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Deviations in Stress and Support: Associations with Parenting Emotions Across the COVID-19 Pandemic

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Abstract

Stress is a potent disruptor of parents' emotional wellbeing and interactions with their child. In the context of the early months of the unfolding pandemic, parents' stress likely fluctuated, with downstream impacts on their parenting experiences. The sample consisted of 72 Latina mothers who participated in a 15-20-minute phone interview roughly once a month between March 2020 and January 2021. Mothers were asked about their experiences of stress, quality of partner support, and their emotional experience of parenting. Analyses revealed that mothers' experiences of stress were high at the beginning of the pandemic and slowly decreased as time went on, though this decline eventually leveled off. Partner support and mothers' emotional experiences of parenting, on the other hand, did not change across the first 10 months of the pandemic. Collectively, the within and between analyses revealed that stress (individually), and stress and support (interactively) were associated with mothers' emotional experiences while interacting with their children. Between-subjects analyses revealed greater stress was associated with greater negative emotions during parenting, though support did not buffer this association. Within-subjects analyses revealed a quadratic association between stress and positive parenting emotions, such that at lower levels of stress, increases in stress was associated with more positive than typical emotions during parenting. However, inclusion of social support into the model as a moderator revealed that when mothers received less support than typical from their partners, mothers' greater experience of stress was associated with their greater experience of negativity during parent-child interactions.

Keywords

COVID-19; stress; partner support; parenting; parent-child interaction

Deviations in Stress and Support: Associations with Parent-Child Interactions Across the COVID-19 Pandemic

Decades of research done with racially and ethnically diverse families have highlighted the disruptive power of contextual stress and its ability to spill over and negatively impact parent-child relationships (e.g., Masarik & Conger, 2017; Prelow et al., 2010). Critically,

contextual stress can evoke a host of negative emotions which can adversely impact the experience and expression of parents' emotions during parent-child interactions (Conger et al., 2012). Parents' emotional experience while interacting with their child is thought to play an organizing and motivating role in parenting behavior (Dix, 1991). Numerous studies have shown that the COVID-19 pandemic dramatically contributed to parents' overall experience of stress (e.g., Calvano et al., 2021). Thus, the stressful context of the pandemic has the potential to increase negative parental experiences and undermine relationship quality (Pietromonaco & Overall, 2021). Further, low-income families, racial/ethnic minority families, and mothers have been especially burdened by this crisis. In this investigation, we focus on Latina mothers and their families' generalized experience of stress and parenting during the pandemic.

Understanding Latina mothers' emotional experiences of parenting can be an important indicator of current and future parenting behavior and child wellbeing. Latine (the gender inclusive term to refer to people of Latino descent) children reared in early environments marked by positive and sensitive parent-child interactions exhibit greater socio-emotional adjustment (e.g., Holtrop et al., 2015), and academic achievement (e.g., Carlo et al., 2018). Additionally, sources of familial and partner support provide an important buffer for Latina mothers during times of stress (e.g., Prelow et al., 2010). However, no study to date has examined how deviations in stress and partner support during the pandemic independently and interactively related to parents' emotional experience during parent-child interactions within Latine families. To fill this gap, we repeatedly measured mothers' experiences of stress, support, and emotions during parenting, across the first 10 months of the pandemic to examine 1) how these family experiences have changed across the pandemic; 2) how deviations in stress and support independently relate to deviations in mothers' emotional experience of parenting; and 3) how deviations in support buffer the impact of stress on mothers' emotions during parenting.

Stress, the Pandemic, and Parent-Child Interactions

Conger and colleagues' Family Stress Model in particular highlights not just the presence of contextual stressors, but the psychological implications and hardships evoked which are uniquely detrimental to family relationships. Likewise, Latine parents' experiences of stress have been related to higher levels of emotional distress (Conger, et al., 2012), which led to less supportive parenting (Prelow et al., 2010). This stress spillover process has been found in a number of high stress contexts, including during the COVID-19 pandemic. For example, during the COVID-19 pandemic, New Zealand parents' distress during lockdown was linked to increases in harsh parenting and decreases in warm and responsive parenting (McRae et al., 2021). Similarly, a U.S. based study found higher stay-at-home intensity to initiate a cascade of higher parenting stress, which in turn predicted more parent-adolescent conflict (Low & Mounts, 2021). Overall, the pandemic created a high stress context which is likely to contribute to the multitude of distressing emotions experienced by Latina mothers, which have the potential to increase negative emotions during parenting. We aim to examine how mothers' stress and her experience of parenting changed across the pandemic, further investigating if deviations in stress are associated with deviations in mothers' emotions during parenting.

Partner Emotional Support and Parent-Child Interactions

Romantic partners play an especially critical role in mothers' wellbeing. Partners who express emotional support demonstrate love and care, provide reassurance and sympathy, listen to problems, and give encouragement (Krause & Borawski-Clark, 1995). Higher levels of partner support have been shown to protect new mothers against postpartum depression (for review see Razurel et al., 2013) and maternal distress (Stapleton et al., 2012). Further, when mothers report higher levels of support from their partners, they perceive less stress and express higher levels of parenting self-efficacy (Leahy-Warren et al., 2012) and report greater parenting warmth (Davis, Carlos, & Crockett, 2020).

Previous research has also found Mexican American women's emotional wellbeing and life satisfaction are nurtured by their supportive family relationships (Diaz & Bui, 2017). In the context of the COVID-19 pandemic, research with majority Latine couples in Arizona showed that most people felt close to their partner, supported, and satisfied in their relationships (Fivecoat et al., 2022). Importantly, for economically vulnerable and majority Latine families, increases in support from partners across the pandemic have been associated with higher levels of parenting engagement in child-focused activities and caregiving (He et al., 2021). However, we know of no studies which measured deviations in partner support throughout the pandemic. We extended existing research by examining how changes in partner support impact changes in mothers' emotional experience of parenting in Latine families during the pandemic.

Partner Emotional Support as a Buffer

Even in the context of stress (e.g., a pandemic), not all families experience disruption in family relationships (He et al., 2021). Social support has long been recognized as an important protective factor against the negative ramifications of stress (e.g., Cohen & McKay, 2020). As expected, partner support has been found to be particularly important for family resilience in the context of the pandemic. Specifically, in New Zealand, parents' distress during the COVID-19 pandemic was linked to harsher and less warm parenting; however, for parents with highly supportive partners, their distress did not result in the same negative consequences on their parenting and parent-child relationship quality (McRae et al., 2021). Similarly, a qualitative study found pregnant and new mothers living in Colorado expressed that partner support was a primary factor that helped them cope with the stress of the pandemic (Farewell et al., 2020).

Social support within the family may be especially salient for Latine families, who value interdependence among family members and strong family ties (e.g., White et al., 2015). For example, Mexican American adults who receive high levels of social support in contexts of high stress experience better psychological well-being (Rodriguez et al., 2019). Specifically, positive emotional support is protective for Latine adults' mental health and is associated with positive maternal practices despite stressful circumstances (e.g., Guntzviller et al., 2020). Building off of these pandemic and pre-pandemic studies of partner support as a stress-buffer, we aim to examine the role of partner support in reducing the spillover of Latina mothers' stress, into their emotions during interactions with their child.

The Rapidly Changing COVID-19 Crisis and the Current Study

The pandemic has not been a single stressor but a complex cascade of rapidly changing crises causing massive fluctuations and instability in family life. Proper understanding of the impact of dynamic changes in family life requires repeated sampling across time. Foundational developmental theories underscore the importance of time, timing, and the degree of stability versus instability with respect to contextual and proximal processes shaping human development. Numerous calls have been made to incorporate longitudinal and intensive data collection designs to better understand stress processes (Almeida et al., 2020; Lazarus, 2000). Further, classical theories of stress often highlight the curvilinear or inverted U-shaped association of stress on performance, particularly during challenging tasks (Yerkes & Dodson, 1908). Thus, a proper understanding of stress spillover requires disentangling stable differences that emerge over time from the within family moment-to-moment deviations, as well as accounting for the potential for non-linear associations (Hoffman, 2015). Integrating within-person, repeated measures assessments might provide a more accurate account of the pervasive effects of stress in the lives of Latina mothers and their children during the rapidly changing pandemic.

Using repeated measures starting from the outset of California's statewide shelter in place order on March 19, 2020, we attempted to capture the volatile and unpredictable course of stress during the pandemic by assessing Latine families living in Northern California monthly until the end of January 2021. Our previous analyses of these data revealed that in the first three months of the pandemic, families experienced a high level of economic hardship and were forced to make a range of financial cutbacks. Mothers who engaged in more cutbacks reported higher levels of stress, depression, and anxiety (Hibel et al., 2021). Subsequent longitudinal analyses revealed a cascade by which greater financial cutbacks lead to higher children's externalizing behaviors, through maternal stress (Boyer et al., 2023). Neither of these previous studies examined mothers' experience of parenting, or her reports of partner support. Thus, building off these past findings, the current study seeks to examine the connection between maternal stress and parenting experiences, and assess the buffering role of partner support over the first year of the COVID-19 pandemic. Our method of data collection allowed us to use multilevel models to parse out stable between-family characteristics and within-family deviations to better understand the global effects of stress and the effects of occasion-to-occasion changes in stress.

The present study had three aims. 1) Track Latine family experiences of stress, support, and mothers' emotional experience of parenting throughout the pandemic; 2) Examine how deviations in stress and support relate to deviations in mothers' parenting emotions; and 3) Investigate whether deviations in support buffered the impact of stress on mothers' parenting emotions. For the between-person analyses related to aims 2 and 3, we hypothesized that stress would relate to more negative emotions and that support would dampen this association. Our within-person analyses were exploratory, and thus we have no a priori hypotheses.

Method

Participants

A sample of 76 mothers was recruited from an ongoing longitudinal study of stress and resilience within Mexican heritage families with young children ($N = 49$) and a snowball recruitment ($N = 27$) of friends and extended family. A subsample of 72 mothers who reported having a partner during at least one assessment across the 10-month study were included for the present analyses. Throughout the assessment period, 18% of the subsample reported either breaking up or finding a new partner. All families lived in Northern California, in the greater Sacramento area. On average, mothers were 26.13 years old (range 18.00 – 47.00, $SD = 5.68$) and the children they reported on were 36.15 months old (range: 1 month – 17.7 years, $SD = 33.31$ months, 42.9% assigned female at birth). A majority of children were 5 years of age or younger (91.67%). Most mothers had one (51.4%) or two children (28.6%) in the home. Modal maternal education was some college with no degree (38.9%), and modal household income in 2019 was \$30,001-\$40,000. There were no significant variations in the number of children, child age, mother age, education, essential worker status, or income between families recruited by the snowball approach and those from the ongoing longitudinal study.

Procedure

Recruitment was ongoing between March 2020 to August 2020. Starting in March 2020, we reached out to families, conducted 15-20-minute phone interviews every two weeks, and compensated \$15 per call. To reduce participant burden, mothers were contacted monthly and compensated \$25 for their time from September 2020 to January 2021. On average, families were called 9.78 times (range 1 - 15). Thus, due to the study design of recruiting families on a rolling basis, not all families have the same number of observations. Interviews were conducted in English and Spanish (11.9%), depending on the mother's preferred language. To create the Spanish surveys, the questionnaires were translated and back-translated. Spanish surveys were administered by native Spanish speakers. The institutional review board (IRB) at University of California, Davis approved all study procedures.

Measures

Parenting Emotions—Items from Bass and colleagues' 2009 daily diary study were utilized to assess parenting emotions. Two items assessed positive parenting emotional experiences (“I enjoyed the time I spent with my child today” and “I had positive interactions with my child today”), and two items assessed negative parenting emotions (“I felt angry with my child today” and “My time with my child today was frustrating”). Responses were measured on a 5-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (5). Negative items were reverse coded and all items were averaged ($M = 4.28$, $SD = 0.58$). Higher scores reflect more positive interactions. The scale maintained acceptable reliability ($\alpha = 0.77$).

Perceived Stress—Mothers' perceived stress was measured using the four-item Perceived Stress Scale-Short Form (PSS4; Cohen et al., 1983), which has been validated in mothers (Karam et al., 2012) and in Spanish (Vallejo, et al., 2018). Two items assessed negative

perceptions (“how often have you felt that you were unable to control the important things in your life” and “how often have you felt difficulties were piling up so high that you could not overcome them?”) and two items assessed positive perceptions (“confident about your ability to handle your personal problems?” and “that things were going your way?”). Mothers responded via a 5-point Likert scale from “never” (0) to “very often” (4). Positive items were reverse scored, all items were averaged ($M = 1.23$, $SD = 0.76$), and higher scores indicated higher perceived stress. The scale maintained acceptable reliability ($\alpha = 0.73$).

Partner Support—Emotional support mothers received from their partners was measured via the Emotional Support subscale of the Received Support Scales (Krause & Borawski-Clark, 1995). Numerous studies support the construct validity of this scale in elder caregivers (e.g., Cho et al., 2015). Mothers were asked “How often has your partner been right there with you (physically) in a stressful situation?” “Comforted you by showing you physical affection?” “Listened to you talk about your private feelings?” “Expressed interest and concern in your well-being?” Mothers’ responses were measured using a 4-point Likert scale: “never” (1), “once in a while” (2), “fairly often” (3), and “very often” (4). All items were summed ($M = 3.57$, $SD = 0.64$) and higher scores indicate greater support. The scale maintained good reliability ($\alpha = 0.87$).

Analytic Strategy

Data were analyzed using multilevel models with residual maximum likelihood in SAS PROC MIXED to account for nested data. All repeated measures were person-mean-centered such that a new level-1 predictor variable was created by subtracting each person’s mean on that variable from their score on that measurement occasion, while the level-2 effect was represented by the person-mean. Thus, the level-2 mean represents the between-person effect directly and the level-1 within-person deviation on each variable represents the within-person effect directly. A significant within-person effect indicates when a person’s stress or partner support levels on one occasion is higher (or lower) than their own average levels, the parents emotional experience changes. A significant between-person effect indicates that, across all calls, differences in levels of stress or partner support relate to different levels of parenting emotions. To account for autocorrelations in parenting emotions, our multilevel models specified a spatial power error structure which accounts for autoregressive error structures with unequal intervals between observations (Bolger & Laurenceau, 2013).

The effects of time-varying predictors of mothers’ perceived stress and partner support on parenting emotions was then examined. As a preliminary step in our model-building process, a baseline model was estimated with mother’s age, child’s age, child’s sex (male = 0; female = 1), household income in 2019, and number of children included as covariates. Number of calls was also controlled. For aim 1, we estimated growth models of linear change in parenting emotions, perceived stress, and partner support as a function of time in months since California’s March 19, 2020, shelter in place order. For aim 2, main effects on parenting experiences at each level for perceived stress and partner support were examined. For aim 3, the moderation effects of partner support on mothers’ stress were examined at each level.

Linear and curvilinear interactions were decomposed using the Johnson-Neyman (J-N) technique (Johnson & Neyman, 1936) which yields a region of significance for the simple slope of a focal predictor conditional upon the value of a continuous moderator. Compared to the “pick-a-point” method (i.e., decomposing an interaction by splitting the value of the moderator into arbitrary low and high values), the J-N technique (1) allows the researcher to determine the exact values of the moderator where the simple slope is different from zero and (2) provides confidence bands to determine the precision of the simple slope estimate (Bauer & Curran, 2005). The precision of the J-N technique is extended to more complex models that include quadratic effects and moderation of these effects by linear moderators (Miller et al., 2013).

Transparency and Openness—The study design and analysis were not preregistered and no power analyses were conducted. Above we reported sample size and data collection procedures, variable scoring, transformations, and reliability coefficients for all our measures, and the frequency of the number of calls to participants. Data were analyzed using SAS ProcMix and J-N Tool (Miller et al., 2013). SAS scripts and outputs for this project are available on the Open Science Framework (OSF): [LINK](#). We are not legally or ethically allowed to publicly post data for this project because the participants in the study have not given informed consent to have their personal data publicly shared, and we do not have IRB approval to post data. To replicate findings, contact the corresponding author for individual-level data or for materials.

Results

Preliminary Analyses

Baseline Model—The mother’s age, mother’s education, child’s age, child’s sex, total number of children and number of calls were included as covariates in the baseline model (see Table 1 for descriptive statistics and inter-correlations). The significant effect of child age on mothers’ emotions during parenting was negative ($b = -0.01$, $SE < 0.01$, $p = .003$), but the significant effect of mother’s age on mothers’ parenting emotions was positive ($b = 0.03$, $SE = 0.01$, $p = .009$). As such, mothers of older children reported feeling angrier and more frustrated, and less enjoyment while parenting and older mothers reported more enjoyment and less anger and frustration while parenting, on average across the first 10 months of the pandemic. We found no significant effect of household income ($b = 0.02$, $SE = 0.01$, $p = .21$, $n = 58$), total number of children ($b = 0.08$, $SE = 0.05$, $p = .10$), child’s sex ($b = 0.10$, $SE = 0.10$, $p = .35$), and number of calls ($b = -0.01$, $SE = 0.01$, $p = .77$) on parenting emotions, and thus these were omitted from subsequent models.

Main analyses

1) Mothers’ Stress, Support, and Emotions During Parenting, Across the Pandemic—First, we examined trajectories of perceived stress and partner support across the first 10 months of the pandemic, after controlling for child and maternal age, as well as the families’ number of calls completed. The significant negative effect of linear time on perceived stress ($b = -0.03$, $SE = 0.01$, $p = .001$) suggests that mothers became less stressed with each month that passed since the shelter-in-place order. A random effect for

linear time was included in the model and was significant ($z = 0.01$, $SE < .01$, $p = .001$) and improved model fit ($AIC = -8.9$). Second, a fixed quadratic time slope was significant ($b = 0.01$, $SE = 0.01$, $p < .001$), indicating a significant deceleration in the rate of decline in and leveling-off of mother's stress as the pandemic progressed (i.e., stress decreased less quickly as the pandemic wore on). There was no significant linear effect of time on partner support ($b = -0.01$, $SE = 0.02$, $p = .997$). Thus, the level of support from partners remained stable between families, across the pandemic.

Next, we examined how mothers' parenting emotions changed during the first 10 months of the pandemic. There was a nonsignificant negative effect of linear time on mothers' parenting emotions ($b = -0.02$, $SE < 0.01$, $p = .073$); because this linear effect was nonsignificant, a quadratic effect of time was not assessed. Including time in the model did not explain any additional variance above the model containing time invariant covariates ($R^2 = .001$); time was omitted from all further models.

2) Deviations in Stress and Support: Associations with Emotions During Parenting

Perceived stress.: There was a positive and significant within-person effect of stress ($b = 0.13$, $SE = 0.05$, $p < .05$), indicating mothers reported more positive emotions when interacting with their child during periods when mothers were more stressed than usual. Conversely, the negative and significant between-person effect of stress ($b = -0.28$, $SE = 0.07$, $p < .05$) indicated that mothers who reported more stress on average across 10 months had fewer positive emotions (i.e., angrier and more frustrating) when interacting with their child. These divergent level 1 and level 2 effects were further examined by adding quadratic terms for each effect. A significant and negative within-person quadratic effect of stress (i.e., within-person perceived stress²; $b = -0.19$, $SE = 0.09$, $p < .05$) signaled a damping of the positive effect of stress on mothers' parenting emotions at higher levels of stress (See Figure 1). We standardized the variables and used the extension of the Johnson-Neyman (J-N) technique to decompose the quadratic effect. Based on the J-N plot in Figure 1, for all values of stress up to and equal to 0.17 standardized units higher than her person-mean stress, the effect of stress on mothers' emotions during parenting was positive and significant (i.e., periodic increases in stress were associated with periodic increases in positive mother emotions). At values beyond 0.17 standardized units, increases in mother's stress above her mean stress levels had no significant effect on her emotional experience during parenting.

Partner Support.: Next, we added to our models the between- and within-person effects of partner support with the linear and quadratic level 1 and level 2 effects of stress. After controlling for perceived stress, there were no significant between-person ($b = 0.21$, $SE = 0.26$, $p > .05$) or within-person ($b = -0.22$, $SE = 0.15$, $p > .05$) effects of partner support on mothers' emotions during parenting.

3) Deviations in Support as a Buffer—Next, to address aim 3, and investigate the buffering role of partner support in the association between mother's perceived stress and mothers' emotions during parent-child interactions, we added the between- and within-person interaction effects of partner support with linear and quadratic level 1 and level 2

effects of stress. Partner support did not moderate the linear between-person ($b = -0.05$, $SE = 0.33$, $p > .05$) or within-person effect ($b = -0.06$, $SE = 0.14$, $p > .05$) of perceived stress on mothers' parenting emotions. Likewise, there was no significant moderation by between-person partner support of the non-significant between person quadratic effect of stress ($b = 0.50$, $SE = 0.62$, $p > .05$). However, within-person partner support significantly moderated the quadratic within-person effect of perceived stress on mothers' parenting emotions ($b = -0.98$, $SE = 0.26$, $p < .05$; See Figure 2).

To decompose the interaction, we used the extension of the J-N technique. The regions of significance for the quadratic effect of within-person mother's stress when mothers received 1 standard deviation below their average level of partner support (Figure 3a), their average level of partner support (Figure 3b), 1 standard deviation above their average level of partner support (Figure 3c) are described in the figure notes. In sum, when mothers received their *average* levels of support, they could experience increases in stress up to 3.97 standard deviations before stress spilled over and negatively impacted their emotions during parenting. However, during periods of *less* than average partner support, mothers' increases in stress of only 1.31 standard deviations were associated with mothers reporting less positive and more negative emotions during parent-child interactions. There was no significant effect of changes in mothers' stress on positive parenting emotions when mothers received *greater* than average partner support.

Discussion

The goal of these analyses was to examine the within-person association of deviations in stress and support on self-reported maternal parenting emotions in a sample of Latine families. Analyses revealed that mothers' experience of stress was high at the beginning of the pandemic, slowly decreasing as time went on, though this decline eventually leveled off. Partner support and emotions during parent-child interactions, on the other hand, did not change across the first 10 months of the pandemic. Despite these trajectory differences, stress (individually), and stress and support (interactively) were associated with mothers' emotions during parenting. Specifically, at the within-person level, low to moderate stress had a beneficial effect on mothers' emotions such that lower than usual to slightly higher than usual monthly levels of mothers' stress was associated with more positive and less negative emotions with their child. At the between-person level, higher reports of stress were associated with more negative parenting emotions. While partner support was not independently associated with mothers' parenting emotions, support moderated the within-person impact of stress on mothers' emotions while parenting. Compared to when receiving less than usual support, receiving average levels of partner support had a stress-buffering effect, increasing the threshold before stress spilled over into mothers' parenting emotions. Together, these findings suggest a dynamic within-person interaction of stress and support by which support can buffer the negative impacts of certain levels of stress. We discuss the implications of these findings below.

The COVID-19 pandemic has created an extended crisis that has stretched on for years. Further, the nature of this crisis has evolved over time such that the physical, mental, and economic repercussions have also come in recurring waves of problems followed by relative

lulls and quiet periods. As expected, we found mothers' experiences of stress changed across the first 10 months of the pandemic. Mothers' stress started relatively high, but with each month that passed since the shelter-in-place order, they reported less stress. However, this decline in stress waned with stress levels plateauing by the end of the first 10 months. Interestingly, both partner support and the mothers' emotions during parenting begin relatively high and remain stable.

Family science research consistently reveals the caustic effects of stress on family relationships (e.g., Masarik & Conger, 2017). Though much of this research uses between-subjects designs, within-person analyses largely replicate these findings with more negative and conflictual family interactions on days of higher stress (Repetti et al., 2009). Our between-person findings reflect past between-person studies revealing that on average, mothers who report higher levels of stress also report more negative and less positive interactions with their children. Conversely, our quadratic within-person findings reveal mothers' reports of small (but not large) increases of stress beyond typical levels were associated with more positive parenting emotions.

Hans Selye is considered the father of stress research, describing a universal process by which physical and psychological stressors initiate a cascade of physiological responses that, if left unresolved, would compromise multiple aspects of an individual's mental and physical health (Selye, 1936). Central to these ideas was that this response was generalized in that all stressors first created a bodily alarm, an attempt to counter the alarm, and then exhaustion if attempts are unsuccessful. However, contemporary stress research shows that individual differences such as cognitive appraisals, stressor intensity, developmental abilities, and coping resources (Lazarus, 2000) can influence the biological and behavioral repercussions of stress. In fact, it is now clear that moderate levels of stress can produce positive outcomes (e.g., Bienertova-Vasku et al., 2020).

Indeed, our within-person analyses revealed that only small increases of stress beyond mothers' typical levels of stress were associated with more positive emotions when interacting with their children. In other words, for most mothers their typical levels of stress might be providing appropriate stimulation and engagement in parenting, and small increases continued to facilitate mothers' enjoyment and pleasure in interacting with their children. Several reports have highlighted boredom as a significant psychological burden during the pandemic (for review see Brooks et al., 2020). Small increases in stress in the context of the pandemic-induced quarantines might also show mothers' adaptive responses and attempts to add stimulation to an otherwise sedentary time (Hernandez-Jana et al., 2022). Our findings might also be a result of mothers spending less time with their children. Specifically, Bass and colleagues (2009) found that on days mothers spent less time with their children, they had more positive interactions. High stress days might cause mothers to withdraw from their children and reduce the likelihood of picking up on anger or frustration in their interactions. Alternatively, mothers might have devoted more energy to their children to avoid or distract their focus away from other stressors. For example, while caregiving is emotionally intense, mothers consistently highlight the joy, purpose, and delight they receive in their role as a mother (e.g., Hill, 2023). This study is limited in its ability to disentangle

the primary sources of stress for these mothers, or why stress spills over in both positive and negative ways.

The Yerkes–Dodson law (1908) and Hormesis Hypothesis (Oshri et al., 2022) suggest that stress is only beneficial for performance (i.e., eustress) until a threshold is reached and after which performance declines (i.e., distress). Our within-person results somewhat mirror these quadratic inverted-U shaped associations between stress and performance when partner support is included. Specifically, while partner support was not associated with parenting at either the between- or within-person level, partner support moderated the quadratic within-person effect of maternal stress by influencing maternal stress spillover (i.e., level of stress at which maternal parenting emotions are impacted). When a mother’s experience of stress was low or typical to her usual stress, small increases in stress were beneficial to her emotional experience while interacting with her child regardless of how much support she received from her partner. However, when mothers experienced higher than usual stress *and* less support than usual, increases in stress were associated with mothers reporting angrier, more frustrating, and less positive parent-child interactions. Specifically, in the context of low levels of partner support, increases in stress 1.31 standardized units above mothers’ means resulted in more negative and less positive emotions during parent-child interactions. Yet, in the context of average partner support, mothers reported increases in stress all the way up to 3.97 units beyond their typical stress, before stress was associated with more negative parent-child interactions. Put another way, when mothers received less support from their partners, they were able to withstand approximately 2/3 less stress in their day-to-day lives before it spilled over and negatively impacted their parenting experiences.

These findings replicate and extend past work highlighting the role of support in buffering the negative impacts of stress, specifically in romantic relationships (e.g., Mercado & Hibel, 2017). As a social species, humans have evolved to seek support from partners when faced with threat, and thus display impaired functioning without this connection (Beckes & Coan, 2011). Further, the evolution of monogamous pair bonds in humans is thought to have increased reproductive success by increasing paternal investment (Dunbar & Shultz, 2007). Thus, romantic partners generally provide support in times of stress, but specifically provide support with the evolutionary goal of facilitating more optimal caregiving.

Limitations

Intensive repeated measures study designs such as this are critical in uncovering changes in family life in real time (Almeida et al., 2020). However, intensive designs create additional burdens for families who are already juggling multiple responsibilities which likely contributed to attrition and missingness. Further, the intensive design required reliance on very brief (though validated) measures which are unable to assess the richness of Latine cultural experiences, family life, and pandemic-specific stress. Our recruitment of families on a rolling basis began at the start of the California shelter in place order contributed to variability in the number of calls. Additionally, the sample is geographically restricted to Northern California. This area is known both for a relatively high cost of living, extensive social service networks, and relatively strict shelter in place regulations. Together, these factors are likely to have influenced the experiences of these families over the course of

the pandemic, potentially limiting generalizability to Latine families outside of Northern California. Further, the sample size is relatively small for between-subject analyses, which could have affected the statistical power to detect significant effects. Therefore, between-person findings should be interpreted with caution. However, the power to detect findings is sufficient for the within-person nature of our main analyses. Additionally, this study wholly relied on self-report measures. The pandemic eliminated the ability for data collection efforts to include in-home observations, thus increasing the likelihood of reports reflecting socially desirable responses. Lastly, while the items of the partner support scale captures widely accepted indicators of support, this measure was developed and validated to assess partner support in elder caregiving relationships. Therefore, this measure may not fully capture the partner support experiences of these young Latina mothers.

Implications

The current findings suggest parenting emotions are sensitivity to deviations in mothers' stress. Further, our findings reveal the potential for partner support to provide some buffer to mothers' stress spillover in real time. While this study specifically focused on families' early pandemic experiences, these findings are most likely not pandemic-specific, as all measures were generalized about day-to-day experiences of stress, support, and parent-child interactions. Thus, these findings broadly suggest that programs targeting partner support could benefit families in crisis. Importantly, our study utilized a within-person design providing new insights into the benefits of partner emotional support. Previous studies of the stress-buffering effects of partner support typically used between-subjects designs, highlighting differences between high and low support families (McRae et al., 2021). Our findings suggest that high partner support is not necessarily required to be comforting, reassuring, and encouraging. As long as partners are providing their own typical levels of support, mothers benefit. Thus, our within-person analyses highlight the importance of partners maintaining their average levels, at whatever level that might be. When partners withdraw or reduce support, providing less than typical levels, mothers are more likely to struggle to keep their stress from spilling over into their emotions with their child. Put another way, partners are doing a relatively good job providing mothers the emotional assistance they need, and thus programs should not necessarily focus on elevating partner support but provide tools and encouragement that allow partners to continue to maintain their own unique levels of affection, attention, and concern for their partners.

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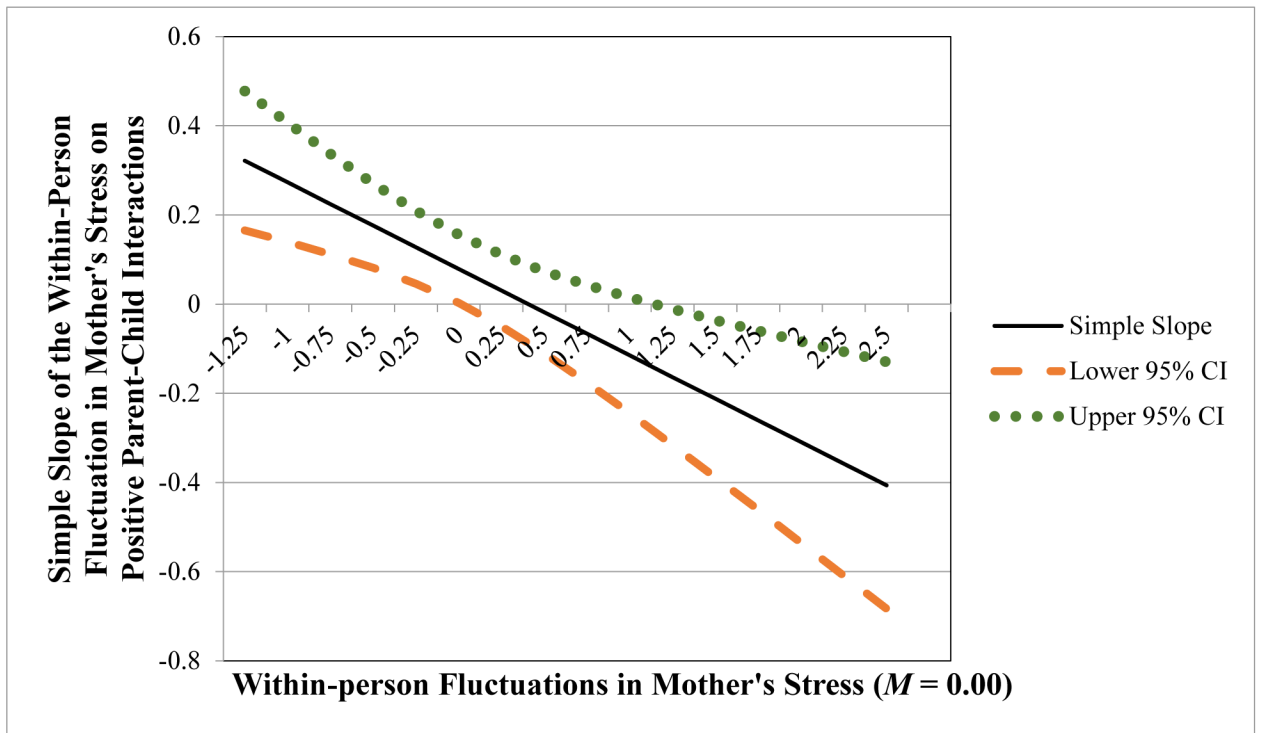


Figure 1. Johnson-Neyman Plot for the Simple Slope of the Quadratic Effect of Within-Person Maternal Stress on Positive Parent-Child Interactions

Note. Johnson-Neyman plot of the region of significance for the simple slope of within-person deviations in mother’s stress on positive parent-child interactions.

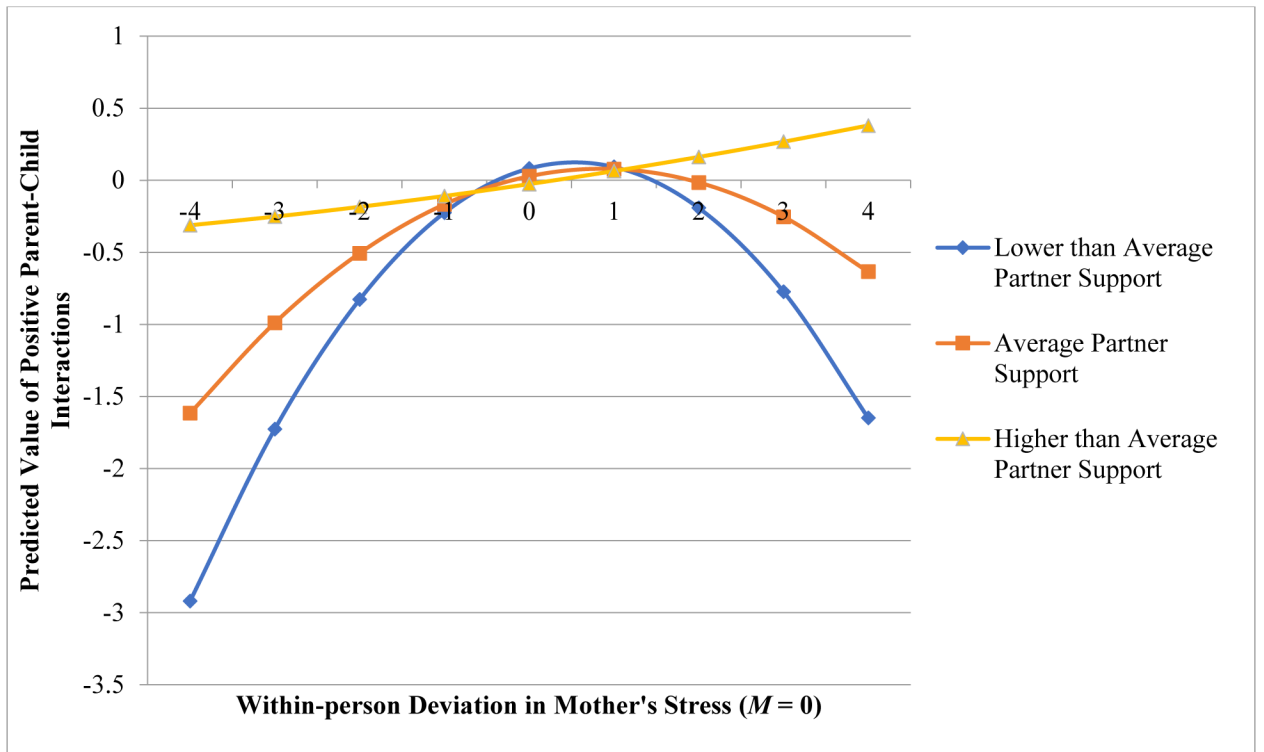


Figure 2. Simple Slopes of the Quadratic Effect of Within-person Maternal Stress on Positive Parent-Child Interactions by Low, Average, and High Within-person Partner Support

Note 1. Plot of the predicted value of positive parent-child child interactions at lower, person-average, and higher levels of partner support across the range of within-person deviations in mother's stress.

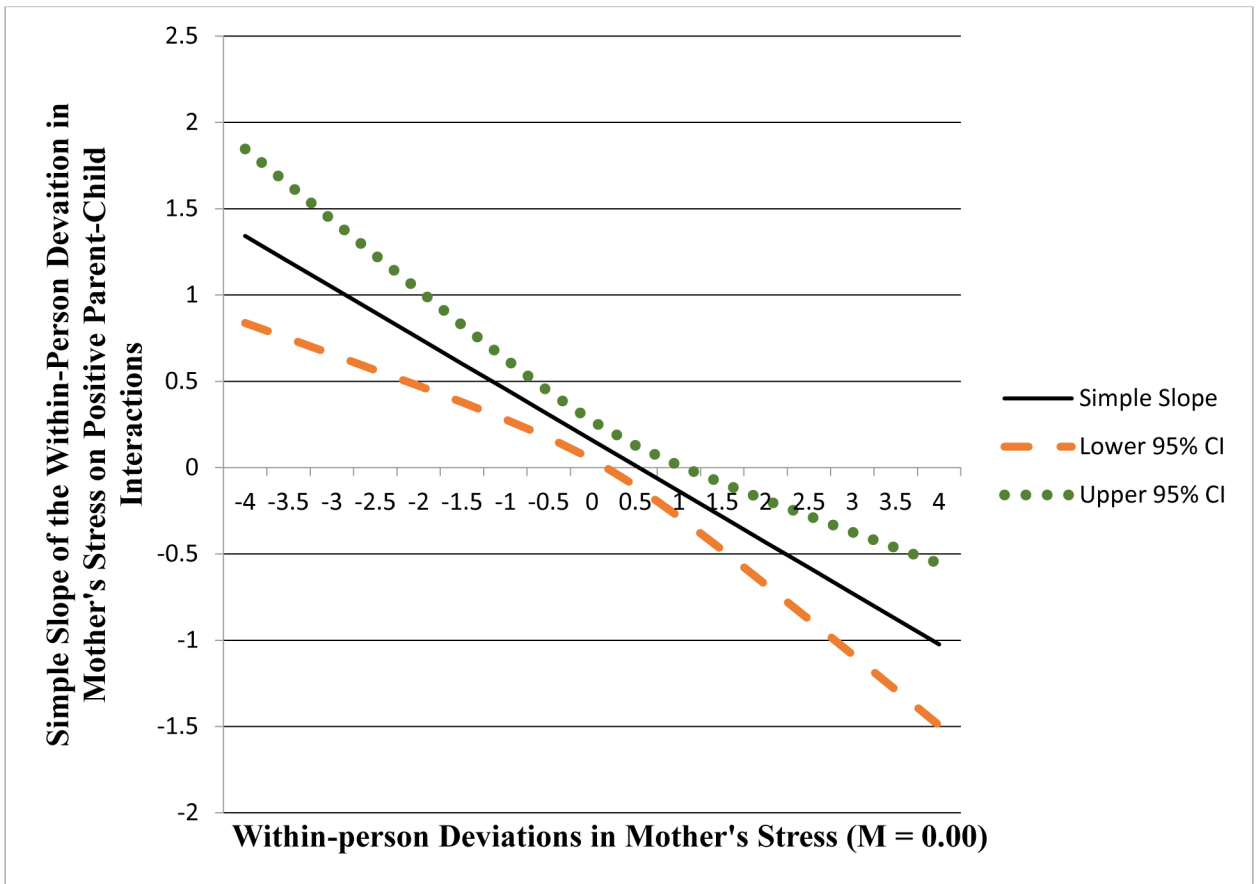


Figure 3a. Johnson-Neyman Plot for the Simple Slope of the Quadratic Effect of Within-Person Mother's Stress on Positive Parent-Child Interactions at Lower Levels of Partner Support
 Note. Johnson-Neyman plot of the simple slope of within-person deviations in mother's stress on positive parent-child interactions when partner social support was lower than average (-1 standard deviation) across the range of within-person deviations in mother's stress. All values are standardized. For mothers receiving below average partner support: All stress levels less than or equal to 0.26 standardized units above mothers' average stress demonstrated a *positive* effect on mother-child interactions. Increases in stress levels between 0.26 - 1.31 standardized units above their average stress level had *no* significant effect on parent-child interactions. However, stress levels greater than or equal to 1.31 standardized units above mothers' average stress demonstrated a negative effect on mother-child interactions.

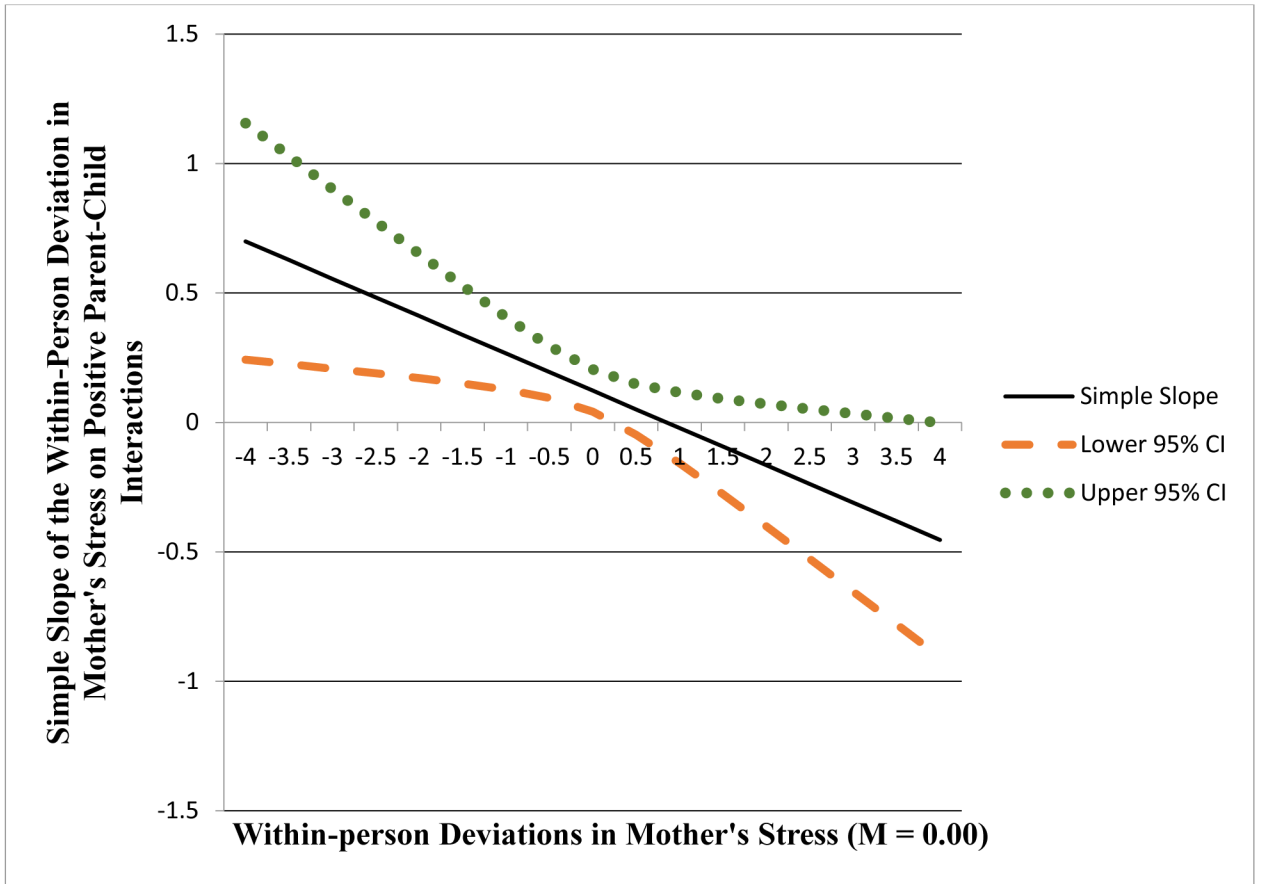


Figure 3b. Johnson-Neyman Plot for the Simple Slope of the Quadratic Effect of Within-Person Mother's Stress on Positive Parent-Child Interactions at Person-Average Levels of Partner Support

Note. Johnson-Neyman plot of the simple slope of within-person deviations in mother's stress on positive parent-child interactions when partner social support was at person-average (0) across the range of within-person deviations in mother's stress. All values are standardized. For mothers receiving their average levels of partner support: Decreases in stress below a person's mean were associated with more positive mother-child interactions and, all values in stress level deviations up to 0.26 standardized units above the mother's mean stress were significantly associated with more *positive* mother-child interactions. Increases in stress levels between 0.26 - 3.96 standardized units above their average stress level had *no* significant effect on mother-child interactions. Increases in stress greater than or equal to 3.96 standardized units above their average level of stress significantly and *negatively* predicted mother-child interaction.

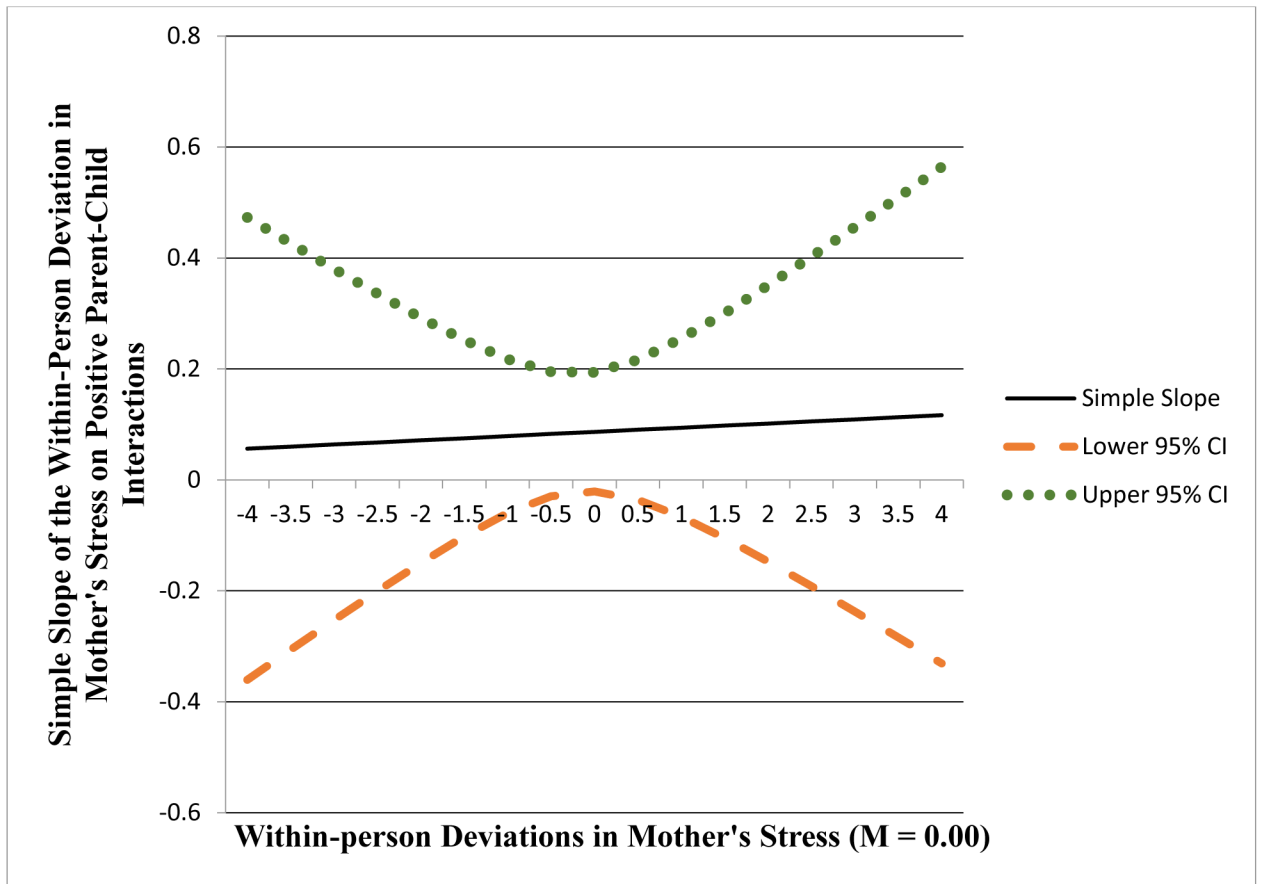


Figure 3c. Johnson-Neyman Plot for the Simple Slope of the Quadratic Effect of Within-Person Mother's Stress on Positive Parent-Child Interactions at Higher Levels of Partner Support
Note. Johnson-Neyman plot of the simple slope of within-person deviations in mother's stress on positive parent-child interactions when partner social support was higher than average (+1 standard deviation) across the range of within-person deviations in mother's stress. All values are standardized. The simple slope within-person deviation in mother's stress on positive parent-child interactions was not significant when levels of partner support were above a person's average.

Table 1

Descriptive Statistics and Intercorrelations

	ICC	1	2	3	4	5	6	7	8
1. Positive Parenting Experiences									
2. Mom Stress		-.44*							
3. Partner Support		.27*	-.37**						
4. Mom Age (Years)		.07	-.04	.08					
5. Child Age (Months)		-.21	.03	.04	.63**				
6. Income		.21	-.33*	.21	.22	-.16			
7. Total Children		.13	-.01	.16	.63**	.35**	.04		
8. Visits		-.02	.01	.12	-.10	-.08	-.01	.13	
M(SD)		4.31 (0.43)	1.18 (0.67)	3.64 (0.41)	26.23 (5.73)	36.64 (33.59)	8.61 (4.02)	1.81 (1.00)	8.24 (3.97)

Note. * $p < .05$. ** $p < .01$.