

Parenting in Poverty: Attention Bias and Anxiety Interact to Predict Parents' Perceptions of Daily Parenting Hassles

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Research has long acknowledged the centrality of parents' subjective experiences in the caregiving role for the organization of parenting behaviors and family functioning. Recent scientific advances in cognitive process models and in the neurobiology of parenting indicate that parenting is shaped in part by conscious and nonconscious cognitive processes. This study extends a growing literature on neurocognitive models of parenting by exploring the extent to which attention processes in parents operate independently and interactively with intrapsychic processes, proximal interpersonal stressors, and the larger socioeconomic context to predict perceptions of parenting hassles in primarily low-income Latino/a parents of young children living in urban areas of concentrated disadvantage ($N = 185$). Analyses indicated that parent reports of anxiety, intimate partner violence, and perceptions of financial hardship each uniquely predicted parents' perceptions of daily parenting hassles. Parents' attentional bias toward threat interacted with anxiety symptoms such that parents experiencing high levels of attention bias toward threat in combination with high levels of anxiety reported significantly more daily parenting hassles. Findings from the current study provide insight into the ways in which neurocognitive processes affect one aspect of parenting, with implications for programs and policies designed to support parenting for families in poverty.

Keywords: parenting hassles, attentional bias, anxiety, intimate partner violence, poverty

Parenting behaviors are multidetermined and emerge from a coordinated psychobiological caregiving system composed of parents' cognitive (Deater-Deckard, Wang, Chen, & Bell, 2012), affective (Belsky & Barends, 2002), neural (e.g., Swain, 2011), and physiological processes (e.g., Finegood et al., 2016; Gonzalez, Jenkins, Steiner, & Fleming, 2012). Research in areas focusing on risk and prevention to support parenting in the context of adversity highlights the ways that parents' own psychological and neurobiological resources work in concert with proximal interpersonal stressors as well as with the larger socioeconomic context (Belsky & Fearon, 2004). Building on this perspective, the following paper considers the respective roles that socioeconomic, interpersonal, and intrapsychic processes may play in predicting low-income parents' perceptions of their experiences in the parenting role. Specifically, this paper examines perceptions of daily parenting hassles, which constitute a significant part of the subjective parent

experience and, at high levels, constitute a form of parenting stress with implications for family functioning and parent well-being (Crnic, Gaze, & Hoffman, 2005; Crnic & Greenberg, 1990).

Perceptions of Daily Hassles in the Parenting Role

Minor parenting hassles describe some of the day-to-day challenges that adults face in the process of caring for their children (Crnic & Greenberg, 1990). These include the normal but often-times frustrating occurrences faced by all parents, such as when children have difficulty at mealtimes or when children are resistant to or struggle with daily routines. These and other common minor stressors associated with parenting constitute some of the instances of difficulty that all parents face when raising children (Crnic & Low, 2002). The accumulation of these minor daily hassles over time, however, has been associated with increased parent distress, lowered satisfaction in the caregiving role, and increased child behavior problems (Creasey & Reese, 1996; Crnic & Greenberg, 1990), as well as with reductions in both the sensitivity of parents' behaviors and the positivity of parent-child dyadic interactions (Crnic et al., 2005). As such, perceived hassles in the parenting role constitute a means of understanding parenting stress processes that are highly relevant to parent well-being and family functioning. Certainly, at least some of the differences in parents' feelings of frustration and hassle may be due to child temperamental difficulty (Coplan, Bowker, & Cooper, 2003). But recent research suggests that at least some of the differences in how parents perceive the hassles of caregiving may also be due to factors that are not related to child behavior. Prior work suggests that those factors include the larger socioeconomic context in which families are embedded; a range of interpersonal factors that many parents

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navigate, such as interparental conflict; and intrapsychic factors, including parents' own affective and cognitive processes (Crnic & Low, 2002; Deater-Deckard, 2004).

Socioeconomic Predictors

Families are embedded within socioeconomic contexts that shape parents' well-being, family functioning, and child development (Conger & Donnellan, 2007; McLoyd, 1990). In the context of deep poverty, parents are at increased risk of experiencing anxiety, depression, negative life events, and reduced coping skills necessary for dealing with the significant and often daily stressors they confront (McLoyd, 1990). In turn, parents in poverty not only experience greater levels of financial hardship but also experience higher levels of parenting stress (Steele et al., 2016). Indeed, perceptions of greater material hardship predict parents' higher levels of psychological distress and less optimal parenting behaviors even when controlling for income levels (Gershoff, Aber, Raver, & Lennon, 2007). As yet, however, no studies to our knowledge have explicitly tested the extent to which financial or material hardship is associated with perceptions of minor parenting hassles above and beyond measured indicators of families' poverty levels.

While early work in the area of socioeconomic conditions and family processes has compared mean levels of parenting competence between low-income families and their middle- and high-income counterparts, more recent work has focused more closely on predictors of individual differences in parenting among samples of low-income parents (Burchinal, Vernon-Feagans, Cox, & Key Family Life Project Investigators, 2008; Raver, 2003). This increased attention to the predictors of family processes within groups of low-income parents has underscored that not all low-income families are alike in terms of the stressors that they face or in terms of their risk of parenting difficulty. These studies also offer to inform programs and policies that are means-tested, where an understanding of the mechanisms that alternately support or jeopardize low-income families' healthy functioning is of prime importance. In keeping with this more recent line of inquiry, this paper investigates key predictors of within-group differences in low-income parents' subjective experiences of hassles.

Interpersonal Predictors

In addition to socioeconomic factors, parents' perceptions of parenting hassles may be compounded by difficulties in interpersonal relationships outside the parent-child dyad. Interpersonal factors such as the perceived quality of the marital relationship have been consistently shown to be associated with perceptions of stress in the parent role as well as with parenting styles (Ponnet et al., 2013). Higher levels of marital conflict in particular have been shown across many studies to be associated with higher levels of distress in parents (Goldberg & Easterbrooks, 1984) and to be a robust predictor of more negative parenting behaviors with children (Krishnakumar & Buehler, 2000). Furthermore, exposure to intimate partner violence (IPV)—that is, to physical and/or sexual violence, threats of violence, and/or psychological abuse perpetrated by an intimate partner—may be a prominent contributor to parents' perceptions of difficulty in the parenting role. IPV is widespread—35% of women in the United States experience some

exposure to IPV in their lifetime (Black et al., 2011). Perpetration and victimization of IPV are more prevalent in contexts characterized by deep poverty and concentrated disadvantage (Black et al., 2011) and are associated with increased prevalence of psychiatric disorders, physical health problems, and material hardship in these contexts (Tolman & Rosen, 2001). Especially important for the current investigation is that IPV has also been associated with increased parenting stress (Renner, 2009) and that forms of IPV particular to the parenting role have been positively associated with perceived parenting hassles (Ahlf-Dunn & Huth-Bocks, 2016). Understanding the costs of IPV exposure for parents' perceptions of stress in the parenting role in contexts where it is highly prevalent thus remains a pressing public health priority.

Intrapsychic Predictors

Parents' own psychological characteristics also play an important role in how they perceive parenting in a more negative versus more positive light (Crnic & Low, 2002). Among the most widely studied parent characteristics are anxiety symptoms (e.g., Turner, Beidel, Roberson-Nay, & Tervo, 2003). Anxious parents experience more stress in the parenting role (e.g., Delvecchio, Sciandra, Finos, Mazzeschi, & Riso, 2015) and in general tend to experience parenting as more negative than nonanxious parents (Deater-Deckard, 2004). One framework in which to understand perceptions of stress in the parent role has to do with the appraisals or the cognitive evaluations that parents make about the difficulties and daily hassles of parenting (Crnic & Low, 2002; Mazur, 2006). Parents who exhibit negatively biased appraisals of their experience (who, for instance, take high amounts of responsibility for negative aspects of parenting or who selectively focus on the negative aspects of parenting) also tend to perceive higher frequencies of daily parenting hassles (Mazur, 2006). Yet the process by which parent characteristics such as mood and contextual risk factors such as material hardship come to influence parents' appraisals and perceptions of daily hassles is not well understood.

One neurobiologically anchored candidate mechanism for this process underlying parents' perceptions of hassles is that of adult attention. For instance, the process model of emotion posited by Gross (2014) highlights the ways in which individuals generate emotional and behavioral responses to a given situation or stimulus by first attending to that stimulus and then appraising it in a positive or negative light. The deployment of attention toward or away from specific aspects of the environment represents a coordinated set of neurocognitive processes (Petersen & Posner, 2012; Posner, 1994) that can become biased toward more positive or negative features of the environment. As such, attention processes serve as a "gate to engagement" (Petersen & Posner, 2012) and may influence, quite literally, what parents see in themselves, their children, and their successes versus difficulties in the parenting role. Past research on attention bias among adults and children suggests not only that humans are particularly good at attending extremely quickly to emotional (e.g., LoBue & DeLoache, 2008) and to threatening (Bublitzky & Schupp, 2012) stimuli in their environment but also that environmental exposure to acute stressors may "tune" attentional processes over time to be biased toward threatening information, serving as a nonconscious neuropsychological survival mechanism to protect an individual from harm in the context of high stress (Bar-Haim, Lamy, Pergamin,

Bakermans-Kranenburg, & van IJzendoorn, 2007; Pollak, Vardi, Putzer Bechner, & Curtin, 2005).

Such attentional biases to threat may confer vulnerabilities to individuals, and to parents in particular, to the extent that they increase perceptions of difficulty or stress in the parenting role. This hypothesis is supported by a vast prior literature suggesting that negative attentional bias increases the effect of other psychosocial and experiential vulnerabilities on individual functioning (Bar-Haim et al., 2007). This is evident within developmental studies of children and adolescents, for example, where it has been shown that behaviorally inhibited children are more likely to develop later life anxiety symptomatology if they display a pattern of attentional bias to threat (Pérez-Edgar et al., 2010). Findings in adults suggest that highly anxious individuals display heightened attentional biases to threat, which maintains anxiety disorders across time (Bar-Haim et al., 2007; Mathews & MacLeod, 2005) and may also interact with individual vulnerability factors to predict emotional difficulty (Osinsky, Löscher, Hennig, Alexander, & MacLeod, 2012). Furthermore, among individuals who are exposed to trauma, those who show negative attentional bias are at risk of developing psychiatric problems, including posttraumatic stress symptomatology, as seen among combat veterans (Iacoviello et al., 2014) and among women exposed to IPV (DePierro, D'Andrea, & Pole, 2013). Despite this strong foundation, little to no prior research has focused on the extent to which attentional biases in parents—or the interactions of attentional biases with socioeconomic, interpersonal, and other intrapsychic factors—represent significant predictors of perceptions of daily parenting hassles in parents of young children living in conditions of poverty.

The Present Study

To address these questions, the primary goal of this study was to test the extent to which financial hardship, exposure to IPV, symptoms of anxiety, and attentional biases toward threat are associated independently and interactively with parents' appraisals of hassles in the parenting role. These questions are particularly pressing for families in poverty. While prior research has underscored the ways that parents' cognitive resources may be depleted by the challenges of "trying to make ends meet" with low incomes and few material assets, few studies have quantitatively examined the ways in which mounting financial, interpersonal, and psychological pressures may be independently and jointly predictive of perceptions of the parenting role for parents in the context of poverty (Edin & Lein, 1997; Mullainathan & Shafir, 2013). In addition, while new research has begun to test models of neurocognitive processes and parenting in the contexts of poverty, few studies to our knowledge have extended those questions to include Latino/a families living in urban areas of concentrated disadvantage. Doing so is important, given that this group increasingly represents a large fraction of families facing poverty in the United States (Lopez & Cohn, 2011). Latino/a families in the United States are at significant risk of experiencing higher levels of adversity, given their ethnic minority status, their lower access to public services, and for some, greater barriers to social inclusion based on language and immigrant status (Coburn, Gonzales, Luicken, & Crnic, 2016; Yoshikawa & Kalil, 2011). Yet few studies have tested multivariate models predicting individual differences in Latino/a parents' vulnerability versus resilience in their percep-

tions of the parenting role (Parke et al., 2004). In the following analyses, we aimed to contribute to these theoretically important and policy-relevant questions.

Consistent with prior research on parenting daily hassles, we expect perceptions of financial hardship, exposure to IPV, anxiety, and attentional bias toward threat to be each uniquely associated with low-income parents' increased reports of daily hassles in the parenting role. Furthermore, given prior literature suggesting that higher proneness to negative attentional bias may exacerbate the role of other psychosocial vulnerabilities, such as anxiety, in predicting adults' appraisals, we expect that parents' attentional biases toward negative stimuli may serve as a key moderator of the other risks examined in this study. More specifically, we expect that parents whose attentional biases are directed toward threatening stimuli (i.e., displaying a more negative attention bias) and who are also experiencing high amounts of anxiety, financial hardship, and exposure to IPV will endorse higher amounts of daily hassles in the parenting role.

Method

Participants

In order to oversample families below the poverty line, 190 families were recruited from seven social service programs providing federally funded Early Head Start home-visiting services (where eligibility is largely determined by very low family income) to families with children 0–3 years of age. Additional families ($n = 77$) were recruited from the waiting rooms of three public hospital-affiliated pediatric clinics in the same neighborhoods as those social service agencies in order to increase the range of family incomes represented in the sample.

The data used in this analysis come from 185 parents who had nonmissing data on the analysis variables. The majority of primary caregivers and respondents were mothers (92.4%). 7.6% of respondents were fathers, and 0.5% were grandparents. The average age of the respondents was 31 years ($SD = 7$). Thirty-five percent of parents spoke English as a primary language; 65% of parents spoke Spanish as a primary language. The mean age of children in the sample was 24 months ($SD = 9$); 55% of children were female and 45% were male. The majority of families were Hispanic or Latino. The majority of families were low income—68% of the analysis sample reported an annual total household income of less than \$21,000.

Procedure

Parent respondents were assessed in the home by an ethnically diverse, bilingual team of trained assessors recruited from New York University and the greater New York City community. Written and informed consent was obtained from the primary caregiver. Assessors collected survey and observational data on the mother and child during visits that lasted approximately 2 hr. Survey data were collected in either Spanish or English (depending on parental preference) via paper as well as laptops, and observational data were collected via digital video for later coding. All measures and procedures were approved by the Institutional Review Board (IRB) of New York University (IRB 13–9818).

Measures

Generalized anxiety disorder. The Generalized Anxiety Disorder 7-Item (GAD-7) Scale (Spitzer, Kroenke, Williams, & Löwe, 2006) was used to assess symptoms and severity of anxiety based on the *DSM-IV* (American Psychiatric Association [2000]) diagnostic criteria for generalized anxiety disorder (GAD). This seven-item scale has demonstrated strong internal consistency and test-retest reliability as well as convergent, construct, criterion, procedural, and factorial validity for the diagnoses of GAD (Kroenke, Spitzer, Williams, Monahan, & Löwe, 2007). Parents indicated how often they had been bothered by symptoms of anxiety in the last 2 weeks, rated on a 4-point Likert-type scale (0 = *not at all sure*, 1 = *several days*, 2 = *over half the days*, 3 = *nearly every day*). Mean scores were calculated among respondents who answered at least five of the seven items (Cronbach's $\alpha = .85$); higher scores indicated more anxiety symptoms in the last 2 weeks.

Conflict Tactics Scale. A seven-item short form of the Conflict Tactics Scale (Straus & Douglas, 2004) was used to assess IPV. Evidence for reliability and validity across gender and diverse ethnic groups is prevalent (Straus, 1979; Straus & Douglas, 2004). In keeping with the definition of IPV by the Centers for Disease Control and Prevention (2016) that emphasizes "physical, sexual, or psychological harm inflicted by someone who is a current or former spouse or dating partner", respondents indicated how often physical and psychological acts of violence occurred within their intimate relationship (from 0 [*never*] to 4 [*all the time*]). Physical violence items included *my partner or I pushed, shoved, or slapped each other* and *my partner or I hit or tried to hit him/her/you with something*. Psychological items included *my partner or I insulted, swore, shouted, or yelled at each other*; *my partner or I sulked or refused to talk about an issue*; and *my partner or I threatened to hit or throw something at him/her/you*. The two positively rated items in the scale were not included in our analyses. For descriptive analyses, exposure to any physical violence and exposure to psychological conflict at moderate levels or higher were calculated. For analyses predicting parenting daily hassles, a mean score of IPV was calculated among all participants in the analytic sample (Cronbach's $\alpha = .72$); higher scores indicated higher instances of IPV.

Parenting daily hassles. The Parenting Daily Hassles (PDH) Scale (Crnic & Greenberg, 1990) was completed to assess parents' appraisals of everyday hassles and inconveniences associated with parenting. This measure has been shown to be reliable, with strong concurrent validity (Crnic & Greenberg, 1990). It consists of 20 items rated on a 5-point Likert-type scale for frequency of occurrence (1 = *rarely*, 2 = *sometimes*, 3 = *a lot*, 4 = *constantly*), with an added frequency score of 0 (*never*). Example items include *the kids won't listen*, *the kids won't do what they are asked without being nagged*, *having to change your plans because of an unpredicted child need*, and *the kids get dirty several times a day, requiring changes of clothes*. In its original form, the PDH Scale is composed of both a frequency rating scale and an intensity rating scale; however, for the purposes of this study, only the frequency rating scale was used. Mean scores were calculated among respondents who answered at least 15 of the 20 items (Cronbach's $\alpha = .88$); higher scores on the parenting daily hassles

measure indicated higher perceptions of hassles in the caregiving context.

Financial hardship. Financial hardship was assessed using a total of eight parent-reported items, four of which asked about difficulty paying bills and whether or not utilities have been shut off in the past 12 months, and four of which asked whether or not parents are currently receiving (or have ever received) welfare or lived in public housing. Responses were dichotomized in terms of whether or not parents reported difficulty or endorsed each item, and all eight items were averaged using standard practice.

Attentional bias. Attentional bias toward threat was assessed using a computerized dot-probe task, a widely used measure of attention bias to emotional cues. In this task, participants are asked to identify the position of a target dot (asterisk) after a brief presentation of emotionally neutral (e.g., book, lamp), positive (e.g., kittens), or negative (e.g., weapon, threatening dog) pairs of images drawn from the International Affective Picture System (Lang, Bradley, & Cuthbert, 1999). Each trial began with a fixation cross presented for 500 ms at the center of the screen. After this, one neutral and one positive or negative picture (or two neutral pictures) are presented side by side for 250 ms. Immediately following the picture pair presentation, a target dot appears on the left or right side of the screen. Parents were instructed to indicate as quickly as possible whether the dot was on the right or left side using laptop keys that corresponded to the location on the computer screen. The dot remained on the screen until the participant responded. If the participant did not respond within 5,000 ms, the next trial began automatically. Seventy-two trials were presented in a semirandom order that was held constant across all participants.

Accuracy and response time for each trial were recorded and aggregated using standard practice to calculate a set of six variables. Mean response latencies were calculated for each trial type if at least 60% of trials were valid. Attention bias toward threat was calculated by subtracting the mean latency to respond to congruent trials (negative image and dot appear on the same side of the screen) from the mean latency to respond to incongruent trials (negative image and dot appear on opposite sides of the screen). If participants preferentially attend to the threat-related image, latencies will be faster for congruent displays and longer for incongruent displays, creating attentional bias scores that are large and positive. Conversely, if participants are less distracted by the threatening image, the difference between the latencies is shorter and the difference is smaller.

Covariates. In addition to the aforementioned variables, covariates were modeled, including parent report of the highest level of education attained as well as a dummy code for whether the parent reported an annual total household income of at least \$21,000. All continuous variables were standardized via z-score transformation prior to regression analyses.

Data Analysis Plan

We first conducted a series of preliminary analyses that included descriptive statistics as well as zero-order correlations of the analysis variables. To address our primary research aim—the prediction of daily hassles from parents' levels of financial hardship, exposure to IPV, anxiety, and attentional biases—we con-

ducted a series of ordinary least squares (OLS) regression models using Mplus 7 software (Muthén & Muthén, 1998–2012).

Model 1 regressed parent reports of daily hassles onto a vector of independent variables that included parents' reports of IPV, financial hardship, anxiety symptoms, and their attentional bias toward threat exhibited during the dot-probe task. Additionally, there were two covariates in this model, the first of which was a dummy code for whether families reported a total annual household income of more than \$21,000 (1) or not (0). The second covariate included was parents' highest level of education attained. These covariates were included in the model on an a priori basis. Three subsequent models were built to test the extent to which parents' attentional biases interacted with their levels of anxiety, experiences of financial hardship, and exposure to domestic violence. Specifically, Model 2 was the same as Model 1 with the addition of an Anxiety \times Attentional Bias interaction. Model 3 was the same as Model 1 with the addition of a Financial Hardship \times Attentional Bias interaction. Model 4 was the same as Model 1 with the addition of a Domestic Violence \times Attentional Bias interaction.

Results

Preliminary Analyses

Table 1 displays descriptive statistics of the analysis variables. As shown in Table 1, parents reported a moderate amount of daily parenting hassles ($M = 1.46$, $SD = 0.57$, minimum of 0.35, maximum of 3.35); that is, parents felt hassled in the parenting role between *rarely* and *sometimes*, on average, although there was considerable spread in the distribution of hassles reported. Mothers in the sample reported feeling bothered by symptoms of anxiety between *not at all* and for *several days* of the past 2 weeks ($M = 0.52$, $SD = 0.58$). Based on symptom scores established using this measure, approximately 21% of mothers met criteria for mild anxiety, 5% met criteria for moderate anxiety, and 3% met criteria for severe anxiety. Mothers in our sample experienced a moderate amount of IPV ($M = 0.42$, $SD = 0.50$, minimum of 0.00, maximum of 3.2). A mean of 0.42 indicates parents reported that IPV occurrences happened between *never* and *rarely* on average. Notably, 16.7% of the mothers in our sample reported some physical violence (i.e., reported a score of 1 or greater on any of the physical violence items), and 65.7% of mothers reported some psychological conflict (i.e., reported a score of 1 or greater on any of the psychological conflict items). In our sample, 52% of moth-

ers endorsed at least one of the financial hardship items, suggesting a significant amount of economic strain and difficulty in making ends meet. Approximately 68% of families in the sample reported an annual household income of less than \$21,000. The highest level of education attained by mothers in the sample was a GED on average. Approximately 37% of mothers in the sample had not graduated high school, and 11% had completed a bachelor's degree or higher.

Table 2 displays zero-order correlations between the analysis variables. Daily parenting hassles were positively associated with parent-reported anxiety symptoms, $r = .47$, $p < .01$, financial hardship, $r = .21$, $p < .01$, and reports of IPV, $r = .25$, $p < .01$. Attentional bias toward threat was not associated with daily hassles, nor was parent education or household income. As noted in Table 2, there was a modest positive correlation between financial hardship and anxiety symptoms, $r = .18$, $p < .05$, and between exposure to IPV and anxiety symptoms, $r = .27$, $p < .01$.

Primary Analyses

Results of OLS regression models predicting parenting hassles are displayed in Table 3. Model 1 of Table 3 displays the unique main effects of anxiety symptoms, financial hardship, IPV, attentional bias toward threat, and the covariates on parenting hassles. Anxiety was the largest predictor of hassles included in the model ($b = 0.23$, $SE = 0.03$, $p < .001$) net of the other predictors included in the model. In terms of effect size, a 1 SD increase in anxiety symptomatology was associated with a 0.40 SD increase in reported daily hassles. Greater financial hardship was also modestly predictive of higher levels of parent-reported hassles ($b = 0.08$, $SE = 0.03$, $p < .05$), with a 1 SD increase in financial hardship associated with a 0.15 SD increase in hassles net of the other predictors in the model. Exposure to IPV was also modestly associated with parent-reported hassles ($b = 0.09$, $SE = 0.04$, $p < .05$). In terms of effect size, a 1 SD increase in exposure to IPV was associated with a 0.15 SD increase in reported hassles. No statistically significant association was found between attentional bias toward threat and daily hassles or between parents' education or household income and daily hassles. Model 1 explained 26.6% of the variance in parents' reports of daily hassles in the parenting role.

Model 2 of Table 3 is identical to Model 1 with the addition of an Anxiety Symptoms \times Attentional Bias Toward Threat interaction. The interaction between anxiety symptoms and attentional bias toward threat was a significant predictor of daily hassles ($b = 0.07$, $SE = 0.03$, $p < .05$), suggesting that the relation between anxiety symptoms and reports of hassles in the parenting role is moderated by parents' attentional biases toward threat. As shown in Figure 1, attentional bias exacerbated the relation between anxiety and daily hassles such that those parents who display a high attentional bias toward threat and who also experience high amounts of anxiety report the most daily hassles in the parenting role. Adding this interaction to the model explained an additional 1.9% of the variance in parenting hassles.

Models 3 and 4 of Table 3 are identical to Model 1 with the addition of interactions between financial hardship and attention bias and the addition of an interaction between exposure to IPV and attention bias. Neither the interaction between financial hardship and attention bias nor the interaction between IPV and atten-

Table 1
Descriptive Statistics of the Analysis Variables ($N = 185$)

| Variable | M /% | SD | Minimum | Maximum |
|---------------------------------------|--------|-------|---------|---------|
| Parenting daily hassles | 1.46 | .57 | .35 | 3.35 |
| Anxiety | .52 | .58 | .00 | 2.57 |
| IPV | .42 | .50 | .00 | 3.20 |
| Financial hardship | .12 | .14 | .00 | .63 |
| Dot-probe attentional bias to threat | .94 | 46.64 | -159.00 | 128.20 |
| Household income <\$21,000 (% yes) | 68% | — | — | — |
| Parent education | 3.46 | 1.67 | 1.00 | 7.00 |

Note. IPV = intimate partner violence.

Table 2
Zero-Order Correlations Among the Analysis Variables ($N = 185$)

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-----------------------|-------|-------|-------|--------|------|-------|---|
| 1. IPV | 1 | — | — | — | — | — | — |
| 2. Anxiety | .27** | 1 | — | — | — | — | — |
| 3. Parent education | .03 | .00 | 1 | — | — | — | — |
| 4. Income | .00 | -.04 | .26** | 1 | — | — | — |
| 5. Attentional bias | -.03 | -.03 | .21** | .00 | 1 | — | — |
| 6. Financial hardship | -.06 | .18* | -.00 | -.20** | -.11 | 1 | — |
| 7. Parenting hassles | .25** | .47** | .02 | -.05 | .01 | .21** | 1 |

Note. IPV = intimate partner violence.

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

tion bias were statistically significantly associated with parenting hassles, and these additions to the model did not explain any more variance in parenting daily hassles. In subsequent analyses, we reran each model excluding primary caregivers who were not mothers (14 fathers and one grandparent) to assess the extent to which parameter estimates were robust in a sample of only mothers. Under these constraints, parameter estimates did not change meaningfully from what they were in the full analysis sample. As a further robustness check, we reran each model using full information maximum likelihood as a missing data treatment and assessed any changes in the estimates. Parameter estimates did not change in a meaningful way except for the estimate of the interaction between attention bias and anxiety, which under these specifications was no longer significant at $p < .05$ but remained significant at trend level ($b = 0.058$, $SE = 0.03$, $p = .09$).

Discussion

How do low-income parents cognitively represent the daily challenges involved in caring for their infants and toddlers while also managing a range of economic, interpersonal, and psychosocial stressors? Our descriptive analyses of parents' reports of daily hassles are heartening: On the whole, low-income parents in four neighborhoods in New York City reported relatively low amounts of daily hassles overall. The mean level of daily hassles among the

parents in our sample is similar to that found among low-income Mexican American women surveyed during the prenatal period, who also reported lower rather than higher levels of everyday hassles on average (Coburn et al., 2016). With this in mind, we were also able to examine the ways that some parents reported much more negative appraisals regarding the challenges of parenting—with a substantial fraction of parents reporting a high frequency of hassles.

Evidence for the Roles of Parental Anxiety and Attention

What accounts for these individual differences in perceptions of daily parenting hassles among the adult respondents in our sample? Our analyses highlight the roles of adults' self-reported anxiety symptoms and neurobiologically anchored attention processes in predicting parents' perceptions of hassles. Specifically, parents who reported higher levels of anxiety (including persistent feelings of nervousness, worry, and restlessness) reported significantly higher amounts of hassles in the parenting role on average. This finding is in keeping with prior research with clinical and non-clinical samples, where difficulty modulating feelings of anxiety has been argued to exert a debilitating effect on adults' cognitions about parenting and their parenting behavior (Möller, Majdandžić, & Bögels, 2015).

Importantly, this study extends emerging neuropsychological research to also consider the ways in which parents' nonconscious attentional biases toward more negatively versus positively valenced stimuli may exacerbate the role of anxiety in tuning subjective experiences of parenting (Bar-Haim et al., 2007). To capture the potential role of adult attention, we adapted the dot-probe paradigm, a standardized neurocognitive assessment of attention that is often used in lab contexts, for laptop administration with low-income Latino/a parents in home visits. Our results suggest that parents' attentional biases toward negative stimuli appear to moderate the relation between anxiety and parents' perception of hassles—parents experiencing high levels of attention bias in combination with high levels of anxiety reported significantly more daily hassles in the context of caregiving. Findings from the current study provide a window into the neurocognitive processes

Table 3
Regressions Predicting Daily Hassles ($N = 185$)

| Variable | Model 1 | | | Model 2 | | | Model 3 | | | Model 4 | | |
|----------------------------------|----------|-----------|---------|----------|-----------|---------|----------|-----------|---------|----------|-----------|---------|
| | <i>b</i> | <i>SE</i> | β |
| Intercept | 1.47 | | | 1.47 | | | 1.47 | | | 1.46 | | |
| Education | .00 | .02 | .01 | .00 | .02 | .01 | .00 | .02 | .01 | .00 | .02 | .01 |
| Income | -.01 | .08 | -.01 | -.01 | .08 | -.01 | -.01 | .08 | -.01 | -.01 | .08 | -.01 |
| Anxiety | .23 | .03 | .40** | .22 | .03 | .38** | .23 | .03 | .41** | .23 | .03 | .40** |
| Financial hardship | .08 | .03 | .15* | .09 | .03 | .17** | .08 | .03 | .15* | .08 | .03 | .15* |
| IPV | .09 | .04 | .15* | .10 | .04 | .16* | .09 | .04 | .15* | .09 | .04 | .15* |
| Attentional bias | .02 | .03 | .05 | .02 | .03 | .03 | .02 | .03 | .03 | .02 | .03 | .04 |
| Anxiety \times Bias | | | | .07 | .03 | .14* | | | | | | |
| Financial Hardship \times Bias | | | | | | | .02 | .03 | .05 | | | |
| IPV \times Bias | | | | | | | | | | -.01 | .05 | -.01 |
| Total R^2 | | | .266 | | | .285 | | | .269 | | | .266 |

Note. Education = parent education; income = indicator for total annual household income $> \$21,000$; IPV = intimate partner violence; bias = attentional bias toward threat.

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

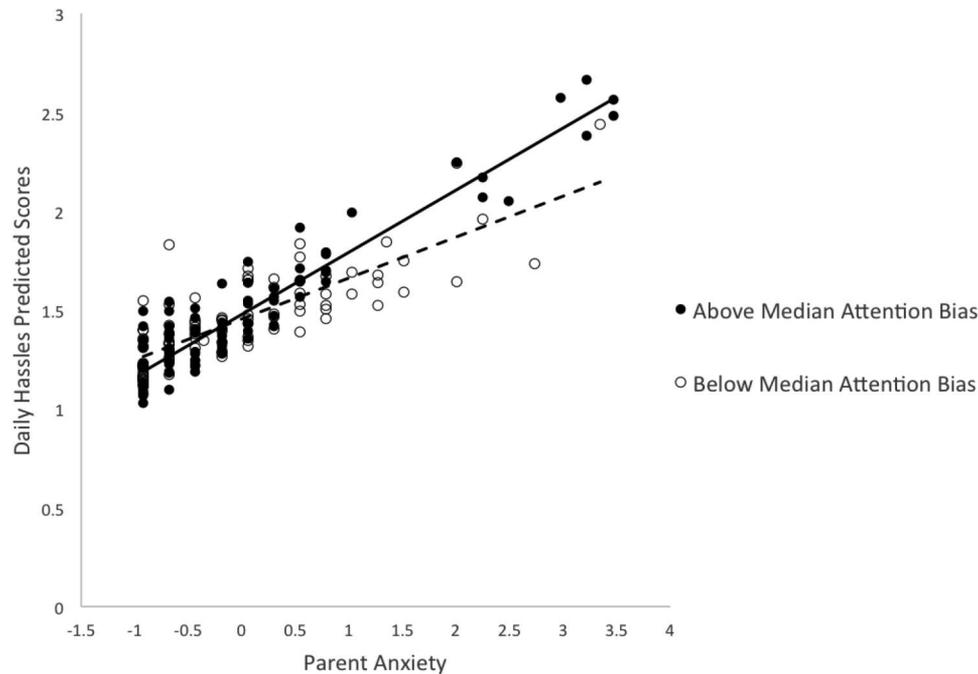


Figure 1. The association between parent-reported anxiety symptoms and parenting daily hassles is moderated by attentional bias toward threat. The solid line is the trend line between anxiety and hassles for those individuals above the median on attention bias toward threat (solid black circles). The dotted line is the trend line between anxiety and hassles for those individuals below the median on attention bias toward threat (white circles).

of adult information processing and emotion regulation and have implications for parenting prevention programs, as we discuss in the following sections.

Expanding Models of Parental Cognition to Include Interpersonal and Economic Contexts

The results of this study also point to ways that experiences of high levels of adversity both inside and outside the household likely play a significant contributing role in shaping or tuning adults' perceptions of their children, the tasks of parenting, and themselves as parents. Past research has clearly highlighted the importance of the relationship between parents and their adult romantic partners (e.g., Krishnakumar & Buehler, 2000). Experiences of acute forms of conflict and violence with one's partner (including hostility, denigration, and other forms of psychological and physical harm) have also recently been found to be significantly associated with adults' more biased attention to threatening stimuli, more negative cognitions, and maladaptive styles of coping (DePierro et al., 2013). Based on those recent findings, we expected that greater IPV exposure might not only be related to parents' more negative attention bias but that IPV and attention bias might work jointly as well as independently in predicting parents' perceptions of daily parenting hassles.

Our descriptive analyses suggest that reports of experiences of physical violence and psychological conflict were high among the low-income Latino/a parents in our sample, with 16.7% of parents reporting experiencing at least one type of physical violence and with over half of the sample reporting experiences of at least some

psychological conflict in their relationships with their spouses or romantic partners. Results of our analyses suggest that parents' reports of higher levels of interparental violence were predictive of more parenting hassles, even after statistically taking into account parents' levels of anxiety and attention bias; that is, parents who reported experiencing higher numbers of episodes involving physical harm or psychological conflict with their partners also reported feeling significantly more demoralized and frustrated with parenting.

Finally, we also considered the role of larger socioeconomic factors such as financial strain for parents' perceptions of hassles, drawing upon over two decades of research on what has been termed the family stress model of parenting in the contexts of poverty and income inequality (e.g., Conger & Donnellan, 2007). Our analyses suggest that Latino/a families experiencing higher levels of financial hardship reported higher levels of parenting hassles, even after statistically controlling for higher versus lower family income as well as the psychological and interpersonal factors discussed previously. This is in keeping with recent analyses that highlight the corrosive role that material hardship plays for maternal mental health, linking those stressful experiences to subsequent compromises in parenting behavior (Shelleby et al., 2014). In summary, this study contributes to a small but rapidly growing area of research on the ways that cognitive representations of parenting among low-income families in urban areas of concentrated disadvantage may be shaped by socioeconomic and interpersonal contexts as well as by parents' own psychological resources (see Kim et al., 2010). These findings help inform both

neurobiologically based and ecologically based models of early parenting for families facing high levels of adversity and illustrate the ways that those models can be integrated in applied developmental science.

Limitations and Future Directions

While this study makes several empirical contributions to our understanding of parenting among low-income families, the findings are constrained by several limitations. First, we were surprised to not be able to detect a statistical association between parents' attention bias and their experiences of IPV, given prior findings in the adult and child literatures. This may indicate that our measured indicators were less precise, particularly given our use of shortened measures of IPV and field-based assessments of attention bias using a laptop-administered dot-probe paradigm in families' homes. The implication of this imprecision in measurement is that our analyses yielded conservative estimates of the associations between parents' neurobiologically anchored resources, environmental exposures to adversity, and their perceptions of parenting hassles. We look forward to refining these methodological challenges in future field- and laboratory-based research with families facing a range of psychosocial stressors. While our supplementary analyses suggested that the findings were generally robust to different model specifications, we note the need to interpret findings from the current study with caution given the small effect sizes reported.

Second, this study's design was a cross-sectional one and does not allow us to make inferences regarding temporal precedence or causal mechanism. Prior research regarding adults' experiences of negatively valenced cognitions, their symptoms of anxiety, and their experiences of higher versus lower levels of adversity suggests that relations among individuals' negative thoughts, mental health difficulties, and vulnerabilities to experiences of victimization are bidirectional and transactional in nature. In extant research on maternal anxiety and depression, for example, negative cognitions are understood to be a main feature of clinically diagnosed mothers' psychiatric difficulty and may serve as antecedents or primes to biases in how adults deploy their attention (Holden et al., 2012). We look forward to future longitudinal research using observational and experimental designs (in our own laboratory as well as in others' laboratories) to address questions of temporal precedence and causal mediation.

Implications for Prevention and Policy

Our findings have several clear implications for prevention and policies that target the well-being of low-income families. For example, policy leaders have increased investment in a range of family support services targeting parenting as a key foundation for children's early brain development, as illustrated by the U.S. Senate's recent reauthorization of \$800 million for the Maternal, Infant and Early Childhood Home Visiting Program (Mongeau, 2015). Our findings suggest that those leaders and practitioners who are designing, implementing, and delivering programs would benefit from considering both parents' thoughts and beliefs about parenting from a multidetermined and neuroscientifically and clinically informed perspective. Given that just over one fifth of the low-income parents in our sample reported mild levels of anxiety

(and 8% of parents reported moderate to severe levels of anxiety), this domain of psychological vulnerability is an important domain for family-serving agencies to identify and address as those agencies strive to support positive parenting. This also suggests that benefits in domains of parenting may also be reaped when community initiatives such as NYC Thrive, a recent comprehensive public mental health effort targeting adult mental health, are implemented (City of New York, 2016).

Similarly, our findings suggest that policies and programs that promote low-income parents' safety and financial security are likely to offer substantial additional payoffs in terms of supporting their parenting beliefs and practices in the early years. Our findings highlight the corrosive nature of financial strain and IPV for the ways that young parents see themselves, their young children, and the challenges of caregiving. These and other findings from our colleagues serve as a clear call to embed parenting programs in a comprehensive policy safety net emphasizing reductions in both poverty and violence. Policies to support parents in poverty that are neurobiologically and ecologically informed may provide the most benefit to parents and children and may have wide-ranging positive impacts on family functioning, well-being, and physical and psychological health.

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