ON}\]
\[
\text{CCNESp}_\text{Sup}_\text{T2} (b1)
\]
\[
\text{CCNESp}_\text{Uns}_\text{T2} (b2)
\]
\[
\text{EATQc}_\text{NA}_\text{T1} (b3)
\]
\[
\text{Mod1} (b4)
\]
\[
\text{Mod2} (b5)
\]
\[
\text{PARQp}_\text{WA}_\text{T1} (c_p1)
\]
\[
\text{PARQp}_\text{HA}_\text{T1} (c_p2);
\]
\[
\text{CCNESp}_\text{Sup}_\text{T2} \text{ ON}\]
\[
\text{PARQp}_\text{WA}_\text{T1} (a1)
\]
\[
\text{PARQp}_\text{HA}_\text{T1} (a2);
\]
\[
\text{CCNESp}_\text{Uns}_\text{T2} \text{ ON}\]
\[
\text{PARQp}_\text{WA}_\text{T1} (a3)
\]
\[
\text{PARQp}_\text{HA}_\text{T1} (a4);
\]
\[
\text{PARQp}_\text{WA}_\text{T1} \text{ WITH} \text{PARQp}_\text{HA}_\text{T1};
\]
\[
\text{Mod1} \text{ Mod2} \text{ EATQc}_\text{NA}_\text{T1};
\]

! 'Mplus code for the mediation,
! moderation, and moderated mediation model templates from Andrew Hayes' PROCESS
! analysis examples' , http://www.figureitout.org.uk
! Model 14

! Use model constraint subcommand to test conditional indirect effects
! You need to pick low, medium and high moderator values for Z
! for example, of 1 SD below mean, mean, 1 SD above mean

! 1 moderator, 3 values for it
! arbitrary naming convention for conditional indirect and total effects used below:
! MED_Q = medium value of Q, etc.

MODEL CONSTRAINT:
\[
\text{NEW(LOW}_Z \text{ MED}_Z \text{ HIGH}_Z
\]
\[
\text{IND}_\text{LOWZ1} \text{ IND}_\text{MEDZ1} \text{ IND}_\text{HIZ1}
\]
\[
\text{IND}_\text{LOWZ2} \text{ IND}_\text{MEDZ2} \text{ IND}_\text{HIZ2}
\]
\[
\text{IND}_\text{LOWZ3} \text{ IND}_\text{MEDZ3} \text{ IND}_\text{HIZ3}
\]
\[
\text{IND}_\text{LOWZ4} \text{ IND}_\text{MEDZ4} \text{ IND}_\text{HIZ4}
\]
IMM1 IMM2 IMM3 IMM4
INDTOT_LOWZ INDTOT_MEDZ INDTOT_HIZ
TOT_LOWZ TOT_MEDZ TOT_HIZ);

LOW_Z = (2.2909); ! replace in the code with your chosen low value of Z
MED_Z = (2.8625); ! replace #MEDZ in the code with your chosen medium value of Z
HIGH_Z = (3.4341); ! replace #HIGHZ in the code with your chosen high value of Z

! Calc conditional indirect effects for each combination of moderator values
! and index/indices of moderated mediation

IND_LOWZ1 = a1*b1 + a1*b4*LOW_Z; !For Warmth T1 through Supportive T2 to Suppression T4
IND_MEDZ1 = a1*b1 + a1*b4*MED_Z;
IND_HIZ1 = a1*b1 + a1*b4*HIGH_Z;

IND_LOWZ2 = a2*b1 + a2*b4*LOW_Z; !For Hostility T1 through Supportive T2 to Suppression T4
IND_MEDZ2 = a2*b1 + a2*b4*MED_Z;
IND_HIZ2 = a2*b1 + a2*b4*HIGH_Z;

IND_LOWZ3 = a3*b2 + a3*b5*LOW_Z; !For Warmth T1 through Unsupportive T2 to Suppression T4
IND_MEDZ3 = a3*b2 + a3*b5*MED_Z;
IND_HIZ3 = a3*b2 + a3*b5*HIGH_Z;

IND_LOWZ4 = a4*b2 + a4*b5*LOW_Z; !For Hostility T1 through Unsupportive T2 to Suppression T4
IND_MEDZ4 = a4*b2 + a4*b5*MED_Z;
IND_HIZ4 = a4*b2 + a4*b5*HIGH_Z;

IMM1 = a1*b4; !For Warmth T1 through Supportive T2 to Suppression T4
IMM2 = a2*b5; !For Hostility T1 through Supportive T2 to Suppression T4
IMM3 = a3*b4; !For Warmth T1 through Unsupportive T2 to Suppression T4
IMM4 = a4*b5; !For Hostility T1 through Unsupportive T2 to Suppression T4

! Calc conditional total indirect effects for each combination of moderator values
INDTOT_LOWZ = IND_LOWZ1 + IND_LOWZ2 + IND_LOWZ3 + IND_LOWZ4;
INDTOT_MEDZ = IND_MEDZ1 + IND_MEDZ2 + IND_MEDZ3 + IND_MEDZ4;
INDTOT_HIZ = IND_HIZ1 + IND_HIZ2 + IND_HIZ3 + IND_HIZ4;

! Calc conditional total effects for each combination of moderator values
TOT_LOWZ = IND_LOWZ1 + IND_LOWZ2 + IND_LOWZ3 + IND_LOWZ4 + c_p1 + c_p2;
TOT_MEDZ = IND_MEDZ1 + IND_MEDZ2 + IND_MEDZ3 + IND_MEDZ4 + c_p1 + c_p2;
TOT_HIZ = IND_HIZ1 + IND_HIZ2 + IND_HIZ3 + IND_HIZ4 + c_p1 + c_p2;

! Use loop plot to plot conditional indirect effect of X on Y for each combination of low, med, high moderator values
! Could be edited to show conditional direct or conditional total effects instead
! NOTE - values of 1,5 in LOOP() statement need to be replaced by
! logical min and max limits of predictor X used in analysis

PLOT(LOMOD MEDMOD HIMOD);

LOOP(XVAL, 1, 5, 0.1);

LOMOD = INDTOT_LOWZ*XVAL;
MEDMOD = INDTOT_MEDZ*XVAL;
HIMOD = INDTOT_HIZ*XVAL;

PLOT:
  TYPE = plot2;

OUTPUT:
  STDYX CINTERVAL;
Appendix B: R Code for Multivariate Normality Tests and Box-Cox Transformations

# Load required packages
library(MVN)
library(EnvStats) # Goodness of fit testing that produces the skew/kurtosis and p value I need
library(psych)
library(foreign)

# Read SPSS data
norm <- read.spss("Andrew Dissertation Scored Data-2_BoxCox.sav", to.data.frame = TRUE)

# Create subsets to run MVN on each model I'm testing
norm1 <- subset.data.frame(norm,
    select = c(Age_T1, PARQp_WA_T1, PARQp_HA_T1, CCNESp_Sup_T1,
               CCNESp_Uns_T1, EATQc_NA_T1, ERQc_Re_T1))

norm2 <- subset.data.frame(norm,
    select = c(Age_T1, PARQp_WA_T1, PARQp_HA_T1, CCNESp_Sup_T1,
               CCNESp_Uns_T1, EATQc_NA_T1, ERQc_Su_T1))

norm3 <- subset.data.frame(norm,
    select = c(Age_T1, PARQp_WA_T1, PARQp_HA_T1, CCNESp_Sup_T2,
               CCNESp_Uns_T2, EATQc_NA_T1, ERQc_Re_T4))

norm4 <- subset.data.frame(norm,
    select = c(Age_T1, PARQp_WA_T1, PARQp_HA_T1, CCNESp_Sup_T2,
               CCNESp_Uns_T2, EATQc_NA_T1, ERQc_Su_T4))

## Model 1
Model1.mvn <- mvn(norm1, mvnTest = "mardia", univariateTest = "SW")
Model1.mvn
Model1.mvn.omnibus <- mvn(norm1, mvnTest = "royston", univariateTest = "SW")
Model1.mvn.omnibus$multivariateNormality

# Univariate skew and kurtosis Model 1
gofTest(norm1$Age_T1, test = "skew")
kurtosi(norm1$Age_T1)
gofTest(norm1$PARQp_WA_T1, test = "skew")
kurtosi(norm1$PARQp_WA_T1)
gofTest(norm1$PARQp_HA_T1, test = "skew")
kurtosi(norm1$PARQp_HA_T1)
gofTest(norm1$CCNESp_Sup_T1, test = "skew")
kurtosi(norm1$CCNESp_Sup_T1)
gofTest(norm1$CCNESp_Uns_T1, test = "skew")
kurtosi(norm1$CCNESp_Uns_T1)
gofTest(norm1$EATQc_NA_T1, test = "skew")
kurtosi(norm1$EATQc_NA_T1)
gofTest(norm1$ERQc_Re_T1, test = "skew")
kurtosi(norm1$ERQc_Re_T1)

## Model 1 Box Cox
Model1.mvn.bc <- mvn(norm1, mvnTest = "mardia", univariateTest = "SW", bc = TRUE, 
                     bcType = "optimal")
Model1.mvn.bc
Model1.mvn.bc.omnibus <- mvn(norm1, mvnTest = "royston", univariateTest = "SW", bc = 
                             TRUE, bcType = "optimal")
Model1.mvn.bc.omnibus$multivariateNormality

# univariate skew and kurtosis Model 1 Box Cox
gofTest(boxcoxTransform(norm1$Age_T1, lambda = -0.9425636), test = "skew")
kurtosi(boxcoxTransform(norm1$Age_T1, lambda = -0.9425636))
gofTest(boxcoxTransform(norm1$PARQp_WA_T1, lambda = 16.9717664), test = "skew")
kurtosi(boxcoxTransform(norm1$PARQp_WA_T1, lambda = 16.9717664))
gofTest(boxcoxTransform(norm1$PARQp_HA_T1, lambda = 0.8105674), test = "skew")
kurtosi(boxcoxTransform(norm1$PARQp_HA_T1, lambda = 0.8105674))
gofTest(boxcoxTransform(norm1$CCNESp_Sup_T1, lambda = 1.6793463), test = "skew")
kurtosi(boxcoxTransform(norm1$CCNESp_Sup_T1, lambda = 1.6793463))
gofTest(boxcoxTransform(norm1$CCNESp_Uns_T1, lambda = -0.6016640), test = "skew")
kurtosi(boxcoxTransform(norm1$CCNESp_Uns_T1, lambda = -0.6016640))
gofTest(boxcoxTransform(norm1$EATQc_NA_T1, lambda = 1.1214603), test = "skew")
kurtosi(boxcoxTransform(norm1$EATQc_NA_T1, lambda = 1.1214603))
gofTest(boxcoxTransform(norm1$ERQc_Re_T1, lambda = 1.5461423), test = "skew")
kurtosi(boxcoxTransform(norm1$ERQc_Re_T1, lambda = 1.5461423))

## Model 2
Model2.mvn <- mvn(norm2, mvnTest = "mardia", univariateTest = "SW")
Model2.mvn
Model2.mvn.omnibus <- mvn(norm2, mvnTest = "royston", univariateTest = "SW")
Model2.mvn.omnibus$multivariateNormality

# univariate skew and kurtosis Model 2
gofTest(norm2$Age_T1, test = "skew")
kurtosi(norm2$Age_T1)
gofTest(norm2$PARQp_WA_T1, test = "skew")
kurtosi(norm2$PARQp_WA_T1)
gofTest(norm2$PARQp_HA_T1, test = "skew")
kurtosi(norm2$PARQp_HA_T1)
gofTest(norm2$CCNESp_Sup_T1, test = "skew")
kurtosi(norm2$CCNESp_Sup_T1)
gofTest(norm2$CCNESp_Uns_T1, test = "skew")
kurtosi(norm2$CCNESp_Uns_T1)
gofTest(norm2$EATQc_NA_T1, test = "skew")
kurtosi(norm2$EATQc_NA_T1)
gofTest(norm2$ERQc_Su_T1, test = "skew")
kurtosi(norm2$ERQc_Su_T1)

##Model 2 Box Cox
Model2.mvn.bc <- mvn(norm2, mvnTest = "mardia", univariateTest = "SW", bc = TRUE,
                     bcType = "optimal")
Model2.mvn.bc
Model2.mvn.bc.omnibus <- mvn(norm2, mvnTest = "royston", univariateTest = "SW", bc =
                              TRUE, bcType = "optimal")
Model2.mvn.bc.omnibus$multivariateNormality

#univariate skew and kurtosis Model 2 Box Cox
gofTest(boxcoxTransform(norm2$Age_T1, lambda = -0.8228527), test = "skew")
kurtosi(boxcoxTransform(norm2$Age_T1, lambda = -0.8228527))
gofTest(boxcoxTransform(norm2$PARQp_WA_T1, lambda = 17.1164014), test = "skew")
kurtosi(boxcoxTransform(norm2$PARQp_WA_T1, lambda = 17.1164014))
gofTest(boxcoxTransform(norm2$PARQp_HA_T1, lambda = 0.8147369), test = "skew")
kurtosi(boxcoxTransform(norm2$PARQp_HA_T1, lambda = 0.8147369))
gofTest(boxcoxTransform(norm2$CCNESp_Sup_T1, lambda = 1.8942543), test = "skew")
kurtosi(boxcoxTransform(norm2$CCNESp_Sup_T1, lambda = 1.8942543))
gofTest(boxcoxTransform(norm2$CCNESp_Uns_T1, lambda = -0.6188383), test = "skew")
kurtosi(boxcoxTransform(norm2$CCNESp_Uns_T1, lambda = -0.6188383))
gofTest(boxcoxTransform(norm2$EATQc_NA_T1, lambda = 1.0868268), test = "skew")
kurtosi(boxcoxTransform(norm2$EATQc_NA_T1, lambda = 1.0868268))
gofTest(boxcoxTransform(norm2$ERQc_Su_T1, lambda = 0.4517641), test = "skew")
kurtosi(boxcoxTransform(norm2$ERQc_Su_T1, lambda = 0.4517641))

##Model 3
Model3.mvn <- mvn(norm3, mvnTest = "mardia", univariateTest = "SW")
Model3.mvn
Model3.mvn.omnibus <- mvn(norm3, mvnTest = "royston", univariateTest = "SW")
Model3.mvn.omnibus$multivariateNormality

#univariate skew and kurtosis Model 3
gofTest(norm3$Age_T1, test = "skew")
kurtosi(norm3$Age_T1)
gofTest(norm3$PARQp_WA_T1, test = "skew")
kurtosi(norm3$PARQp_WA_T1)
gofTest(norm3$PARQp_HA_T1, test = "skew")
kurtosi(norm3$PARQp_HA_T1)
gofTest(norm3$CCNESp_Sup_T2, test = "skew")
kurtosi(norm3$CCNESp_Sup_T2)
gofTest(norm3$CCNESp_Uns_T2, test = "skew")
kurtosi(norm3$CCNESp_Uns_T2)
gofTest(norm3$EATQc_NA_T1, test = "skew")
kurtosi(norm3$EATQc_NA_T1)
gofTest(norm3$ERQc_Re_T4, test = "skew")
kurtosi(norm3$ERQc_Re_T4)

## Model 3 Box Cox
Model3.mvn.bc <- mvn(norm3, mvnTest = "mardia", univariateTest = "SW", bc = TRUE,
                        bcType = "optimal", tol = 1e-26)
Model3.mvn.bc
Model3.mvn.bc.omnibus <- mvn(norm3, mvnTest = "royston", univariateTest = "SW", bc =
                              TRUE, bcType = "optimal", tol = 1e-26)
Model3.mvn.bc.omnibus$multivariateNormality

# univariate skew and kurtosis Model 3 Box Cox

gofTest(boxcoxTransform(norm3$Age_T1, lambda = -0.9768420), test = "skew")
kurtosi(boxcoxTransform(norm3$Age_T1, lambda = -0.9768420))
gofTest(boxcoxTransform(norm3$PARQp_WA_T1, lambda = 18.6770522), test = "skew")
kurtosi(boxcoxTransform(norm3$PARQp_WA_T1, lambda = 18.6770522))
gofTest(boxcoxTransform(norm3$PARQp_HA_T1, lambda = 0.5653908), test = "skew")
kurtosi(boxcoxTransform(norm3$PARQp_HA_T1, lambda = 0.5653908))
gofTest(boxcoxTransform(norm3$CCNESp_Sup_T2, lambda = 2.2589846), test = "skew")
kurtosi(boxcoxTransform(norm3$CCNESp_Sup_T2, lambda = 2.2589846))
gofTest(boxcoxTransform(norm3$CCNESp_Uns_T2, lambda = -0.4239751), test = "skew")
kurtosi(boxcoxTransform(norm3$CCNESp_Uns_T2, lambda = -0.4239751))
gofTest(boxcoxTransform(norm3$EATQc_NA_T1, lambda = 0.9005551), test = "skew")
kurtosi(boxcoxTransform(norm3$EATQc_NA_T1, lambda = 0.9005551))
gofTest(boxcoxTransform(norm3$ERQc_Re_T4, lambda = 1.8391094), test = "skew")
kurtosi(boxcoxTransform(norm3$ERQc_Re_T4, lambda = 1.8391094))

## Model 4
Model4.mvn <- mvn(norm4, mvnTest = "mardia", univariateTest = "SW")
Model4.mvn
Model4.mvn.omnibus <- mvn(norm4, mvnTest = "royston", univariateTest = "SW")
Model4.mvn.omnibus$multivariateNormality

# univariate skew and kurtosis Model 4

gofTest(norm4$Age_T1, test = "skew")
kurtosi(norm4$Age_T1)
gofTest(norm4$PARQp_WA_T1, test = "skew")
kurtosi(norm4$PARQp_WA_T1)
gofTest(norm4$PARQp_HA_T1, test = "skew")
kurtosi(norm4$PARQp_HA_T1)
gofTest(norm4$CCNESp_Sup_T2, test = "skew")
kurtosi(norm4$CCNESp_Sup_T2)
gofTest(norm4$CCNESp_Uns_T2, test = "skew")
kurtosi(norm4$CCNESp_Uns_T2)
gofTest(norm4$EATQc_NA_T1, test = "skew")
kurtosi(norm4$EATQc_NA_T1)
gofTest(norm4$ERQc_Su_T4, test = "skew")
kurtosi(norm4$ERQc_Su_T4)

## Model 4 Box Cox
Model4.mvn.bc <- mvn(norm4, mvnTest = "mardia", univariateTest = "SW", bc = TRUE,  
                      bcType = "optimal", tol = 1e-26)
Model4.mvn.bc
Model4.mvn.bc.omnibus <- mvn(norm4, mvnTest = "royston", univariateTest = "SW", bc =  
                               TRUE, bcType = "optimal", tol = 1e-26)
Model4.mvn.bc.omnibus$multivariateNormality

# univariate skew and kurtosis Model 4 Box Cox
gofTest(boxcoxTransform(norm4$Age_T1, lambda = -0.8305883), test = "skew")
kurtosi(boxcoxTransform(norm4$Age_T1, lambda = -0.8305883))
gofTest(boxcoxTransform(norm4$PARQp_WA_T1, lambda = 18.6441501), test = "skew")
kurtosi(boxcoxTransform(norm4$PARQp_WA_T1, lambda = 18.6441501))
gofTest(boxcoxTransform(norm4$PARQp_HA_T1, lambda = 0.5452853), test = "skew")
kurtosi(boxcoxTransform(norm4$PARQp_HA_T1, lambda = 0.5452853))
gofTest(boxcoxTransform(norm4$CCNESp_Sup_T2, lambda = 2.1829501), test = "skew")
kurtosi(boxcoxTransform(norm4$CCNESp_Sup_T2, lambda = 2.1829501))
gofTest(boxcoxTransform(norm4$CCNESp_Uns_T2, lambda = -0.4625696), test = "skew")
kurtosi(boxcoxTransform(norm4$CCNESp_Uns_T2, lambda = -0.4625696))
gofTest(boxcoxTransform(norm4$EATQc_NA_T1, lambda = 0.8508450), test = "skew")
kurtosi(boxcoxTransform(norm4$EATQc_NA_T1, lambda = 0.8508450))
gofTest(boxcoxTransform(norm4$ERQc_Su_T4, lambda = 0.4390995), test = "skew")
kurtosi(boxcoxTransform(norm4$ERQc_Su_T4, lambda = 0.4390995))

### Create Box-Cox Transformed Data Frames
norm1bc <- norm1
norm2bc <- norm2
norm3bc <- norm3
norm4bc <- norm4

# norm1bc
norm1bc$Age_T1bc <- norm1bc$Age_T1 ^ -0.9425636
norm1bc$PARQp_WA_T1bc <- norm1bc$PARQp_WA_T1 ^ 17.1164014
norm1bc$PARQp_HA_T1bc <- norm1bc$PARQp_HA_T1 ^ 0.8147369
norm1bc$CCNESp_Sup_T1bc <- norm1bc$CCNESp_Sup_T1 ^ 1.6793463
norm1bc$CCNESp_Uns_T1bc <- norm1bc$CCNESp_Uns_T1 ^ -0.6016640
norm1bc$EATQc_NA_T1bc <- norm1bc$EATQc_NA_T1 ^ 1.1214603
norm1bc$ERQc_Re_T1bc <- norm1bc$ERQc_Re_T1 ^ 1.5461423
describe(norm1bc)
#norm2bc
norm2bc$Age_T1bc <- norm2bc$Age_T1 ^ -0.8228527
norm2bc$PARQp_WA_T1bc <- norm2bc$PARQp_WA_T1 ^ 17.1164014
norm2bc$PARQp_HA_T1bc <- norm2bc$PARQp_HA_T1 ^ 0.8147369
norm2bc$CCNESp_Sup_T1bc <- norm2bc$CCNESp_Sup_T1 ^ 1.8942543
norm2bc$CCNESp_Uns_T1bc <- norm2bc$CCNESp_Uns_T1 ^ -0.6188383
norm2bc$EATQc_NA_T1bc <- norm2bc$EATQc_NA_T1 ^ 1.0868268
norm2bc$ERQc_Su_T1bc <- norm2bc$ERQc_Su_T1 ^ 0.4517641
describe(norm2bc)

#norm3bc
norm3bc$Age_T1bc <- norm3bc$Age_T1 ^ -0.9768420
norm3bc$PARQp_WA_T1bc <- norm3bc$PARQp_WA_T1 ^ 18.6770522
norm3bc$PARQp_HA_T1bc <- norm3bc$PARQp_HA_T1 ^ 0.5653908
norm3bc$CCNESp_Sup_T2bc <- norm3bc$CCNESp_Sup_T2 ^ 2.2589846
norm3bc$CCNESp_Uns_T2bc <- norm3bc$CCNESp_Uns_T2 ^ -0.4239751
norm3bc$EATQc_NA_T1bc <- norm3bc$EATQc_NA_T1 ^ 0.9005551
norm3bc$ERQc_Re_T4bc <- norm3bc$ERQc_Re_T4 ^ 1.8391094
describe(norm3bc)

#norm4bc
norm4bc$Age_T1bc <- norm4bc$Age_T1 ^ -0.8305883
norm4bc$PARQp_WA_T1bc <- norm4bc$PARQp_WA_T1 ^ 18.6441501
norm4bc$PARQp_HA_T1bc <- norm4bc$PARQp_HA_T1 ^ 0.5452853
norm4bc$CCNESp_Sup_T2bc <- norm4bc$CCNESp_Sup_T2 ^ 2.1829501
norm4bc$CCNESp_Uns_T2bc <- norm4bc$CCNESp_Uns_T2 ^ -0.4625696
norm4bc$EATQc_NA_T1bc <- norm4bc$EATQc_NA_T1 ^ 0.8508450
norm4bc$ERQc_Su_T4bc <- norm4bc$ERQc_Su_T4 ^ 0.4390995
describe(norm4bc)

##Write files for analyses
Gender <- norm$Gender

norm1bc$Gender = Gender
norm2bc$Gender = Gender
norm3bc$Gender = Gender
norm4bc$Gender = Gender

write.csv(norm1bc, file = "/Mplus Data/Box Cox/Model 1 Box Cox.csv", row.names = FALSE)
write.csv(norm2bc, file = "/Mplus Data/Box Cox/Model 2 Box Cox.csv", row.names = FALSE)
write.csv(norm3bc, file = "/Mplus Data/Box Cox/Model 3 Box Cox.csv", row.names = FALSE)
write.csv(norm4bc, file = "/Mplus Data/Box Cox/Model 4 Box Cox.csv", row.names = FALSE)
Appendix C: Mplus Syntax for Final Path Diagrams

C1. Mplus Syntax for Model 1d: Cross-Sectional Mediation Model Warmth Predicting Reappraisal

Title: Cross-Sectional Pathway to Reappraisal No Moderator;
Data: FILE = Andrew Dissertation MPlus Scored Data.dat;
Variable:

NAMES = ID Gender Age_T1 Age_T2 Age_T4 Time_T3T4 Dx_T1 Dx_T2 DX_T4 Race Ethnicity CDIc_T1 CDIc_anh_T1 CDIc_nm_T1 RPAc_EF_T1 RPAc_SF_T1 RPAc_PR_T1 RPAc_D_T1 PANASc_NA_T1 PANASc_PA_T1 KSSc_T1 ERQc_Re_T1 ERQc_Su_T1 DERSc_T1 DERSc_Non_T1 DERSc_Go_T1 DERSc_Impl_T1 DERSc_Awa_T1 DERSc_Str_T1 DERSc_Cla_T1 CCNESc_DR_T1 CCNESc_PR_T1 CCNESc_EE_T1 CCNESc_EFR_T1 CCNESc_PFR_T1 CCNESc_MR_T1 CCNESc_Pos_T1 CCNESc_Neg_T1 EATQc_NA_T1 ParentCompleter CDIp_T1 CRPRp_T1 ACESp_T1 PANASp_NA_T1 PANASp_PA_T1 CBCLp_AD_T1 CBCLp_WD_T1 CBCLp_Som_T1 CBCLp_Soc_T1 CBCLp_Tho_T1 CBCLp_Att_T1 CBCLp_RulB_T1 CBCLp_Agg_T1 CBCLp_Int_T1 CBCLp_Ext_T1 EATQp_NA_T1 PARQp_WA_T1 PARQp_HA_T1 PARQp_InN_T1 PARQp_UnR_T1 PARQp_Con_T1 CCNESp_DR_T1 CCNESp_PR_T1 CCNESp_EE_T1 CCNESp_EFR_T1 CCNESp_PFR_T1 CCNESp_MR_T1 CCNESp_Sup_T1 CCNESp_Uns_T1 CDIc_T2 CDIc_anh_T2 CDIc_nm_T2 RPAc_EF_T2 RPAc_SF_T2 RPAc_PR_T2 RPAc_D_T2 PANASc_NA_T2 PANASc_PA_T2 ERQc_Re_T2 ERQc_Su_T2 DERSc_T2 DERSc_Non_T2 DERSc_Go_T2 DERSc_Impl_T2 DERSc_Awa_T2 DERSc_Str_T2 DERSc_Cla_T2 Completer_T2 CDIp_T2 PANASp_NA_T2 PANASp_PA_T2 CCNESp_DR_T2 CCNESp_PR_T2 CCNESp_EE_T2 CCNESp_EFR_T2 CCNESp_PFR_T2 CCNESp_MR_T2 CCNESp_Sup_T2 CCNESp_Uns_T2 CBCLp_AD_T2 CBCLp_WD_T2 CBCLp_Som_T2 CBCLp_Soc_T2 CBCLp_Tho_T2 CBCLp_Att_T2 CBCLp_RulB_T2 CBCLp_Agg_T2 CBCLp_Int_T2 CBCLp_Ext_T2 CDIc_T4 CDIc_anh_T4 CDIc_nm_T4 RPAc_EF_T4 RPAc_SF_T4 RPAc_PR_T4 RPAc_D_T4 PANASc_NA_T4 PANASc_PA_T4 ERQc_Re_T4 ERQc_Su_T4 DERSc_T4 DERSc_Non_T4 DERSc_Go_T4 DERSc_Impl_T4 DERSc_Awa_T4 DERSc_Str_T4 DERSc_Cla_T4 Completer_T4 CDIp_T4 PANASp_NA_T4 PANASp_PA_T4 CBCLp_AD_T4 CBCLp_WD_T4 CBCLp_Som_T4 CBCLp_Soc_T4 CBCLp_Tho_T4 CBCLp_Att_T4 CBCLp_RulB_T4 CBCLp_Agg_T4 CBCLp_Int_T4 CBCLp_Ext_T4;
USEVARIABLES = ERQc_Re_T1 CCNESp_Sup_T1 CCNESp_Uns_T1 PARQp_WA_T1;

MISSING = ALL (-99);

Analysis:
   TYPE = GENERAL;
   ESTIMATOR = MLR;

Model:
   ERQc_Re_T1 ON
      CCNESp_Sup_T1 (b1)
      CCNESp_Uns_T1 (b2)
      PARQp_WA_T1 (c_p1);
   CCNESp_Sup_T1 ON
      PARQp_WA_T1 (a1);
   CCNESp_Uns_T1 ON
      PARQp_WA_T1 (a3);

MODEL INDIRECT:
   ERQc_Re_T1 IND CCNESp_Sup_T1 PARQp_WA_T1;
   ERQc_Re_T1 IND CCNESp_Uns_T1 PARQp_WA_T1;
   ERQc_Re_T1 IND PARQp_WA_T1;

Output:
   STDYX CINTERVAL;
   MODINDICES;

Title: Cross-Sectional Pathway Warmth to Reappraisal No Moderator;
Data: FILE = Andrew Dissertation MPlus Scored Data.dat;
Variable:

NAMES = ID Gender Age_T1 Age_T2 TimeT1T2 Age_T4 Time_T3T4 Dx_T1 Dx_T2 DX_T4 Race Ethnicity CDIc_T1 CDIc_anh_T1 CDIc_nm_T1 RPAc_EF_T1 RPAc_SF_T1 RPAc_PR_T1 RPAc_D_T1 PANASc_NA_T1 PANASc_PA_T1 KSSc_T1 ERQc_Re_T1 ERQc_Su_T1 DERSc_T1 DERSc_Non_T1 DERSc_Go_T1 DERSc_ImT1 DERSc_Awa_T1 DERSc_Str_T1 DERSc_Cla_T1 CCNESc_DR_T1 CCNESc_PR_T1 CCNESc_EE_T1 CCNESc_EFR_T1 CCNESc_PFR_T1 CCNESc_MR_T1 CCNESc_Pos_T1 CCNESc_Neg_T1 EATQc_NA_T1 ParentCompleter CDIp_T1 CRPRp_T1 ACESP_T1 PANASp_NA_T1 PANASp_PA_T1 CBCLp_AD_T1 CBCLp_WD_T1 CBCLp_Som_T1 CBCLp_Soc_T1 CBCLp_Tho_T1 CBCLp_At_T1 CBCLp_RulB_T1 CBCLp_Agg_T1 CBCLp_Int_T1 CBCLp_Ext_T1 EATQp_AN_T1 PARQp_WA_T1 PARQp_HA_T1 PARQp_InN_T1 PARQp_UnR_T1 PARQp_Con_T1 CCNESp_DR_T1 CCNESp_PR_T1 CCNESp_EE_T1 CCNESp_EFR_T1 CCNESp_PFR_T1 CCNESp_MR_T1 CCNESp_Sup_T1 CCNESp_Uns_T1 CDIc_T2 CDIc_anh_T2 CDIc_nm_T2 RPAc_EF_T2 RPAc_SF_T2 RPAc_PR_T2 RPAc_D_T2 PANASc_NA_T2 PANASc_PA_T2 ERQc_Re_T2 ERQc_Su_T2 DERSc_T2 DERSc_Non_T2 DERSc_Go_T2 DERSc_ImT2 DERSc_Awa_T2 DERSc_Str_T2 DERSc_Cla_T2 Completer_T2 CDIp_T2 PANASp_NA_T2 PANASp_PA_T2 CCNESp_DR_T2 CCNESp_PR_T2 CCNESp_EE_T2 CCNESp_EFR_T2 CCNESp_PFR_T2 CCNESp_MR_T2 CCNESp_Sup_T2 CCNESp_Uns_T2 CBCLp_AD_T2 CBCLp_WD_T2 CBCLp_Som_T2 CBCLp_Soc_T2 CBCLp_Tho_T2 CBCLp_At_T2 CBCLp_RulB_T2 CBCLp_Agg_T2 CBCLp_Int_T2 CBCLp_Ext_T2 CDIc_T4 CDIc_anh_T4 CDIc_nm_T4 RPAc_EF_T4 RPAc_SF_T4 RPAc_PR_T4 RPAc_D_T4 PANASc_NA_T4 PANASc_PA_T4 ERQc_Re_T4 ERQc_Su_T4 DERSc_T4 DERSc_Non_T4 DERSc_Go_T4 DERSc_ImT4 DERSc_Awa_T4 DERSc_Str_T4 DERSc_Cla_T4 Completer_T4 CDIp_T4 PANASp_NA_T4 PANASp_PA_T4 CCNESp_DR_T4 CCNESp_PR_T4 CCNESp_EE_T4 CCNESp_EFR_T4 CCNESp_PFR_T4 CCNESp_MR_T4 CCNESp_Sup_T4 CCNESp_Uns_T4 CBCLp_AD_T4 CBCLp_WD_T4 CBCLp_Som_T4 CBCLp_Soc_T4 CBCLp_Tho_T4 CBCLp_At_T4 CBCLp_RulB_T4 CBCLp_Agg_T4 CBCLp_Int_T4 CBCLp_Ext_T4;

USEVARIABLES = ERQc_Su_T1 CCNESp_Sup_T1 CCNESp_Uns_T1 PARQp_WA_T1;

MISSING = ALL (-99);
Analysis:
  TYPE = GENERAL;
  ESTIMATOR = MLR;

Model:
  ERQc_Su_T1 ON
    CCNESP_Sup_T1 (b1)
    CCNESP_Uns_T1 (b2)
    PARQp_WA_T1 (c_p1);
  CCNESP_Sup_T1 ON
    PARQp_WA_T1 (a1);
  CCNESP_Uns_T1 ON
    PARQp_WA_T1 (a3);

MODEL INDIRECT:
  ERQc_Su_T1 IND CCNESP_Sup_T1 PARQp_WA_T1;
  ERQc_Su_T1 IND CCNESP_Uns_T1 PARQp_WA_T1;

  ERQc_Su_T1 IND PARQp_WA_T1;

Output:
  STDYX CINTERVAL;
  MODINDICES;
C3. Mplus Syntax for Model 3b: Longitudinal Mediation Model Warmth Predicting Reappraisal

Title: Longitudinal Pathway to Reappraisal no moderator;
Data: FILE = Andrew Dissertation MPlus Scored Data.dat;
Variable:

```
NAMES = ID Gender Age_T1 Age_T2 Time_T1T2 Age_T4 Time_T3T4 Dx_T1
  Dx_T2 DX_T4 Race Ethnicity CDIc_T1 CDIc_anh_T1 CDIc_nm_T1
  RPAc_EF_T1 RPAc_SF_T1 RPAc_PR_T1 RPAc_D_T1
  PANASc_na_T1 PANASc_pa_T1 KSSc_T1 ERQc_Re_T1
  ERQc_Su_T1 DERSc_T1 DERSc_Ho_T1 DERSc_GO_T1
  DERSc_Imp_T1 DERSc_Awa_T1 DERSc_Str_T1 DERSc_Cla_T1
  CCNESc_DR_T1 CCNESc_PR_T1 CCNESc_EE_T1 CCNEScEFR_T1
  CCNESc_PFR_T1 CCNESc_MR_T1 CCNESc_Pos_T1
  CCNESc_Neg_T1 EATQc_NA_T1 ParentCompleter CDIp_T1
  CRPrp_T1 ACESp_T1 PANASp NA_T1 PANASp_PA_T1
  CBCLp_AD_T1 CBCLp_WD_T1 CBCLp_Som_T1 CBCLp_Soc_T1
  CBCLp_Tho_T1 CBCLp_Att_T1 CBCLp_RulB_T1 CBCLp_Agg_T1
  CBCLp_Int_T1 CBCLp_Ext_T1 EATQp NA_T1 PARQp_WA_T1
  PARQp_HA_T1 PARQp_InN_T1 PARQp_UNR_T1 PARQp_Con_T1
  CCNESp_DR_T1 CCNESp_PR_T1 CCNESp_EE_T1 CCNESpEFR_T1
  CCNESp_PFR_T1 CCNESp_MR_T1 CCNESp Sup_T1
  CCNESp Uns_T1 CDIc T2 CDIc_anh T2 CDIc nm T2 RPAc_EF_T2
  RPAc_SF T2 RPAc PR T2 RPAc D T2 PANASc NA_T2
  PANASc PA_T2 ERQc Re T2 ERQc Su T2 DERSc T2
  DERSc_Ho T2 DERSc GO T2 DERSc Imp T2 DERSc Awa T2
  DERSc Str T2 DERSc Cla T2 Completer T2 CDIp T2
  PANASp NA T2 PANASp PA T2 CCNESp DR T2 CCNESp PR T2
  CCNESp EE T2 CCNESpEFR T2 CCNESp PFR T2
  CCNESp MR T2 CCNESp Sup T2 CCNESp Uns T2 CBCLp AD T2
  CBCLp WD T2 CBCLp Som T2 CBCLp Soc T2 CBCLp Tho T2
  CBCLp Att T2 CBCLp RulB T2 CBCLp A gg T2 CBCLp Int T2
  CBCLp Ext T2 CDIc T4 CDIc anh T4 CDIc nm T4 RPAc EF T4
  RPAc SF T4 RPAc PR T4 RPAc D T4 PANASc NA T4
  PANASc PA T4 ERQc Re T4 ERQc Su T4 DERSc T4
  DERSc_Ho T4 DERSc GO T4 DERSc Imp T4 DERSc Awa T4
  DERSc_Str_T4 DERSc_Cla_T4 Completer_T4 CDIp_T4
  PANASp NA_T4 PANASp PA_T4 CBCLp_AD_T4 CBCLp_WD_T4
  CBCLp_Som_T4 CBCLp_Soc_T4 CBCLp_Tho_T4 CBCLp_Att_T4
  CBCLp_RulB_T4 CBCLp_Agg_T4 CBCLp_Int_T4 CBCLp_Ext_T4;
```

```
USEVARIABLES = ERQc_Re_T1 CCNESp_Sup_T1 CCNESp_Uns_T1
  PARQp_WA_T1;

MISSING = ALL (-99);
```
Analysis:
    TYPE = GENERAL;
    ESTIMATOR = MLR;

Model:
    ERQc_Re_T1 ON
        CCNESp_Sup_T1 (b1)
        CCNESp_Uns_T1 (b2)
        PARQp_WA_T1 (c_p1);
    CCNESp_Sup_T1 ON
        PARQp_WA_T1 (a1);
    CCNESp_Uns_T1 ON
        PARQp_WA_T1 (a3);

MODEL INDIRECT:
    ERQc_Re_T1 IND CCNESp_Sup_T1 PARQp_WA_T1;
    ERQc_Re_T1 IND CCNESp_Uns_T1 PARQp_WA_T1;
    ERQc_Re_T1 IND PARQp_WA_T1;

Output:
    STDYX CINTERVAL;
    MODINDICES;
C4. Mplus Syntax for Model 4b: Longitudinal Mediation Model Warmth Predicting Suppression

Title: Longitudinal Pathway Warmth to Suppression no moderator;
Data: FILE = Andrew Dissertation MPlus Scored Data.dat;
Variable:

NAMES = ID Gender Age_T1 Age_T2 Time_T1T2 Age_T4 Time_T3T4 Dx_T1 Dx_T2 DX_T4 Race Ethnicity CDlc_T1 CDlc_anh_T1 CDlc_nm_T1 RPAc EF_T1 RPAc_SF_T1 RPAc_PR_T1 RPAc_D T1 PANASc NA T1 PANASc PA T1 KSSc T1 ERQc Re T1 ERQc Su T1 DERSc T1 DERSc Non T1 DERSc Go T1 DERSc Imp T1 DERSc Awa T1 DERSc Str T1 DERSc Cla T1 CCNESc DR T1 CCNESc PR T1 CCNESc EE T1 CCNEScEFR T1 CCNESc PFR T1 CCNESc MR T1 CCNESc Pos T1 CCNESc Neg T1 EATQc NA T1 ParentCompleter CDIp T1 CRPRp T1 ACESp T1 PANASp NA T1 PANASp PA T1 CBCLp AD T1 CBCLp WD T1 CBCLp Som T1 CBCLp Soc T1 CBCLp Tho T1 CBCLp Att T1 CBCLp RulB T1 CBCLp Agg T1 CBCLp Int T1 CBCLp Ext T1 EATQc NA T1 PARQp WA T1 PARQp HA T1 PARQp InN T1 PARQp UnR T1 PARQp Con T1 CCNESp DR T1 CCNESp PR T1 CCNESp EE T1 CCNESpEFR T1 CCNESp PFR T1 CCNESp MR T1 CCNESp Sup T1 CCNESp Uns T1 CDlc T2 CDlc_anh T2 CDlc nm T2 RPAc EF T2 RPAc SF T2 RPAc PR T2 RPAc D T2 PANASc NA T2 PANASc PA T2 ERQc Re T2 ERQc Su T2 DERSc T2 DERSc Non T2 DERSc Go T2 DERSc Imp T2 DERSc Awa T2 DERSc Str T2 DERSc Cla T2 Completer T2 CDIp T2 PANASp NA T2 PANASp PA T2 CCNESp DR T2 CCNESp PR T2 CCNESp EE T2 CCNESpEFR T2 CCNESp PFR T2 CCNESp MR T2 CCNESp Sup T2 CCNESp Uns T2 CBCLp AD T2 CBCLp WD T2 CBCLp Som T2 CBCLp Soc T2 CBCLp Tho T2 CBCLp Att T2 CBCLp RulB T2 CBCLp Agg T2 CBCLp Int T2 CBCLp Ext T2 CDlc T4 CDlc_anh T4 CDlc nm T4 RPAc EF T4 RPAc SF T4 RPAc PR T4 RPAc D T4 PANASc NA T4 PANASc PA T4 ERQc Re T4 ERQc Su T4 DERSc T4 DERSc Non T4 DERSc Go T4 DERSc Imp T4 DERSc Awa T4 DERSc Str T4 DERSc Cla T4 Completer T4 CDIp T4 PANASp NA T4 PANASp PA T4 CBCLp AD T4 CBCLp WD T4 CBCLp Som T4 CBCLp Soc T4 CBCLp Tho T4 CBCLp Att T4 CBCLp RulB T4 CBCLp Agg T4 CBCLp Int T4 CBCLp Ext T4;

USEVARIABLES = ERQc Su T4 CCNESp Sup T2 CCNESp Uns T2 PARQp WA T1;

MISSING = ALL (-99);
Analysis:
   TYPE = GENERAL;
   ESTIMATOR = MLR;

Model:
   ERQc_Su_T4 ON
      CCNESp_Sup_T2 (b1)
      CCNESp_Uns_T2 (b2)
      PARQp_WA_T1 (c_p1)
      Gender (cv1)
      Age_T1 (cv2);
   CCNESp_Sup_T2 ON
      PARQp_WA_T1 (a1);
   CCNESp_Uns_T2 ON
      PARQp_WA_T1 (a3);

MODEL INDIRECT:
   ERQc_Su_T4 IND CCNESp_Sup_T2 PARQp_WA_T1;
   ERQc_Su_T4 IND CCNESp_Uns_T2 PARQp_WA_T1;
   ERQc_Su_T4 IND PARQp_WA_T1;

Output:
   STDYX CINTERVAL;
   MODINDICES;