PARENTING STRESS MEDIATES THE ASSOCIATION BETWEEN NEGATIVE AFFECT AND HARSH PARENTING: A DYADIC PERSPECTIVE

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by
Yunying Le

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The thesis of Yunying Le was reviewed and approved* by the following:

Steffany J. Fredman  
Assistant Professor of Human Development and Family Studies  
Thesis Advisor

Mark Feinberg  
Research Professor of Health and Human Development

Eva S. Lefkowitz  
Professor of Human Development and Family Studies  
Professor-in-Charge of HDFS Graduate Program

*Signatures are on file in the Graduate School
The current study examined parenting stress as a mediator of the association between trait level negative affect (i.e., neuroticism) and harsh parenting in a couple context for first time parents with a child transitioning from the late toddlerhood to early preschool years. Participants were 169 co-resident heterosexual couples recruited for a randomized controlled trial of a psychoeducational program, Family Foundations, during the transition to parenthood. Actor Partner Interdependence Modeling (APIM) and mediation for APIM were used to examine the association between men and women’s neuroticism and harsh parenting and whether parenting stress accounts for this association when the children were approximately 3.5 years old. Results indicated that for both men and women, (1) one’s neuroticism is positively associated with one’s own harsh parenting (actor effects); (2) one’s neuroticism is positively associated with one’s partner’s harsh parenting (partner effects); (3) one’s parenting stress accounts for the association between one’s neuroticism and one’s harsh parenting; (4) one’s partner’s parenting stress accounts for the association between one’s neuroticism and one’s partner’s harsh parenting. Further, the association between one’s neuroticism and harsh parenting was attenuated for couples in the Family Foundation group. Findings suggest that trait level parental negative affect (i.e. neuroticism) is associated with harsh parenting through increased parental stress for both partners but that participation in a co-parenting program during the transition to parenthood may help to mitigate the risk of harsh parenting among individuals high in negative affectivity during relatively high stress developmental transitions.
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Chapter 1

Introduction

Harsh parenting is common during the early years of parenthood (Kim, Pears, Fisher, Connelly, & Landsverk, 2010), and a number of studies have documented its adverse effects on child outcomes (e.g. Gershoff, 2002; Hughes & Ensor, 2006; Lipscomb et al., 2012). Although there is evidence documenting an association between parental negative affectivity and harsh parenting (see Rueger, Katz, Risser, & Lovejoy, 2011), little is known about the underlying mechanism(s) accounting for this association or how this operates within a father-mother dyadic context. Better understanding of how these two constructs may be related while children are young offers the opportunity to target maladaptive parenting processes and improve child outcomes. The current study aims to test the hypothesis that parental negative affect is linked to harsh parenting via parenting stress for first-time parents with a child transitioning from late toddlerhood to the early preschool years. We assess this meditational hypothesis in the context of father-mother dyad.

Harsh parenting and negative affect

A number of studies have demonstrated that harsh parenting--defined as a cluster of parental discipline practices involving displays of anger, aggression, and yelling (Arnold, O’Leary, Wolff, Acker, 1993; Hughes & Ensor, 2006; Rueger, Katz et al., 2011)-- is associated with impaired psychological well-being and social functioning in children. For example, children whose parents engage in harsh parenting have been shown to display increased distress levels, emotional dysregulation, aggression, delinquency and antisocial behaviors that can, in turn,
increase children’s risk for future maladjustment and conduct problems (e.g., Chang, Schwartz, Dodge, & McBride-Chang, 2003; Gershoff, 2002; Scaramella, Sohr-Preston, Mirabile, Robison, & Callahan, 2008; Hughes & Ensor, 2006; Lipscomb et al., 2012; Rhoades et al., 2011). It has been shown that harsh parenting increases from birth to toddlerhood and remains high through the preschool years (Kim et al., 2010; Straus & Field, 2003). Given that rates of parent-to-child violence are documented to be as high as 87% during the late toddler/early preschool years (Slep & O’Leary, 2005) and that harsh parenting may be a precursor to child physical abuse (Gershoff, 2002), it is important to identify predictors of harsh parenting during this critical time period to inform prevention and early intervention efforts.

Negative affectivity can be conceptualized as a momentary emotional state (Watson & Tellegen, 1985) or an enduring personality trait (i.e., neuroticism) that predisposes individuals to experience negative emotions (Watson & Clark, 1984). Premised on the hypothesis that the tendency to experience negative emotions is a risk factor for maladaptive parenting techniques, researchers have explored parental negative affectivity as a predictor of harsh parenting practices. A meta-analytic review demonstrated small to medium effect size associations between negative affectivity and harsh-negative parenting, with effect sizes ranging from .21 to .29 (Rueger et al., 2011).

Akin to negative affectivity, neuroticism is a moderately stable personality trait during adulthood (e.g. Watson & Walker, 1996) that is marked by the predisposition to experience negative affect states. Neuroticism has also been shown to be associated with harsh parenting styles (Rueger et al., 2011). Given neuroticism’s documented associations with harsh parenting, it is important to understand mechanisms that might account for this association.
Parenting stress as the mediator

Parenting stress, defined as stress and distress evoked as a result of childrearing related experiences (Abidin, 1995; Haskett, Ahern, Ward, & Allaire, 2006), is one possible mechanism accounting for the relation between neuroticism as a trait-level marker of negative affect and harsh parenting behaviors. Individuals high in neuroticism tend to experience high levels of stress across a variety of situations and to experience unpleasant emotions in the absence of objective stress (Caspi & Shiner, 2006). Neuroticism is positively associated with daily stress (e.g. Bolger, Schilling, 1991; Gunthert, Cohen, & Amerli, 1999; Larsen & Ketelaar, 1991; Schneider, 2004), including parenting stress during the early years of parenthood (Boyce, Condon, Barton & Corkindale, 2007; Mulsow, Caldera, Pursley, Reifman, & Huston, 2002; Saisto, Salmela-Aro, Nurmi, & Halmesmäki, 2008), and this may have implications for how these individuals parent their children. For example, individuals reporting higher parenting stress were found to incorporate more strict discipline in their parenting practices (Anthony et al., 2005). Parenting stress is also associated with parents’ use of emotion-oriented coping strategies (Dabrowska & Pisula, 2010) that involve loss of control and/or hostility towards other people (Connor-Smith & Flachsbart, 2007). In this regard, harsh parenting may be conceptualized as an emotion-focused coping strategy in response to the high levels of stress experienced by some individuals in their parenting role.

Given that the transition to preschool years is a stressful period for many parents and that harsh parenting practices tend to increase during this time (Straus & Field, 2003; Kim et al., 2010), it is important to better understand the associations among parental neuroticism, parenting stress, and harsh parenting practices during this particular developmental context. This period may also be considered as an extension of the transition to parenthood period. The transition to parenthood is not a singular event that ends with the birth of the first child or even the first year of
parenthood. First-time parents constantly grapple with new challenges in their parenting roles as children’s developmental needs change. This can be especially difficult during the first few years of parenthood, as one’s first child proceeds through multiple developmental stages in a relatively short time period. Developmentally, the middle toddlerhood and early preschool years are associated with advances in children’s gross motor skills, which permit greater physical independence and the exerting of autonomy (Haywood & Getchell, 2014), but relatively undeveloped emotion regulation skills. With the development of language in early childhood, children are also able to engage in more advanced conversations and to exert their wills verbally. These changes frequently coincide with the birth of a second child, which requires parents to manage the demands of caring for one or more children, each of whom has high needs. Thus, parents with children transitioning from middle toddlerhood to preschool years may find this to be a particularly stressful period.

**Dyadic perspective**

Finally, when examining the associations among neuroticism, parenting stress, and parenting practices, it is important to consider the contribution of both parents’ trait negative affectivity (i.e., neuroticism) and parenting stress in predicting parenting practices given the interdependent nature of spouses’ affective and behavioral responses in a parenting context. That is, from a family systems perspective (Minuchin, 1985), individuals within a family function in an interdependent manner. Thus, with respect to parenting, one parent’s negative affectivity may not only influence his or her own parenting practices (actor effect) but also his or her spouse’s parenting practices (partner effect). To date, most research examining the relation between parental negative affectivity and harsh/negative parenting practices has focused on mothers or fathers, rarely considering the contributions of both parents’ negative affectivity simultaneously.
One exception to this is a recent study that employed a dyadic framework and found mothers’, but not fathers’, negative affect predicted the partners’ parenting practices (Murdock, Lovejoy, & Oddi, 2014). However, this study only examined negative affect at the state level but not at the trait level and it did not examine potential mediators (e.g., parenting stress) that could account for this association. Thus, the goal of the present investigation was to examine the mediating role of parenting stress in accounting for the association between parental negative affect in the form of neuroticism and harsh parenting practices during the transition to preschool period within a dyadic context, permitting examination of both actor and partner effects.

**Hypotheses**

We hypothesized that, for both men and women, those who endorse higher levels of neuroticism will report engaging in more harsh parenting practices (H1). For both men and women, those who endorse higher levels of neuroticism will report experiencing more parenting stress (H2) and that those who report experiencing higher levels of parenting stress will report engaging in more harsh parenting (H3). It is further anticipated that parenting stress mediates the association between neuroticism and harsh parenting, such that the association between neuroticism and harsh parenting will be attenuated once parenting stress’s associations with neuroticism and harsh parenting is taken into account (H4). Given the interdependent nature of couples in their parenting role, particularly in the context of a high stress developmental period such as the transition to preschool years, secondary hypotheses include partner effects, namely a positive association between one parent’s neuroticism and the partner’s harsh parenting (H5) and parenting stress (H6), and a positive association between one parent’s parenting stress and the partner’s harsh parenting practices (H7). Due to the fact that the data was from a randomized
controlled trial of a psychoeducational program, moderation by intervention status was examined in exploratory analysis together with moderation by gender.

References


Chapter 2

Methods

Participants and procedure

Co-resident heterosexual couples expecting their first child (n = 169) were recruited for a randomized controlled trial of Family Foundations (FF), an educational transition to parenthood program that helps couples maintain a healthy and strong co-parenting relationship after the birth of their first child (Feinberg & Kan, 2008). FF is a couple-based program consisting of 4 prenatal and 4 postnatal sessions. Couples were randomly assigned to the FF group (n = 89) or control group (n = 80). Participants were 18 years old or older with an average age of 28.33 (SD = 4.93) years for women and 29.76 (SD = 5.58) years for men. The majority of the participants completed some post-secondary school education (85.6% of women and 70.7% of men) and identified as European American (91% of women and 90% of men). Annual family income ranged from $2,500 to $162,500 with a median of $65,000 (M = $64,062, SD = $34,372).

Measures

Neuroticism. Twelve items from the NEO Five Factor Inventory (Costa & McCrae, 1992) were used to measure neuroticism at 3 years postpartum. Sample items included, “I often get angry at the way people treat me”. Each item is scored on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree), with higher sum scores indicating higher levels of neuroticism. The internal consistency of this measure was good for both men and women (men: $\alpha = .87$; women: $\alpha = .88$).
Parenting stress. Parenting Stress Index Short Form (Abidin, 1995) was used to measure parental stress at 3 years postpartum. Twenty-seven out of original thirty-six items were used in the data collection because nine items were found to have low factor loadings relative to the other items in the corresponding subscales and were subsequently dropped. Total parenting stress was the average of the 27 remaining items (men: $\alpha = .87$; women: $\alpha = .90$), including twelve items representing personal distress (e.g. “I don’t enjoy things as I used to”; men: $\alpha = .86$; women: $\alpha = .86$) and fifteen items representing childrearing stress (e.g. “My child makes more demands on me than most children”; men: $\alpha = .82$; women: $\alpha = .86$). Higher average scores indicate higher levels of stress.

Harsh parenting. Nine items in The Parenting Scale were used to measure harsh parenting at 3 years postpartum (Arnold et al., 1993). One sample item is “When my child misbehaves, I raise my voice or yell, or speak to my child calmly”. Each item is scored on a scale from 1 to 7, with higher average scores indicating higher levels of harsh parenting. The internal consistency of this measure was good for both men and women (men: $\alpha = .78$; women: $\alpha = .76$).

Analyses

Data were analyzed using the Actor-Partner Interdependence Model (APIM; Kenny, Kashy, & Cook, 2006) and APIM for mediation (APIeM; Ledermann, Macho, & Kenny, 2011) in Mplus (Muthén & Muthén, 1998-2012) in three steps under the structural equation modeling framework. First, the associations between men’s and women’s neuroticism and their harsh parenting were tested within an APIM framework (see Figure 1-1; Kenny et al., 2006). Second, total parenting stress was tested as the mediator accounting for the relation between neuroticism and harsh parenting using APIeM (see Figure 1-2; Ledermann et al., 2011). Third, bootstrapping
was used to test mediating mechanisms in the APIeM model with 5000 samples (Preacher & Hayes, 2008) in order to directly test the significance of the indirect effects of neuroticism on harsh parenting through parenting stress. Moderations by gender and intervention status (FF versus control) were also tested. Chi-square difference test was used to test whether models constraining the paths to be the same across gender and intervention status fit the data significantly worse than allowing the paths to be different. The more parsimonious model was retained when the difference is not statistically significant.

References


Chapter 3

Results

Descriptive statistics and bivariate correlations among men’s and women’s neuroticism, parenting stress, and harsh parenting are presented in Table 3-1, along with comparisons by gender for neuroticism, parenting stress, and harsh parenting. Compared to men, women reported significantly higher levels of neuroticism, although men and women within the same dyad did not differ significantly from one another with respect to parenting stress and harsh parenting. As expected, for both men and women, one’s own level of neuroticism was positively and significantly associated with one’s own parenting stress, with medium to large effect sizes, and with one’s harsh parenting, with small to medium effect sizes. Moreover, within the same dyad, men’s and women’s parenting stress and harsh parenting were positively and significantly correlated, with small to medium effect sizes. Significant cross-gender associations were also found between women’s neuroticism with their partners’ parenting stress and harsh parenting, with small effect sizes.

Figure 3-1 illustrates the basic APIM testing the association between neuroticism and harsh parenting with standardized estimates. As shown in Figure 3-1 and Table 3-2, there is evidence of actor effects for the association between neuroticism and harsh parenting with medium effect sizes (H1): parents who report higher levels of neuroticism indicated that they engage in more harsh parenting practices. There is also evidence of partner effects with small effect sizes (H5), such that one’s own neuroticism is positively associated with more harsh parenting in one’s partner. A test of gender differences for these effects ($\chi^2(2) = .64, p = .73$) indicated that a more parsimonious model in which men and women did not differ in the strength of the relation between one’s neuroticism and one’s self and partner’s harsh parenting
should be retained. In contrast, tests of moderation by intervention status ($\chi^2(1) = 6.60, p = .01$) revealed that there were significantly weaker actor effects for couples participated in *Family Foundations* compared with those in the control condition.

Figure 3-2 displays the APIeM in which parenting stress mediates the association between neuroticism and harsh parenting with standardized estimates. As shown in Figure 3-2 and Table 3-2, there is evidence indicating full mediation in the relation between one’s neuroticism and one’s own engagement of harsh parenting (actor effects) for both men and women. That is, neuroticism is positively and significantly associated with higher levels of one’s own parenting stress (H2; actor effects) with large effect sizes, and parenting stress is positively and significantly associated with one’s own harsh parenting (H3; actor effects) with medium effect sizes. Furthermore, when parenting stress is included in the model, the association between neuroticism and one’s own harsh parenting is attenuated and no longer statistically significant (H4). Evidence for full mediation was also found for the relation between neuroticism and partner’s harsh parenting (partner effects) through partner’s parenting stress. As with the mediating role of parenting stress for partner effects, the association between neuroticism and partner’s harsh parenting was no longer significant once parenting stress was included in the model. There was no evidence indicating partner effects from parenting stress to partner’s harsh parenting (H7). A test of gender differences suggested that a more parsimonious model in which men and women were treated as indistinguishable dyads did not fit the data significantly worse ($\chi^2(6) = 3.72, p = .71$) and should be retained. In other words, there were no gender differences in actor effects (i.e., the mediated association by parenting stress in the association between one’s neuroticism and one’s harsh parenting) or partner effects (i.e., the cross gender associations among the study variables). Tests of moderation by intervention status indicated that there were no differences between dyads who received *Family Foundations* from those who did not with respect to the mediating effects of parenting stress in the association between
neuroticism and harsh parenting for either actor effects ($\chi^2(2) = 4.04, p = .13$) or partner effects ($\chi^2(1) = 2.55, p = .11$).

The bootstrap method was used to test four mediating mechanisms in the APIeM (Preacher & Hayes, 2008) namely actor-actor indirect effects (in Figure 3-2: For women, $X_w \rightarrow M_w \rightarrow Y_w$; for men, $X_m \rightarrow M_m \rightarrow Y_m$), partner-actor indirect effects (in Figure 3-2: For women, $X_w \rightarrow M_m \rightarrow Y_m$; for men, $X_m \rightarrow M_w \rightarrow Y_w$) and four direct effects including actor effects (in Figure 3-2: For women, $X_w \rightarrow Y_w$; for men, $X_m \rightarrow Y_m$) and partner effects (in Figure 3-2: For women, $X_w \rightarrow Y_m$; for men, $X_w \rightarrow Y_m$). Bias-corrected bootstrap confidence intervals calculated with 5000 bootstrap samples were presented in Table 3-3. Both actor-actor indirect effects were positive and statistically significant, and both direct effects between neuroticism and harsh parenting was not statistically significant-- indicating that the association between neuroticism and one’s own harsh parenting to be fully mediated by parenting stress, for both men and women. Both partner-actor indirect effects were positive and statistically significant and both direct effects between neuroticism and one’s partner’s harsh parenting were not statistically significant-- indicating for both men and women, the association between neuroticism and partner’s harsh parenting is fully mediated through partner’s parenting stress.
Chapter 4

Discussions

Parenting stress in the relation between neuroticism and harsh parenting

Harsh parenting has important implications for children during the late toddlerhood to preschool years because this is a critical developmental window for children to begin engaging in more complex emotional self-regulation. Children learn emotional regulation through observation, socialization, and the general emotional climate (Morris, Silk, Steinberg, Myers & Robinson, 2007). Parents who engage in more harsh parenting as a way of coping with parenting stress may model maladaptive, unproductive behaviors for their children and contribute to an increase in tension in the family environment.

The present study sought to examine the association between neuroticism and harsh parenting and whether parenting stress mediates this association during the late toddlerhood through early preschool years. In summary, we found evidence supporting a positive association between parental neuroticism and harsh parenting (H1) as well as the mediating role of parenting stress in accounting for this association (H2-H4). For both men and women, those prone to negative emotions (i.e., high in neuroticism) were likely to experience higher levels of parenting stress (H2) which in turn was linked to more harsh parenting (H3). Moreover, as hypothesized (H4), after taking into account parenting stress, neuroticism and harsh parenting were no longer associated for both men and women. This finding supports the idea that individuals high in neuroticism are engaging in more harsh discipline in their parenting practices mainly due to the amount of stress they experience in fulfilling their role as a parent.
In line with the existing literature, the current study replicated the moderate actor effects between negative affect (i.e., neuroticism) and harsh parenting for both men and women (e.g. Rueger et al., 2011). Moreover, the current study extended previous work by demonstrating that parenting stress is a mediator accounting for the relation between these two constructs. Prior work has implicated the mediating role of parenting stress by demonstrating an association between parental affect and parenting stress as well as an association between parenting stress and harsh discipline (e.g. Anthony et al., 2005; Mulsow et al., 2002). However, the current study is the first to explicitly test parenting stress as the mediator in linking trait parental negative affect (i.e., neuroticism) and harsh parenting. Together with earlier work, this finding underscores that parent’s negative affectivity and neuroticism are a risk factor for harsh parenting. This finding has important implications for prevention and early intervention efforts in parenting. To help reduce or prevent maladaptive discipline practices, intervention programs that seek to decrease parenting stress and provide more constructive, problem-focused coping strategies (as opposed to emotion-focused coping strategies) could be helpful for parents endorsing high levels of negative affect or neuroticism.

**Importance of the Couple Context**

Consistent with a family systems perspective, partner effects were also examined (H5). We found that, after accounting for one’s own neuroticism, partner’s neuroticism also contributes to one’s own harsh parenting. Findings from the present study replicate those from a recently published investigation that documented both actor and partner effects for the association between negative affect and harsh parenting (Murdock et al., 2014). However, we extend that research by demonstrating that partner’s parenting stress mediates the association between one’s own neuroticism and the partner’s harsh parenting. That is, not only are individuals high in
neuroticism more likely to experience more parenting stress, but their partners are too, and this is, in turn, associated with more harsh parenting on the part of both partners. These findings highlight the interdependence of self and partner well-being in predicting parenting behaviors and suggest that a couple-based approach may be of value in informing prevention and early intervention efforts on parenting.

**Moderation by gender and intervention status**

Overall, there was no evidence indicating gender differences in either the APIM or APIeM models. It is worth noting that, although constraining the partner effects to be the same for men and women did not yield significantly worse fit indices, when partner effects were allowed to be different by gender, in both the present study and that by Murdock and colleagues (2014), only the partner effect from women’s neuroticism to men’s harsh parenting was statistically significant. Given the salience of the caretaking role in women’s identity, it may be the case that men’s parenting practices are more likely to be driven by their partner than vice versa. However, it is also possible that by estimating fewer paths, there is more power to detect the partner effect from men to women. A larger sample is needed in future work to further investigate potential gender differences in the relation between negative affect (at the state and trait level) and harsh parenting to better inform prevention and early intervention efforts.

Our findings indicate moderation by intervention status in the APIM model but not APIeM model. That is, a statistically significantly weaker association was observed between neuroticism and one’s harsh parenting for both men and women in *Family Foundations* than for couples in the control group. This finding suggests that the intervention reduced the risk of harsh parenting for individuals high in neuroticism. There are three possible mechanisms that may explain the intervention effect. The first is that by attenuating the association between neuroticism
and parenting stress such that with same levels of neuroticism, individuals in *Family Foundations* may experience less parenting stress which, in turn, leads to less harsh parenting. The second is that the intervention attenuated the association between parenting stress and harsh parenting such that parents were better equipped with constructive coping strategies that, in turn, led to less engagement in harsh parenting. However, the APIeM analyses did not yield evidence supporting either mechanism. The failure to find such effects could be due to a lack of sufficient power to detect moderated mediation by intervention status. The third possible explanation is that *Family Foundations* reduced the level of harsh parenting independently of neuroticism or parental stress, leading to reduced variability and attendant smaller effect size. Individuals in FF group do, indeed, report significantly less harsh parenting compared to the individuals in the control group (Feinberg, Jones, Kan, & Goslin, 2010). Further investigation with a larger sample size is required to more fully understand how *Family Foundations* attenuated the association between neuroticism and harsh parenting.

**Limitations and future directions**

There are several limitations associated with the current study. First, our sample was relatively homogeneous with respect to ethnicity and education such that most of the samples are Caucasian and completed some post-secondary school education. Future studies on this topic would benefit from a more diverse sample with respect to these demographic characteristics. Second, although we were able to detect medium effect size associations between neuroticism and harsh parenting and actor and partner effects for mediation of this association by parenting stress in an APIM and APIeM context, we may have been underpowered to address moderated mediation. Future studies that employ a larger sample will help to better elucidate the mechanisms through which a couple-based co-parenting program such as *Family Foundations*
exerts its effects. Third, the current study utilized cross-sectional data to infer the potential causal impact of neuroticism on parenting stress and harsh parenting. Although neuroticism is considered to be a relatively stable personality trait (Rantanen, Metsapelto, Feldt, Pulkkinen, & Kokko, 2007; Specht, Egloff, & Schmukle, 2011) and conceptual models specify that neuroticism predisposes one to parenting stress (e.g. Boyce et al., 2007; Mulso et al., 2002) which, in turn, increases the likelihood of engaging in harsh parenting (e.g. Anthony et al., 2005), longitudinal data are needed to more fully explicate the associations among these variables over time.

Despite these limitations, the current study suggests that trait-level parental negative affect (i.e., neuroticism) has implications for one’s own and one’s partner’s harsh parenting and that parenting stress accounts for these associations. These findings also highlight the value of taking the dyadic couple context into account and suggest that couple-based psychoeducational programs may have enduring protective effects for families considered at high risk. To reduce harsh parenting among first-time parents with children transitioning from toddlerhood to preschool years, especially among parents with moderate to high levels of neuroticism, inclusion of strategies to reduce parenting stress may be beneficial.

References


### Tables

**Table 3-1:** Correlations, Means, Standard Deviations, and Paired T-Tests for men and women (n = 122 to 135 Couples)

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<tr>
<td>Paired t-tests</td>
<td>2.42*</td>
<td>-0.88</td>
<td>-0.59</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p* < .05.
Table 3-2: Unstandardized effect estimates for APIM and APIeM models

<table>
<thead>
<tr>
<th>Effect</th>
<th>APIM</th>
<th></th>
<th></th>
<th>APIeM</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>p</td>
<td>B</td>
<td>SE</td>
<td>p</td>
</tr>
<tr>
<td>X → Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actor Effect (Xw→Yw/Xm→Ym)</td>
<td>.025</td>
<td>.005</td>
<td>&lt;.001</td>
<td>.008</td>
<td>.007</td>
<td>.281</td>
</tr>
<tr>
<td>Partner Effect (Xw→Ym/Xm→Yw)</td>
<td>.013</td>
<td>.005</td>
<td>.012</td>
<td>.010</td>
<td>.007</td>
<td>.145</td>
</tr>
<tr>
<td>X → M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actor Effect (Xw→Mw/Xm→Mm)</td>
<td>.034</td>
<td>.003</td>
<td>.014</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner Effect (Xw→Mm/Xm→Mw)</td>
<td>.008</td>
<td>.003</td>
<td>&lt;.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M → Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actor Effect (Mw→Yw/Mm→Ym)</td>
<td>.499</td>
<td>.105</td>
<td>&lt;.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner Effect (Mw→Ym/Mm→Yw)</td>
<td>- .021</td>
<td>.093</td>
<td>.882</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. SE = standard error; X = Neuroticism, M = Parenting Stress, Y = Harsh parenting, p is two-tailed.*
Table 3-3: Unstandardized effect estimates and interval limits for mediating mechanisms

<table>
<thead>
<tr>
<th>Model</th>
<th>Estimate</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Simple IEs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men actor-actor IE (Xm → Mm → Ym)</td>
<td>.017</td>
<td>.010, .025</td>
</tr>
<tr>
<td>Women actor-actor IE (Xw → Mw → Yw)</td>
<td>.017</td>
<td>.010, .025</td>
</tr>
<tr>
<td>Women to men partner-actor IE (Xw → Mm → Ym)</td>
<td>.004</td>
<td>.001, .008</td>
</tr>
<tr>
<td>Men to women partner-actor IE (Xm → Mw → Yw)</td>
<td>.004</td>
<td>.001, .008</td>
</tr>
<tr>
<td><strong>Direct effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men actor direct effect (Xm→Ym)</td>
<td>.008</td>
<td>-.007, .023</td>
</tr>
<tr>
<td>Women actor direct effect (Xw→Yw)</td>
<td>.008</td>
<td>-.007, .023</td>
</tr>
<tr>
<td>Men to women partner direct effect (Xm→Yw)</td>
<td>.010</td>
<td>-.004, .024</td>
</tr>
<tr>
<td>Women to men partner direct effect (Xw→Ym)</td>
<td>.010</td>
<td>-.004, .024</td>
</tr>
</tbody>
</table>

*Note.* CI = confidence interval, IE = indirect effect.
Appendix B:

Figures

Figure 1-1: Theoretical APIM model testing the association between parental neuroticism and harsh parenting.
Figure 1-2: Theoretical APIeM model testing the mediating role of parenting stress in the relation between parental neuroticism and harsh parenting.
Figure 3-1: APIM for the association between parental neuroticism and harsh parenting.
Figure 3-2: APIeM for the mediating role of parenting stress in the relation between parental neuroticism and harsh parenting.