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Emotion Regulation and Parent Distress: Getting at the Heart of Sensitive Parenting among Parents of Preschool Children Experiencing High Sociodemographic Risk

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Abstract

Objectives: Sensitive parenting requires modulation of emotions in order to effectively organize and orient behavioral responses. There is considerable evidence that psychological distress can impair sensitive parenting practices, and also that psychological distress is associated with deficits in emotion regulation capacities. The negative effect that psychological distress has on parents' emotion regulation capacities may be a mechanistic pathway through which psychological distress impacts parenting, as dysregulated emotions may be more proximal to parenting behaviors than distress itself; however, this specific link between psychological distress, emotion regulation, and parenting is not often examined in parenting models.

Methods: The current study tested these relations in a high sociodemographic risk community-sample, oversampled for violence exposure, of caregivers of preschoolers. Caregivers self-reported on their psychological distress and emotion regulation difficulties. Parent sensitivity was assessed via observations of parent-child interactions.

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Author Contributions

JC: With the support of SG, designed and executed this study, these analyses, and wrote the paper. AC, AH, DF, and SG: collaborated with the design and writing of the overarching study and provided feedback on manuscript drafts.

Conflict of Interest

The authors declare that they have no conflict of interest to disclose.

Ethics Statement

All procedures performed in this study were in accordance with ethical standards and were approved by the University of Massachusetts – Boston Institutional Review Board. Informed consent was obtained from all participants in the study.

Results: Results indicated that difficulties in emotion regulation were a mediator for the relation between parents' psychological distress and sensitive parenting behaviors. Difficulties in emotion regulation predicted decreased sensitivity above and beyond the effect of psychological distress.

Conclusions: These findings emphasize the importance of regulation of emotional reactions in order to orient and engage in sensitive parenting behaviors. Additionally, they suggest clinically that supporting parents' emotion regulation capacities specifically may promote more sensitive parenting in contexts of parental psychological distress.

Keywords

Emotion regulation; parenting; sensitivity

There is considerable evidence for the importance of sensitive parenting practices for young children. Sensitive parenting describes parents' abilities to be aware of their children's emotional cues, interpret them accurately, and respond in a way that is temporally contingent and functionally appropriate (Ainsworth, 1969; Lamb & Easterbrooks, 1981). Additionally, sensitivity also reflects consistent parenting practices in which parents a) provide the opportunity for their children to experience autonomy, b) increase the child's odds of success during exploration through developmentally appropriate scaffolding, c) express affection and positive regard, d) show awareness of their children's needs and emotions, and e) promote child-centered, rather than adult-centered, interaction by following their children's foci of attention and interest (Leerkes, Crockenberg, & Burrous, 2004). Sensitive parenting has been linked to higher attainment of emotional, cognitive, and regulatory skills (Morris, Silk, Steinberg, Myers, & Robinson, 2007). These skills are especially salient for preschool-aged children as they make the developmental transition from external regulation by caregivers to increasing self-regulation, as well as the social transition into formal school settings. Considering the importance of sensitive and engaged parenting for young children across broad developmental domains, identifying determinants of parental sensitivity may allow for greater specificity of theoretical models and points of intervention.

While there are many such determinants of parenting, studies have shown that parents with low levels of psychological distress, (i.e. the number and severity of symptoms of psychopathology parents experience), appear better able to manage their parenting behaviors, whereas parents who are more distressed have been shown to demonstrate lower levels of sensitivity and responsivity (Berg-Nielsen, Vikan, & Dahl, 2002; Deater-Deckard, Li, & Bell, 2015; Teti & Towe-Goodman, 2008), which has been found to pose a significant risk to children's socioemotional development (Smith, 2004). Indeed, there is a considerable body of literature that has established associations between parents' symptoms of psychopathology and parenting behavior (Creswell, Apetroaia, Murray, & Cooper, 2013; Dix, Moed, & Anderson, 2014; Lovejoy, Graczyk, O'Hare, & Neuman, 2000; River, Borelli, & Nelson-Coffey, 2016). As such, parents' psychological distress may an important determinant of parenting.

Psychological distress may influence parenting behaviors by making it difficult to manage and regulate emotions. Gross and Thompson (2007) defined emotion regulation as the processes by which one intentionally or unintentionally modifies the intensity of an emotion

or the behavioral response to the emotion; in contrast, emotion dysregulation can be understood as difficulty modulating or suppressing an emotional or behavioral response or inappropriate suppression of an emotional response (Mennin, Heimberg, Turk, & Fresco, 2005). While there is not yet enough longitudinal research to speak definitively about the direction of the relation between psychological distress and emotion regulation (Compas et al., 2017), there is theoretical and empirical suggestion that emotion regulation may be more proximal to parenting behaviors than psychopathology. For example, Dix's (1991) affective organization model of parenting describes well-regulated emotions as a resource for parenting that: 1) organizes behavior, 2) shapes parental responses, 3) activates monitoring and attention, and 4) motivates parents to maintain their children's positive behavior and change their children's negative behavior. Alternatively, difficulties in regulating negative emotions associated with psychological distress may lead to more harsh, punitive parenting behavior (Deater-Deckard et al., 2015; Maughan, Cicchetti, Toth, & Rogosch, 2007). Thus, it may be that parents who suffer from psychological distress are at a disadvantage in their ability to organize and coordinate their own parenting style associated with their difficulty regulating their affect.

While there is considerable empirical support for the theory that positive and negative emotions impact parenting behavior (Dix, Moed, & Anderson, 2014; Dix & Yan, 2014; Rueger, Katz, Risser, & Lovejoy, 2011), extant examinations of emotion regulation and parenting behavior are still mostly theoretical (Jones, Cassidy, & Shaver, 2015). Some work using infant cry paradigms has documented these associations with simulated babies; for example, observing associations between mothers' report of their ability to regulate their own distress and their persistence in soothing a simulated crying baby is thought to reflect more sensitive parenting (Rutherford, Booth, Luyten, Bridgett, & Mayes, 2015). Additionally, the cognitive-affective ability to be clear about, reflect on, and understand emotions has also been found to be predictive of sensitive parenting behavior (Fonagy, 2005; Kelly, Slade, & Grienenberger, 2005) and be impaired by parents' own psychological distress (Slade, 2005). For example, the research on reflective functioning in parenting, or the ability to think about the mental states of oneself and one's child, which is thought to serve a regulatory function, has demonstrated that reflective functioning has implications for positive behavior during parent-child interactions (Fonagy & Target, 2002). Furthermore, self-focused reflective functioning, which is closely linked to emotion regulation strategies, has been found to be associated with parents' sensitive and contingent parenting behaviors (Suchman, DeCoste, Leigh, & Borelli, 2010). Consistent with this evidence, the current study proposes that emotion regulation is a key process by which parents are able to manage their emotional responses in order to organize and orient their sensitive parenting behaviors, particularly in contexts of high psychological distress.

Although emotion regulation, psychological distress, and parenting behaviors have been theoretically linked and are conceptually related, process-focused research examining all three constructs together is limited. One exception is a study by Kim, Teti, and Cole (2012), which examined parents' emotion dysregulation and depressive symptoms as predictors of behavioral emotional availability, akin to sensitive parenting behavior, in a sample of non-clinical parents of infants. In their study, Kim, Teti, and Cole (2012) found a significant positive relation between depressive symptoms and affect dysregulation, as well as an

inverse relation between affect dysregulation and behavioral emotional availability, but they did not find a significant relation between depressive symptoms and emotional availability. These findings suggest that emotion regulation processes may be more proximally related to parenting behaviors than psychological distress, as conceptualized by the current study.

Although understanding the mechanisms by which psychological distress affects parenting is important for all families, these mechanisms are critically important among families that are at higher risk for psychosocial problems due to sociodemographic factors, including poverty, single parent status, and racial minority status, as these families encounter disproportionate exposure to stressors that challenge parenting (Conger et al., 2002; McLoyd, 1998). Individuals from low-income contexts, an indicator of greater sociodemographic risk, may be as much as 2.6 times more likely to develop a psychological disorder than their higher-income counterparts (Wadsworth & Achenbach, 2005). Poverty can also diminish the capacity for consistent and available parenting (McLoyd, 1990), and is specifically related to behavioral parental sensitivity (Raviv, Kessenich, & Morrison, 2004). Additionally, while the research on emotion regulation in parenting behavior is sparse in general, it is especially lacking for low-income parents and children (Crandall, Deater-Deckard, & Riley, 2015). For these reasons, the current study explores these relations in a sample of low-income parents of preschool-aged children.

The goal of this study is to examine the co-contribution of parents' psychological distress and difficulties in emotion regulation on observed parental sensitive behavior in a low income, high sociodemographic risk sample, oversampled for exposure to violence. We hypothesized that higher psychological distress would predict higher difficulties in emotion regulation, and that both higher psychological distress and higher difficulties in emotion regulation would predict less sensitive parenting behavior. Additionally, we hypothesized that there would be an indirect effect of difficulties in emotion regulation in the association between psychological distress and sensitive and engaged parenting behavior.

Methods

Participants

The overall sample was comprised of 64 primary caregivers of preschool children between the ages of 3 and 5 ($M = 3.83$, $SD = .77$; 53% female). Most (92%) were biological mothers; the sample was additionally comprised of two fathers, one foster mother, one grandmother, and one great-grandmother (age range: 18 - 74). Nine participants were excluded due to missing data, resulting in a final analytic sample size of 55 dyads. Caregiver-child dyads were recruited from Women Infants and Children (WIC) clinics and Head Start programs, and thus had family incomes near or below the federal poverty level. Caregivers reported on their own English language proficiency on a Likert scale (1-5), with higher ratings indicating more proficiency, and the mean rating was 4.74. Only one caregiver rated her English proficiency as a 2, and only three caregivers rated their English proficiency as a 3. Participants that stated that they were not proficient in English in the screener were not invited to participate in the study. Participating caregivers were racially and linguistically diverse (50% Black, 17.2% White, 17.2% Latino/a, 10.9% multiracial; 36% bilingual). The

modal level of education was some college (13% attained a college degree), and the sample was mostly single-caregiver (61%) and mostly unemployed (53%).

Procedure

Caregivers and children in this study were part of a larger study that examined the impact of violence exposure on child outcomes (see *blinded for review*). Caregivers completed a screening study at WIC and Head Start programs about sociodemographic and violence exposure information for themselves and their children. Caregivers who reported child violence exposure on the Life Events Checklist (Gray, 2004), as well as caregivers who did not report violence exposure but were matched to the violence exposure group on child age and sex and caregiver bilingual status and education were invited to participate in the larger study with their preschool-aged child. Both violence-exposed dyads and their non-exposed matches were included together for analyses. Graduate students in clinical and counseling psychology administered in-home visits. Participants then completed two, two-hour data collection visits, either at the participants' homes or in the lab per parent preference. Participants received \$50 gift cards upon the completion of each visit. Mothers and children completed a dyadic parent-child interaction task, which consisted of a free play task and a puzzle task. For the free play task, graduate-level research assistants gave the dyad toys and instructed them to play as they normally would. For the puzzle task, the dyad was given several geometric puzzle pieces and a picture and was instructed to make the pieces look like the picture, and the mother could help with her words but not her hands. Subsequently, one of the graduate-level research assistants completed structured interviews with mothers to assess life events, and a second graduate-level research assistant completed behavioral and cognitive tasks with the child. Additionally, mothers completed several self-report and parent-report measures. The procedures were approved by the (*blinded for review*) Institutional Review Board.

Measures

Sociodemographic information.—At WIC and Head Start programs, caregivers reported on their own and their children's race, ethnicity, age, marital status, education, English proficiency, and bilingual status. Violence exposure information was also collected using a 20-item Life Events Checklist (Gray, 2004); caregivers and children were categorized as violence-exposed if they endorsed having experienced or witnessed one of 9 violence-related life events, such as witnessing community violence or assault.

Caregiver psychological distress.—Caregivers' psychological distress was assessed using the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983), a 53-item abbreviated version of the Symptom Checklist (SCL-90-R). Caregivers rated each item on a 5-point Likert scale (0-4). The BSI yields a Global Severity Index, which is a measure of both the number of symptoms and severity and is a mean of all item responses ($\alpha = .97$) in this sample. In this study, internal consistency for the nine dimensions rated on the BSI ranged from .71 to .85.

Caregiver emotion regulation.—The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) was used to assess caregivers' emotion regulation difficulties.

Caregivers complete the 36-item scale by rating items on a 5-point Likert scale (1-5). The DERS includes six subscales that represent dimensions of emotion regulation difficulties: nonacceptance of emotion responses, difficulty engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. The measure results in a total score as well as a score for each subscale. In the initial validation study, construct and predictive validity were both good (Gratz & Roemer, 2004). The internal consistency in this study was good for the total scale ($\alpha = .91$) and for all six factors ($\alpha > .80$).

Sensitive parenting.—Sensitive parenting was measured using the Parent-Child Interaction Rating Scales (PCIRS; Sosinsky, Carter, & Marakovitz, 2004). The PCIRS is a reliable and valid measure of parenting sensitivity (Heberle, Briggs-Gowan, & Carter, 2014) and is consistent with and adapted from The NICHD Study of Early Child Care Parent-Child Interaction Rating Scales (NICHD Early Child Care Research Network, 1999), the Caregiver-Child Affect, Responsiveness, and Engagement Scales (Tamis-LeMonda et al., 2002), the Parent-Child Early Relational Assessment (Clark, 1999), and the Emotional Availability scales (Biringen, Robinson, & Emde, 1994). The dyad engaged in videotaped, six-minute free-play exercise, in which the caregiver and child were given toys to play with as they choose, and a four-minute book exercise, in which the caregiver was given a wordless book to read with their child. Tapes for both tasks were rated on a 7-point scale for 23 items by a trained graduate student; scores were then averaged across tasks (free play and book reading). The sensitivity score, derived from scales drawn from existing validated measures, comes from the sensitive engagement sum scale, which is comprised of 8 items (sensitivity, supportive presence, intrusiveness reverse-coded), promotion of autonomy, positive regard, negative regard (reverse-coded), affective mutuality, and mutual enjoyment), derived from Wachtel and Carter's (2008) factor analysis. Consistent with other observational measures of sensitivity, examples of sensitivity include: acknowledging the child's affect, appropriate attention focusing, picking up the child's interest in toys or games, shared positive affect, encouragement of child's efforts, and attending to the child. In our sample, Cronbach's alpha for the 8 items comprising the sensitivity score was .90. A random sample of 20% of tapes were double coded by a second graduate student trained coder for interrater reliability, which was excellent for the sensitive engagement sum scale (ICC = .88). In the initial development study, predictive validity for the PCIRS was measured by comparing positive parenting behaviors and parental detachment to child dysregulation and social competence measured longitudinally by the Infant Toddler Social Emotional Assessment. In a validation study, coders had 90% agreement and weighted kappas of .61, and other studies have also demonstrated strong metrics (Jones Harden, Denmark, Holmes, & Duchene, 2014).

Data Analyses

Variables of interest were examined for missing data. Two dyads were excluded from sensitive parenting analyses due to missing data on the free play task related to an error in video recording. Mean substitution within subject was used for missing data on the PCIRS, BSI, and DERS (all <20% missing). Seven dyads were missing data on sociodemographic control variables and excluded from analyses, leaving a final sample size of 55. Given that

not all caregivers were mothers, analyses were also run in a sample restricted to mothers; patterns were parallel with non-maternal caregivers excluded, so we report on the full analytic sample. Bootstrapping analyses were conducted, which do not assume normality (Hayes, 2009). Preliminary analyses for multicollinearity revealed that the assumption was not violated for the variables of interest.

Correlations are presented in Spearman's rho (ρ) as all correlations involved at least one variable that was not normally distributed. Sociodemographic variables that significantly correlated with any outcome variables were entered as covariates. Among sociodemographic variables examined. Hayes' PROCESS macro with bootstrapping (Hayes, 2013) was used to test the following hypotheses: caregiver psychological distress would predict difficulties in emotion regulation; difficulties in emotion regulation would negatively predict parenting sensitivity above and beyond the effects of psychological distress; and difficulties in emotion regulation would be a pathway for the relation between caregiver psychological distress and observed sensitivity (indirect effect). Hayes' PROCESS macro model 4 provides output for each of these hypotheses as a result of a single bootstrapping analysis for indirect effects based on 5000 bootstrap samples for bias-corrected bootstrap confidence intervals. Specifically, the PROCESS output first tested a regression analysis with psychological distress and covariates as predictors of difficulties in emotion regulation. Next, it provided a regression analysis with psychological distress, difficulties in emotion regulation, and covariates as predictors of sensitive parenting. Finally, it provided output of the indirect effect analysis.

Results

Descriptive statistics and bivariate correlations for the study variables of interest are presented in Table 1. Among measured sociodemographic variables, only caregiver education, child bilingual status, and caregiver English proficiency were associated with key study variables. Despite the large age range among caregivers, caregiver age was not associated with any of the key study variables, nor were child age, gender, or race. Caregiver exposure to violence was associated with parents' psychological distress ($\rho = 0.42$) and sensitive parenting ($\rho = -0.35$). As such, caregiver education, child bilingual status, and caregiver English proficiency, as well as caregiver exposure to violence, were included as covariates in the following analyses.

The model with difficulties in emotion regulation as an outcome and with covariates and psychological distress as predictors explained approximately 54% of the variance in difficulties in emotion regulation, $R^2 = 0.54$, $F(4, 50) = 11.41$, $p < .001$. As expected, psychological distress was significantly associated with difficulties in emotion regulation, $b = 0.70$, $SE = 0.11$, $t = 6.52$, $p < .001$, $CI [0.48, 0.92]$. The covariates child bilingual status, $b = 0.34$, $p = .015$, and caregiver English proficiency, $b = -0.17$, $p = .034$, were also significant. The change in R^2 from the model involving only the covariates and the model containing the covariates and psychological distress was $R^2 = 0.29$.

The next model included psychological distress and difficulties in emotion regulation as well as covariates as predictors and parenting sensitivity. This model explained approximately

33% of the variance in sensitive parenting, $R^2 = 0.33$, $F(5, 49) = 3.87$, $p = .003$. In line with expectations, difficulties in emotion regulation was significantly negatively associated with sensitive parenting above and beyond the effect of psychological distress, $b = -0.68$, $SE = 0.32$, $t = -2.16$, $p = .036$, $CI [-1.32, -0.05]$. Contrary to expectations, psychological distress was no longer associated with observed sensitive parenting once difficulties in emotion regulation was controlled for, $b = 0.11$, $SE = 0.26$, $t = 0.42$, $p = .677$, $CI [-0.41, 0.63]$. The covariates caregiver education, $b = 0.44$, $p = .005$, and caregiver exposure to violence, $b = -0.75$, $p = .023$, were also significant. The change in R^2 from the model involving only the covariates and the model containing the covariates, difficulties in emotion regulation, and psychological distress was $R^2 = 0.06$.

The direct effect, or the effect when including emotion regulation as a mediator, of psychological distress on sensitive engagement was not significant, $b = 0.59$, $SE = 0.33$, $t = 1.76$, $p = .085$, $CI [-0.08, 1.26]$. As expected, there was a significant indirect effect of psychological distress on sensitive parenting through difficulties in emotion regulation, $b = -0.48$, $SE = 0.24$, $CI [-1.06, -0.09]$ (see Figure 1). These results indicate a pattern of correlations consistent with the mediational hypothesis that the effect of psychological distress on parenting sensitivity is mediated by difficulties in emotion regulation.

Discussion

Results of this study highlight the importance of emotion regulation for sensitive parenting behavior. Consistent with Dix's (1991) theory that emotion – and, by extension, emotion regulation – is a central process by which external factors influence parenting behavior, the hypothesis that emotion regulation may be a pathway for the relation between psychological distress and sensitive parenting was supported. Our data suggest that psychological distress may impact a caregiver's ability to modulate and control their emotions in an appropriate way, thereby affecting how well they are able to read their child's cues, respond in a temporally contingent way, show warmth and support, and foster exploration. Additionally, consistent with previous work (Kim, Teti, and Cole, 2012), we also found that emotion regulation was more strongly related to sensitive parenting than was caregiver psychological distress.

Consistent with process models that emphasize parents' psychological state and the centrality of emotions for organizing parenting (Belsky, 1984; Dix et al., 2014; Dix & Yan, 2014), the current study demonstrates a pattern of associations suggesting that emotion regulation may be one pathway for the relation between psychological distress and parenting behavior, highlighting that emotion regulation lies at the "heart" of parenting (Dix, 1991, p. 19). After parents experience psychological distress and an emotional reaction to that distress, it may be their ability to regulate those emotional reactions that determines whether they will be able to organize, orient, and engage in sensitive parenting. These findings are also consistent with Eisenberg's (1998) work on parental socialization of emotions and Gottman's (1996) work on emotion coaching parenting behaviors, and by extension Morris et al. (2007). They suggest that children likely learn to regulate themselves through observing their parents' attempts at regulating, (i.e., through parental modeling) as well as through sensitive behaviors. Furthermore, they propose that both of these processes are

dependent on the parent's own self-regulatory abilities. If parents are unable to regulate themselves appropriately, they may struggle to respond to their children's own distress in a functional way and model maladaptive regulatory strategies. As such, parents' emotion regulation precedes their ability to organize and orient their sensitive parenting behaviors in the service of aiding in the development of their child's emotion regulation.

Contrary to expectations, while we found that emotion regulation predicted sensitive parenting when including psychological distress in the model, we did not observe a relation between psychological distress and sensitive parenting, which has been well established in the literature (Biringen, 2000; Goodman & Gotlib, 1999; Johnson et al., 2006; Kiel et al., 2011; Teti & Towe-Goodman, 2008). These patterns of results are consistent with the only other known study to investigate psychological distress, emotion regulation, and sensitive parenting together. In a non-clinical sample of infants and their mothers, Kim, Teti, and Cole (2012) also found that difficulties in emotion regulation predicted less sensitive parenting but did not find a significant relation between psychological distress and sensitive parenting. Low levels of psychological distress, and limited variability in distress, may explain why neither study found a significant relation between psychological distress and parenting. Indeed our sample had lower mean levels of distress ($M = 1.40$) and smaller standard deviation ($SD = 0.44$) than clinical and non-clinical samples, which typically had one and a half to two times larger means and standard deviations (Katz et al., 2018; McCleary-Gaddy & Miller, 2018; Rudenstine, Espinosa, McGee, & Routhier, 2018), despite the high-risk nature of this sample. Additionally, it is also possible that both studies were underpowered to detect this effect, as our sample was small and effect sizes were comparable to what has been observed in other studies (Pereira et al., 2012). Regardless, the parallel results of the current study and the Kim, Teti, and Cole study suggest that emotion regulation is more proximally related to parenting outcomes than is psychological distress. These findings are consistent with Dix's (1991) theory that external, distressing events affect parents' emotions, but it is how parents then regulate those emotions that determine how they engage in parenting behaviors.

An interesting additional finding was that child bilingual status and English proficiency was correlated with emotion regulation in our sample. Parents' ability to speak English could be related their emotion regulation in several ways. For instance, difficulty speaking English could be representative of greater difficulties transitioning to a new culture and community, or it could be representative of cultural differences in emotion regulation. Relatedly, if the child is bilingual, there is an increased likelihood that the parent speaks another language, and thus may have difficulty with English, as evidenced by the negative association between child bilingual status and caregiver English proficiency in our sample. Additionally, research has shown that immigrant parents may undergo acculturation stress as their children become more acculturated (Torres, 2010), and this may relate to the association between child bilingual status and emotion dysregulation in our sample.

Limitations and Future Directions

Limitations of the current study include that the study was cross-sectional and correlational; therefore, we cannot draw conclusions about causal pathways linking psychological distress,

emotion regulation, and parenting. Additionally, some statisticians suggest that mediation should not be assessed in cross-sectional studies as true mediation requires causation (Maxwell, Cole, & Mitchell, 2011), however there is still value in testing indirect relations to advance theory development. Another potential limitation of the study is that there were only 55 participant dyads; however, while this sample was small, it was sufficiently large enough to detect expected effects between emotion dysregulation and parenting. Furthermore, although high in sociodemographic risk, this was a non-clinical sample with low ratings of psychological distress ($M = 1.40$ on a 5-point rating scale); exploring these patterns in clinical samples may have increased clinical utility. Additionally, all families in the sample were low-income and half had been exposed to violence, and thus it is not representative of the general population, although documenting these pathways in a diverse, low-income, and high-risk sample represents a distinct contribution. Furthermore, the majority of the research has been conducted with predominantly White, middle-class samples; emotion regulation has been shown to differ across cultures in terms of both process (Matsumoto, Yoo, & Nakagawa, 2008; Potthoff et al., 2016) and consequences and attitudes toward regulating emotions (Qu & Telzer, 2017; Butler, Lee, & Gross, 2007). As the current sample is ethnically diverse, it is possible that ethnicity moderates some of the relations tested in this study, however the sample size was not large enough to test for these potential moderators. Finally, we used a self-report measure of difficulties in emotion regulation, which may be limiting as it relies on conscious awareness of emotional response (Gratz, 2004).

Future research may benefit from testing a longitudinal, mediational model of the relation between psychological distress, emotion regulation, and parenting in different populations, particularly clinically at-risk populations. Given the considerable evidence that sensitive parenting has implications for children's cognitive (Lugo-Gil & Tamis-LeMonda, 2014; van IZjendoorn et al., 2007), self-regulatory (Eisenberg et al., 2008; Feldman, Eidelman, & Rotenberg, 2004; Karreman, van Tuijl, van Aken, & Dekovi, 2006), and social-emotional outcomes (Berg-Nielsen et al., 2002; Rapee, 1997; Sheridan, Knoche, Edwards, Bovaird, & Kupzyk, 2010), future research should also include child outcomes.

An additional avenue for future research is to expand into cognitive as well as affective processes that may organize parents' sensitive behaviors. Literature regarding parents' ability to take their child's perspective and understand their emotions suggests that these processes are intertwined and work together to determine parenting behaviors (Illingworth, MacLean, & Wiggs, 2016; Meins et al., 2003; Ordway, Sadler, Dixon, & Slade, 2014; Walker, Brighton, Wheatcroft, & Camic, 2012). For example, Katz, Maliken, and Stettler (2012) theorized that parents' ability to be aware of, validate, and problem solve their children's emotions is dependent on them first being able to understand and accept their own emotional responses. Given the literature on reflective functioning and mentalization (Koren-Karie, Oppenheim, & Sher-Censor, 2002; Suchman et al., 2010), and considering our finding that parents' ability to be clear about their own emotions is related to sensitive parenting, future research may benefit from examining the link between parent emotion regulation and their ability to attribute thoughts and motivations to their children's behaviors, and how these affective and cognitive processes may co-contribute to sensitive

parenting behavior (Gershy & Gray, 2018). Critically, these are processes that may be amenable to intervention.

A final consideration for future research is that our measure of emotion regulation is a global self-report of difficulties in emotion regulation. However, emotion regulation can vary situationally (Gentzler, Santucci, Kovacs, & Fox, 2009); for instance, one's ability to regulate their emotions during a time of stress is likely to be different than during a calm period. Indeed, it has been shown in the literature that effects on parenting are more likely to be seen during periods of high distress (Booth, Macdonald, & Youssef, 2018). Physiological and dynamic measures of emotion regulation may yield more information about the moment-to-moment regulation of emotions and how they relate to parenting behaviors (Butler, Wilhelm, & Gross, 2006; Porges, 1995). Alternatively, a strength of this study was that parenting behaviors were measured observationally, which has been shown to be preferable to self-report in samples of high distress and low socio-economic status (Herbers, Garcia, & Obradovic, 2017). However, these observations took place during low-stress interactions, and as such, it is a limitation that we did not measure high-stress interactions as well. Relatedly, future research would benefit from assessing the effects of difficulties regulating emotions related to the parenting role specifically, as opposed to general emotion dysregulation.

Our finding that emotion regulation may be a process by which psychological distress impairs parenting sensitivity suggests that targeting emotion regulation in parenting interventions could support sensitive parenting behavior among high sociodemographic risk families. Additionally, as emotion regulation has been conceptualized as a transdiagnostic process (Fernandez, Jazaieri, & Gross, 2016), targeting emotion regulation may be beneficial for parents experiencing a wide range of psychological distress. Certainly, research should continue to investigate emotion regulation as a causal mechanism for change, or the reason an intervention produces a psychological change (Campbell-Sills, Barlow, Brown, & Hofmann, 2006). For instance, Sheppes, Suri, and Gross (2015) noted that while many researchers agree that emotion regulation should be a mechanism of change for treating psychopathology, there is generally uncertainty in the field as to how to target emotion regulation. Continuing to specify processes and pathways is key to building targeted and effective support for high risk parents and their young children.

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Appendix

Table 1

Correlations between study variables and covariates

	1.	2.	3.	4.	5.	6.	Mean (SD)
1. Psychological distress (n = 64)							1.40 (0.44)

	1.	2.	3.	4.	5.	6.	Mean (SD)
2. Emotion dysregulation (n = 64)	.41 ^{**}						1.73 (0.49)
3. Sensitive parenting (n = 62)	-.14	-.27 [*]					4.68 (0.88)
4. Caregiver education (n = 60)	-.34 ^{**}	-.13	.39 ^{**}				1.62 (0.80)
5. Child bilingual (n = 64)	-.18	.33 ^{**}	.00	.22			0.18 (0.38)
6. Caregiver English proficiency (n = 61)	-.03	-.29 [*]	-.03	-.06	-.35 ^{**}		4.74 (0.88)
7. Caregiver exposure to violence (n = 64)	.42 ^{**}	.03	-.35 ^{**}	-.25	-.23	.27 [*]	83% exposed

Note. Correlations are presented in Spearman's rho.

* $p < .05$,

** $p < .01$,

*** $p < .001$.

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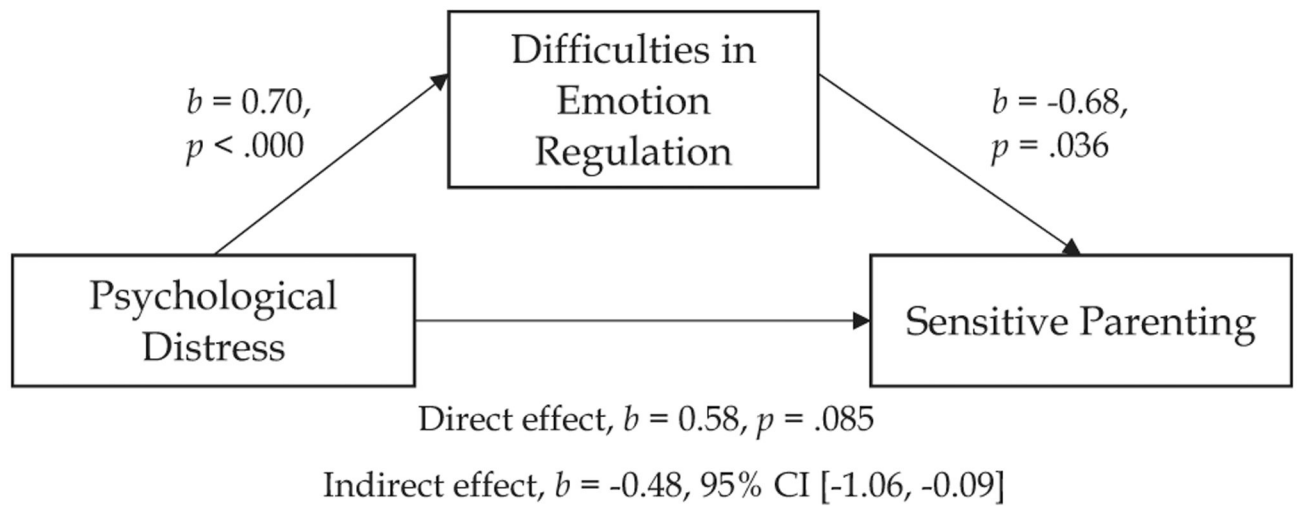


Figure 1. Difficulties in emotion regulation mediate the relation between psychological distress and sensitive parenting. *Note: Caregiver education, child bilingual status, caregiver English proficiency, and caregiver exposure to violence were included as covariates.*