



Family Stress Processes Underlying Material Hardship and Parental Detachment and Warmth Amongst Racially Diverse Fathers and Mothers with Low Income

Joyce Y. Lee¹ · Shawna J. Lee² · Susan Yoon^{1,3} · Jaclyn Kirsch⁴ · Garrett T. Pace⁵ · Sarah J. Schoppe-Sullivan⁶

Accepted: 23 May 2023

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2023

Abstract

Purpose The Family Stress Model was applied to examine the associations between material hardship, parental depressive symptoms, destructive interparental conflict, and parental emotional availability. This study contributes novel information to the literature by including data from both mothers and fathers from racially diverse and socioeconomically disadvantaged contexts, using multimethod data (observational and survey), and examining fathers' residential status as a moderator.

Method Participants ($n = 858$) were racially and ethnically diverse families with preschoolers and low income from the Building Strong Families project. Mothers primarily reported on material hardship, and both mothers and fathers reported on their depressive symptoms, destructive interparental conflict, and warmth. The two-bags task was employed to assess both parents' detachment. Structural equation modeling was used to examine the links between material hardship and parental warmth and detachment, with depressive symptoms and destructive conflict as mediators.

Results Material hardship was linked with higher maternal and paternal depressive symptoms, which were each, respectively, associated with mothers' and fathers' destructive conflict. Subsequently, maternal destructive interparental conflict was linked with higher, but paternal destructive interparental conflict linked with lower, maternal detachment. For both parents, depressive symptoms were linked with lower warmth. Fathers' resident status did not moderate examined family processes.

Conclusions Fathers and mothers with low income share similar and different pathways by which material hardship impacts their emotional availability toward their preschoolers. Importantly, the findings point to targeting parental depressive symptoms and maternal destructive interparental conflict to facilitate positive parenting in diverse families.

Keywords Family Stress Model · Warmth · Detachment · Building Strong Families · Two-bags task

Introduction

Approximately 7.3 million families (or 9% of all families) in the United States live in poverty (U.S. Census Bureau, 2020). Families with younger children tend to experience higher rates of poverty compared to families with older children—18% of families with any children under the age of 5 live in poverty compared to 12% of families with children who are all between the ages of 5 and 17 (U.S. Census Bureau, 2020). A large body of research has documented the negative effects of poverty on family material hardship and on functioning (e.g., parental mental health, interparental relationship quality, parenting behaviors; Brooks-Gunn & Duncan 1997; Heflin & Iceland, 2009; Zhang et al., 2022; Lee et al., (2023)). Theoretical frameworks, such as the Family Stress Model (FSM; Conger et al., 1994), have

✉ Joyce Y. Lee
lee.10148@osu.edu

¹ College of Social Work, The Ohio State University, 1947 North College Road, Columbus, OH 43210, USA

² School of Social Work, University of Michigan, Ann Arbor, MI, USA

³ Department of Social Welfare, College of Social Sciences, Ewha Womans University, Seoul, South Korea

⁴ School of Social Work, University of Texas, Arlington, TX, Arlington, USA

⁵ School of Social Work, University of Nevada, NV, Las Vegas, USA

⁶ Department of Psychology, The Ohio State University, OH, Columbus, USA

articulated the processes by which material hardship stemming from economic hardship (e.g., low income, unstable employment) may lead to poor parenting by mothers and fathers. That said, few FSM studies have used data from both parents, especially mothers and fathers from racially diverse and socioeconomically disadvantaged contexts. Further, a large focus of FSM research has been on disruptive parenting (e.g., harsh discipline, punitive or overcontrolling behaviors, heightened risk of child abuse and neglect; Emmen et al., 2013; Masarik & Conger 2017; Neppl et al., 2016; Newland et al., 2013; Shelleby et al., 2022; Warren & Font, 2015), despite research suggesting the importance of parent-child emotional connection for child development (Pinquart, 2017).

Little is known about the pathways by which material hardship leads to both mothers' and fathers' detachment and lack of warmth in their interactions with their young children, especially from a dyadic perspective. This topic is important because fathers' and mothers' parental detachment and lack of warmth could lead to more serious forms of poor parenting (e.g., family violence in the form of child abuse and neglect; Sturge-Apple et al., 2012). Furthermore, there is a need to inform prevention efforts that support parents and children from low-income contexts. The current study applied the FSM to a racially diverse sample of mothers and fathers with low income to examine mechanisms underlying the links between material hardship and maternal and paternal detachment and warmth with their preschoolers. The current study contributes to the literature by focusing on parent-child emotional availability dimensions of parenting in testing the FSM; using multimethod data (i.e., parent self-reports, parent-child observations) collected from both mothers and fathers from racially diverse and socioeconomically disadvantaged contexts; jointly modeling mothers' and fathers' data to understand dyadic effects on their own, as well as each other's parenting behaviors; and examining moderation by fathers' resident status in the family.

Importance of Parent-Child Emotional Availability: Parental Detachment and Warmth

Parent-child emotional availability refers to the capacity of the dyad to have an emotionally healthy relationship (Clark et al., 2021), and includes parental behaviors that make up different dimensions of parent-child emotional attachment, understanding, and accessibility (Bornstein et al., 2008; Clark et al., 2021). Parental warmth and detachment are particularly important dimensions of parent-child emotional availability. Parental warmth is defined as parents expressing love and affection toward their children (Rohner, 2004). It is often displayed through parenting behaviors such as comfort, nurturance, and support for children. Parental detachment is defined as being disengaged or unaware of children's needs

for appropriate interactions. For example, if a child makes bids for interactions, the parent misses those bids or is slow to respond (NICHD Early Child Care Research Network, 1999). In other words, the parent appears mentally and emotionally "checked out."

Both parental detachment and lack of parental warmth have been linked with more serious forms of poor parenting and increased risk for family violence, including child abuse and neglect (Lee et al., 2018; Pinquart 2017). Furthermore, they have implications for early childhood development (Clark et al., 2021). For example, parental detachment has been associated with higher levels of stress as captured in hair cortisol concentrations in samples of preschoolers from socioeconomically disadvantaged backgrounds (NICHD Early Child Care Research Network, 1999; Senehi et al., 2021). On the other hand, parental warmth, for both mothers and fathers, is positively linked with children's mental health and behavioral and psychological adjustment (Pinquart, 2017).

Importantly, disruptive parenting has been the major focus of prior FSM studies (Emmen et al., 2013; Masarik & Conger 2017; Neppl et al., 2016; Newland et al., 2013; Shelleby et al., 2022; Warren & Font, 2015). As such, other aspects of parenting such as those tapping into parent-child emotional availability, including parental detachment and warmth, have not been as readily tested as part of the FSM, especially with mother-father samples that are racially diverse and from socioeconomically disadvantaged contexts. Family stress processes may not only result in elevated levels of disruptive parenting, but also may compromise parents' abilities to engage with their children in positive ways that help them build strong emotional connections with them. Therefore, it is imperative to investigate the processes underlying material hardship and parental detachment and warmth, to inform policy and program intervention efforts to support healthy parent-child emotional relationships across early childhood.

Theoretical Framework: the Family Stress Model

The FSM served as the theoretical framework guiding the current study. The FSM was originally developed in the 1980s to understand the economic impact of the Great Farm Crisis on families in rural Iowa (Conger et al., 1990, 1999, 2002; Masarik & Conger, 2017). The FSM proposes that economic pressure, also known as material hardship, stemming from economic hardship (e.g., income loss, unstable work) contributes to higher levels of maternal and paternal depressive symptoms, and depressive symptoms are associated with poorer relationship quality between mothers and fathers in the form of higher levels of interparental conflict. Elevated interparental conflict subsequently contributes to less optimal parenting that ultimately contributes to

children's maladjustment (Conger et al., 1990; Masarik & Conger, 2017). Material hardship is also understood to have a direct effect on interparental conflict, with material hardship being linked with higher levels of interparental conflict. Furthermore, maternal and paternal depressive symptoms exert direct effects on parenting, with both parents' depressive symptoms being associated with higher levels of poor parenting behaviors (e.g., hostile, inconsistent, uninvolved). Initial FSM studies primarily involved White farming families and found that material hardship was indeed linked to children's maladjustment through parental psychological functioning, relationship quality, and parenting behaviors (Conger et al., 2000, 1990, 1994, 1999, 2002).

The FSM argues for the inclusion of data from both mothers and fathers in testing proposed relations (Conger et al., 1990, 1999, 2002; Masarik & Conger, 2017). What this means for the current study is that we explicitly model dyadic pathways in which (1) the effects of the other parent are accounted for; and (2) mothers' and fathers' earlier constructs (e.g., depressive symptoms at 15 months) that affect their own and each other's constructs downstream (e.g., interparental conflict, detachment, and warmth at 36 months) are examined. Our approach allows for testing dyadic effects between mothers and fathers in the same family as informed by the FSM. Overall, the FSM predicts spillover, with material hardship linked with higher levels of maternal and paternal depressive symptoms, which are expected to spill over into not only their respective but also each other's destructive interparental conflict behaviors. Subsequently, mothers' and fathers' destructive interparental conflict behaviors are proposed to spill over into again not only their respective but also each other's positive and negative parenting behaviors. Alongside the spillover mechanism, other patterns of family relations, especially between interparental conflict and parenting behaviors, have been identified. This includes a compensatory pattern in which parents who experience high levels of interparental conflict respond with an increase in investment in the parent-child relationship to meet unmet needs of love and support in the interparental relationship (Erel & Burman, 1995; Kouros et al., 2014).

Prior Family Stress Model Studies with Racially and Ethnically Diverse Families

Since its inception, the FSM has been tested and replicated across multiple samples, including racially and ethnically diverse families from socioeconomically disadvantaged backgrounds. Specifically, the FSM has been applied to examining mechanisms underlying material hardship and children's outcomes among Black and Latinx families in urban contexts (Conger et al., 2002; Curran et al., 2021; Gard et al., 2020; Masarik & Conger, 2017; Parke et al., 2004; Simons et al., 2016; White et al., 2015; Zhang et al.,

2022, 2020). For example, using a sample of two-parent Black families, Conger et al. (2002) showed that findings generally replicated earlier FSM studies with two-parent White families. Specifically, material hardship was linked with greater mental health problems for Black parents, which then were linked with greater interparental relationship problems. Subsequently, interparental relationship problems were linked with more disruptive parenting practices, which then predicted lower positive child adjustments and higher internalizing and externalizing child behavior problems (Conger et al., 2002). Research with Hispanic and Latino families, including Mexican origin and Mexican American families, has shown similar trends and thus general support for the FSM. Such research has also found that cultural components such as maternal acculturation and maternal familism values have been found to be protective (e.g., linked with less harsh parenting or buffer the negative effects of material hardship on maternal warmth; Parke et al., 2004; White et al., 2015).

Supporting these results, Gard et al. (2020) and Zhang et al. (2022) more recently used a racially diverse sample from the Fragile Families and Child Wellbeing Study (FFCWS) and found overall support for the FSM in their main longitudinal model (i.e., family income at birth predicted less material hardship when child was a year old, which was then associated with higher maternal distress by child age three years, which subsequently was linked with less maternal warmth and more harsh mothering by child age five years). Importantly, in their race and ethnicity moderation analyses, Gard et al. (2020) found no significant differences in the core FSM pathways amongst White, Black, and Hispanic or Latinx families, suggesting additional evidence that family stress processes work similar across racial and cultural backgrounds (Masarik & Conger, 2017). Importantly, although the FSM notes that it is important to include both mothers' and fathers' mental health and parenting in elucidating family stress mechanisms, most studies have relied on mothers' data only (Gard et al., 2020; Newland et al., 2013; Shelleby 2018; Shelleby et al., 2022; Zhang et al., 2022). Few studies have used self-reported data from mothers *and* fathers—especially those from racially diverse and socioeconomically disadvantaged contexts—to test the FSM's proposed dyadic effects on each parent's parenting behaviors (for exceptions, see Zhang et al., 2020; Parke et al., 2004; Curran et al., 2021). Relatedly, very few studies of such mothers and fathers exist that also have observed measures of parenting (especially fathering) behaviors to use alongside self-reported measures.

In recent years, a number of studies testing the FSM with data from the Building Strong Families (BSF) project, which the current study also used and is made up of a racially and ethnically diverse group of mothers and fathers with preschoolers from low-income contexts, have emerged (Barnett

et al., 2021; Curran et al., 2021; Lee et al., 2021, 2022). All four studies thus far have found general support for the FSM using the BSF data. For example, material hardship at when the child is approximately 15 months has been linked with both BSF mothers' and fathers' depressive symptoms when the child is approximately 36 months. (Lee et al., 2022). Furthermore, BSF fathers' and mothers' depressive symptoms at 15 months have been linked with their own and their partners' destructive interparental conflict at 36 months (Curran et al., 2021; Lee et al., 2022). There are number of limitations of this evidence base, including only using parents' self-reports without relying on the multimethod data collection approach of the BSF project (Curran et al., 2021; Lee et al., 2022); omitting to test mediating pathways between FSM proposed variables (Curran et al., 2021; Lee et al., 2022); not including parenting variables as outcomes including detachment and warmth despite research documenting their importance for early childhood development (Barnett et al., 2021; Curran et al., 2021; Lee et al., 2022); and being unable to jointly test mothers' and fathers' dyadic effects on their own and each other's parenting outcomes given statistical modeling limitations (Lee et al., 2022).

The current study is different from prior studies testing the FSM using racially and diverse samples, including the BSF data, in the following ways and makes important additions to the literature: (1) leverage BSF's multimethod data collection approach and thus using both parents' self-reported and observational data; (2) conduct mediation analysis using FSM proposed variables for testing the theory; (3) focus on parents with preschool-aged children and include detachment and warmth as key parenting outcomes as informed by prior work documenting the salience of parent-child emotional availability in healthy early childhood development; and (4) jointly model mothers' and fathers' data to understand dyadic effects on their own and each parent's parental detachment and warmth.

Associations Between Material Hardship, Parental Depressive Symptoms, Destructive Interparental Conflict, and Mothers' and Fathers' Detachment and Warmth

The current study focuses on material hardship, also called "economic pressure" in the original FSM (Masarik & Conger, 2017; Ouellette et al., 2004; Zhang et al., 2022), which is a consumption-based poverty measure complementary to household income and often referred to as families' everyday material challenges related to making ends meet or purchasing needed goods in the domains of food, utilities, housing, and healthcare. Prior research has shown that family material hardship is associated with higher levels of maternal mental health problems (Gard et al., 2020; Gershoff et al., 2007; Shelleby, 2018). Amongst relevant BSF studies, Curran et al. (2021) found no associations between material hardship and

mothers' and fathers' depressive symptoms (either cross-sectionally at 15 months or longitudinally between 15 and 36 months). However, Lee et al., in both of their prior BSF studies (2021, 2023) showed that material hardship was linked with higher levels of both maternal and paternal depressive symptoms when the children were approximately 15 months old, suggesting material hardship's negative effects on mothers' and fathers' mental health are likely to be concurrent than longitudinal.

Concerning the links between parental depressive symptoms and destructive interparental conflict, prior BSF studies have shown that fathers' depressive symptoms, but not mothers' depressive symptoms, at 15 months are linked with higher levels of destructive interparental conflict at 36 months as reported by both parents (Curran et al., 2021; Lee et al., 2022). Other BSF studies have found the opposite trend in which mothers' depressive symptoms, but not fathers' depressive symptoms, were cross-sectionally linked with higher levels of destructive interparental conflict at 15 months (Lee et al., 2021, 2022). Such mixed findings across BSF studies point to the need for additional research in this area.

With regards to the direct links between parental depressive symptoms and detachment and warmth, one BSF study using fathers' data only showed that fathers' depressive symptoms were linked with lower levels of paternal warmth and this amongst fathers in the BSF control group only (Roopnarine & Dede Yildirim, 2018). No comparable BSF study was conducted with mothers or, even better yet, with both mothers and fathers. Thus, we turn to the broader parenting literature, especially with parents from low-income backgrounds, which suggests the detrimental role of maternal depressive symptoms in parent-child relationships (i.e., maternal withdrawal, disengagement, lack of positive reactions during parent-child interactions; Gard et al., 2020; Guyon-Harris et al., 2022; Trussell et al., 2018). For example, using data from the FFCWS, Gard et al. (2020) showed that maternal depressive symptoms (along with parenting stress) were linked with lower levels of maternal warmth. Research also suggests paternal depressive symptoms can be detrimental to fathers' parenting behaviors (Wilson & Durbin, 2010). For example, in their meta-analysis, Wilson and Durbin (2010) noted that paternal depressive symptoms had a small, but significant, and negative effect on fathers' parenting (e.g., withdrawal, less involvement).

Specific to the links between destructive interparental conflict and parental detachment and warmth, no BSF studies have been conducted to the best of our knowledge. Therefore, we turn our attention to research with other families of low income (Carlson & McLanahan, 2010; Coley & Hernandez, 2006; Sturge-Apple et al., 2012; Taylor et al., 2012). For example, mothers' reports of interparental violence (i.e., physical assault) have been linked with higher levels

of mothers' disengagement and lower affective warmth as captured in free play/compliance mother-toddler interaction tasks (Sturge-Apple et al., 2012). Another study of two-parent Mexican-origin families from low-income contexts showed that negative interparental conflict (e.g., hostility between mothers and fathers) was linked with lower levels of nurturant-involved parenting (including warmth, monitoring, and inductive reasoning captured using self-reports) by both mothers and fathers towards their school-age children (Taylor et al., 2012). Research with the BSF data would leverage BSF's multimethod data collection (e.g., self-reports, observations) to test whether similar links are found in racially diverse families raising preschoolers.

Resident Versus Non-Resident Father Families

Non-resident fathers are defined as fathers who do not live with their children all or most of the time (Fagan et al., 2016). Studies suggest that most non-resident fathers take on a fathering role with their children and participate in caregiving and supervision of their children (Jones & Mosher, 2013; Lee et al., 2020). Even so, non-resident fathers spend less time with their children and engage in fewer child caregiving activities than do resident fathers. A national study showed that 90% of residential fathers of children under age 5 bathed, diapered, or dressed their child several times a week or more, compared to 31% of nonresidential fathers (Jones & Mosher, 2013). Because non-resident fathers spend less time with their children, they may have fewer opportunities to engage in warm parenting behaviors (Lee et al., 2018). Non-resident fathers experience higher levels of depression than do resident fathers (Carlson & McLanahan, 2010; Lee et al., 2018), and relationships between non-resident fathers and their children's mothers may be more conflictual than those for resident father families (Carlson & McLanahan, 2010; Coley & Hernandez, 2006). For these reasons, we examined fathers' residential status as a moderator to determine whether the pathways linking material hardship to parenting warmth and detachment differed for those in non-resident versus resident father families.

The Current Study

The current study aimed to apply the FSM to investigate family stress processes underlying the links between material hardship and paternal and maternal detachment and warmth in a sample of families from low-income contexts. Based on the FSM and prior research in this area we drew key hypotheses. Specifically, we first hypothesized that material hardship would be associated with higher levels of both paternal and maternal depressive symptoms (H1). We then hypothesized that maternal and paternal depressive symptoms would be associated with higher levels of mothers' and

fathers' destructive interparental conflict, respectively, with parental depressive symptoms serving as mediators between material hardship and destructive interparental conflict (H2). We also hypothesized that maternal and paternal depressive symptoms would be associated with higher levels of parental detachment and lower levels of parental warmth for both parents, with parental depressive symptoms serving as mediators between material hardship and parental detachment and warmth (H3). Finally, we hypothesized that mothers' and fathers' destructive interparental conflict would be associated with higher levels of parental detachment and lower levels of parental warmth for both mothers and fathers, with mothers' and fathers' destructive interparental conflict serving as mediators between parental depressive symptoms and parental detachment and warmth (H4). As part of our exploratory analysis, we conducted moderation by fathers' resident status in the family.

Methods

The Building Strong Families Project

Data were from the BSF project, which was a large-scale evaluation of a healthy marriage and relationship strengthening program implemented with families with low income between 2002 and 2013 across eight locations in the United States. The BSF project focused on serving families in which mother-father couples were romantically involved and were expecting or recently had a baby together (Wood et al., 2010). The U.S. Department of Health and Human Services funded, and Mathematica Policy Research (MPR) implemented the BSF project. The primary goal of the BSF project was to strengthen couples' relationships, and therefore, create healthy home environments for their children (Wood et al., 2010). Data and related materials are available at the Inter-university Consortium for Political and Social Research (www.icpsr.umich.edu).

Procedures

MPR recruited 5,102 couples for the BSF project from hospitals, prenatal clinics, and special nutritional programs for Women, Infants, and Children. Couples were eligible to enroll in the BSF project if: (a) both the mother and father agreed to participate in the program; (b) the couple was romantically involved; (c) the couple was either expecting a baby together or recently had a baby younger than three months old; (d) the couple was unmarried at the time their baby was conceived; and (e) both the mother and father were 18 years and older (Wood et al.,

2010). MPR obtained written consent from mothers and fathers, and couples were subsequently randomly assigned to either a BSF intervention group ($n = 2,553$) or control group ($n = 2,549$). Couples in the BSF intervention group received 30–42 hrs of relationship skills (e.g., conflict resolution, affection and trust, consideration of marriage) education in the form of group sessions. Couples in the control group could seek out relationship skills education from other sources but did not receive BSF intervention services. MPR collected data at three time points: (1) Baseline when couples enrolled in the BSF project; (2) 15 months after enrollment (15-month follow-up); and (3) 36 months after enrollment (36-month follow-up). At the 15- and 36-month follow ups, data were collected via telephone surveys. Moreover, at the 36-month follow-up, direct observations of mother-child and father-child interactions on a subsample of BSF families took place. The Institutional Review Board at the The Ohio State University approved the current study as secondary analysis of the BSF data.

Participants

The analytic sample of $n = 858$ focused on BSF couples who reported on parental warmth at the 36-month follow-up and took part in the 36-month direct observations of parent-child interactions across five out of the eight BSF program sites (e.g., Atlanta, Baton Rouge, Houston, Indiana counties, Oklahoma City). To create the analytic sample, from the full and larger BSF sample ($N = 5,102$), we first dropped 18 couples in which a BSF partner died. Furthermore, we dropped 1,673 couples whose observed parental detachment data were not available because of non-participation in direct observations at 36 months. Next, we dropped 2,928 couples without parental warmth data at the 36-month follow-up. Finally, we dropped 297 couples from Atlanta because mothers at this BSF site were not asked whether intimate partner violence (IPV) was perpetrated by the BSF father (as described below, IPV was entered as a control variable in the main model). Compared to those in the excluded sample, analytic sample parents were older ($p < .05$), fathers were more likely to work ($p < .001$), couples were less likely to be non-Hispanic/Latinx Black ($p < .001$), more likely to be Hispanic/Latinx ($p = .003$), less likely to have no high school education ($p = .008$), more likely to be married at follow-ups ($p < .001$), and more likely to be resident father families across follow-ups ($p < .001$). Concerning key study variables, compared to those in the excluded sample, analytic sample fathers reported lower levels of paternal depressive symptoms ($p < .001$) and destructive interparental conflict ($p < .006$), as well as higher levels of paternal warmth ($p = .003$). No other significant differences were found.

Measures

Material Hardship

Material hardship was measured at the 15-month follow-up survey with four dichotomous (0 = *No*, 1 = *Yes*) indicators: (1) *Ability to pay rent* which reflected families' hardship paying rent or mortgage in the past year (i.e., "You could not pay the full amount of the rent or mortgage"); (2) *Consistency of utilities* which reflected families' hardship related to utilities in the past year (i.e., "You had services turned off by the water, gas, or electric company or the oil company would not deliver oil in the past 12 months because you could not afford to pay the bills"); (3) *Residential stability* which reflected families' hardship related to eviction or foreclosure (i.e., "You were evicted from your home or apartment because you could not pay the rent or mortgage?"); and (4) *Medical care* which reflected families' hardship related to health insurance (i.e., "Are you currently covered by Medicaid or any other government program that pays for medical care?" and "Are you currently covered by health insurance through your or someone else's employer or insurance purchased directly from a private insurance company?"). The medical care indicators were reverse coded to ensure consistency with the other material hardship indicators and were combined to create a single medical hardship measure. A value of 1 indicated any medical hardship and 0 no medical hardship. Food insecurity, another important aspect of material hardship (Ouellette et al., 2004), was not available in the BSF data. Mothers' reports of material hardship were primarily used to create a variable indicating families' material hardship although where data from mothers were missing, fathers' reports were used. A total material hardship score was created by summing all four binary indicators, with the final material hardship composite ranging from 1 to 4. Approximately, 66% reported experiencing one type of hardship, 31% two hardships, 0.24% three hardships, and 2% four hardships.

Parental Depressive Symptoms

Depressive symptoms were measured at the 15-month follow-up survey, using a 12-item version of the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) to assess the prevalence of depressive symptoms (e.g., felt depressed, experienced sleep problems, and had difficulty concentrating) in the past week. Mothers and fathers rated CES-D items on a 4-point scale, ranging from 1 = *Rarely or none of the time (less than 1 day in the past week)* to 4 = *Most or all of the time (5–7 days in the past week)*. Higher scores reflected higher levels of parental depressive symptoms. We created composite variables for both mothers ($\alpha = 0.86$) and fathers ($\alpha = 0.82$) by summing the 12 items for each parent.

Destructive Interparental Conflict

Destructive interparental conflict was measured at the 36-month follow-up survey. As described by Cummings and Davies (2010), destructive interparental conflict captured moderate verbal aggression mothers and fathers use that could be harmful to their partner in the relationship. The measure had nine items (e.g., “Partner blames me for things that go wrong,” “Partner puts down my opinions, feelings, or desires”). Both mothers and fathers rated destructive interparental conflict items on a 4-point scale from 1 = *Often* to 4 = *Never*. The scale was reverse coded so higher scores reflected more frequent use of destructive interparental conflict behaviors. We created composite variables for both mothers ($\alpha = 0.91$) and fathers ($\alpha = 0.88$) by summing the nine items for each parent.

Parental Detachment

Parental detachment was measured at the 36-month follow-up via direct observation of mother-child and father-child interactions during the semi-structured, free-play two-bags task. The two-bags task is a modification of the three-bags tasks used in the National Institute of Child Health and Human Development Study of Early Child Care (NICHD Early Child Care Research Network, 1999). Other large-scale studies, such as the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B; Roisman & Fraley, 2008) and Early Head Start Research and Evaluation Study (EHSREP; Nord et al., 2004), have employed the three-bags task. Within the BSF project, the two-bags task involved a 10-minute parent-child interaction that was video recorded. Mothers and fathers were instructed to play with objects in bags in order (e.g., play with object in Bag 1 and then move onto Bag 2). Mother-child interactions were conducted first and then father-child interactions were conducted. Eighteen trained coders from MPR used the video recordings to rate six parenting behaviors (i.e., sensitivity, cognitive stimulation, positive regard, negative regard, intrusiveness, and detachment), using a 7-point scale that ranged from 1 = *Not at all characteristic* to 7 = *Very characteristic*. Detachment was coded as a parent’s emotional disengagement with the child (e.g., being consistently inattentive, interacting with child in an indifferent manner) during the two-bags task (Andreassen et al., 2007).

Parental Warmth

Parental warmth was measured at the 36-month follow-up survey, using three items as described by Zaslow et al. (1998) and developed by Child Trends to address limitations related to observational measures of parental warmth such as a brief period of observation. Specifically, mothers and

fathers were asked how often (1 = *Often* to 4 = *Never*) in the past month: “Child and you had warm close times together,” “You felt that child liked and wanted to be near you,” and “When you were in a bad mood, you still showed child love.” Similar items have been used in the Early Childhood Longitudinal Study-Birth Cohort and the Panel Study of Income Dynamics (Lee et al., 2018). The scale was reverse coded so higher scores reflected higher levels of parental warmth. We created composite variables for both mothers ($\alpha = 0.40$) and fathers ($\alpha = 0.54$) by summing the three items per parent. We recognize up front the low internal reliability of the warmth measure as a limitation. That said, the alphas are consistent with those reported in prior research using the BSF data (Lee et al., 2018). Because no other measure comparable to parental warmth was available in the BSF data, we partially address this limitation of the warmth measure by complementing it with an observed measure of detachment from the two-bags task.

Sociodemographic Control Variables

Sociodemographic control variables were included in all the main models. These variables were selected through examining the literature (Curran et al., 2021; Lee et al., 2018, 2020, 2022), as well as conducting correlation analyses. Specifically, statistically significant correlations between main study variables and sociodemographic control variables were retained and included in the final models. As shown in Supplemental Material 1, significant correlations were present between main study variables and the following sociodemographic control variables: mothers’ age, fathers’ age, mothers’ employment status (no or yes), couples’ race and ethnicity dummies (no or yes) (non-Hispanic/Latinx Black, non-Hispanic/Latinx White, Hispanic/Latinx, and Other which included interracial couples; non-Hispanic/Latinx Black served as the reference group), couples’ education status dummies (no or yes) (neither parent has a high school diploma, one parent has a high school diploma, and both parents have a high school diploma with neither parent has a high school diploma serving as the reference group), couples’ relationship length in years, number of biological children mothers had with BSF fathers, BSF randomization group status as either control ($n = 421$) or intervention ($n = 437$), couple’s marital status at 15 months (no or yes), fathers’ residential status with BSF mothers and children at 15 months (no or yes), fathers’ and mothers’ parenting stress at 15 months as measured by the Aggravation in Parenting Scale (Ehrle & Moore, 1997), couples’ marital status at 36 months (no or yes), fathers’ residential status with BSF mothers and children and 36 months (no or yes), fathers’ reports of any IPV by BSF mothers at 36 months (no or yes), mothers’ reports of any IPV by BSF fathers at 36 months (no or yes), fathers’ engagement in cognitive and social play

at 36 months, mothers' engagement in cognitive and social play at 36 months. Although fathers' employment status (no or yes) and child sex (girl or boy) were not significantly correlated with any of the main study variables, we included them as controls in all models to be consistent with prior BSF studies examining family processes involving interparental relationship quality and/or parenting behaviors (Curran et al., 2021; Lee et al., 2020, 2021).

Data Analysis

All data management and preliminary data analyses were conducted in Stata Version 17. This included calculating descriptive statistics and conducting bivariate analyses (i.e., correlations and chi-square analyses). Structural Equation Modeling (SEM) was conducted using the lavaan package (Rosseel, 2012) in R Version 4.12.2. SEM model fit was assessed using a number of fit indices (Kline, 2016). These included the Root Mean Square Error Approximation (RMSEA; Steiger, 1990; <0.06 for good fit); 90% confidence intervals (CIs) of RMSEA (<0.05 for lower bound for good fit; Kenny 2015); Comparative Fit Index (CFI; Bentler, 1990; >0.95 for good fit); and Standardized Root Mean Square Residuals (SRMR; Hu & Bentler, 1999; <0.05 for good fit). We report chi-square test of significance but did not rely upon its results to assess model fit, given the test is sensitive to sample size (Kline, 2016).

We tested indirect effects by examining bootstrapped CIs of the indirect effects, which involved drawing 1,000 bootstrap samples (Dearing & Hamilton, 2006). Bootstrapping is currently one of the most rigorous methods to test indirect effects (Shrout & Bolger, 2002). Based on Shrout and Bolger (2002), we determined a statistically significant indirect effect to be one in which its bootstrapped 95% confidence interval (CI) did not contain a zero. Fathers' resident status with the BSF mothers and children was examined as a moderator since prior research documents that family processes involving interparental relationships and fathers' parenting can differ across families in which fathers are residential versus nonresidential with mothers and their children (Fagan & Palkovitz, 2011). Specifically, fathers' residential status with the BSF mothers and children across both 15 and 36 months, which were the time points from which main study variables were collected, was used as a grouping variable in our models. As part of multiple group analysis, we first conducted an omnibus test in which a constrained model, with all regression paths constrained to be equal across non-resident and resident father family groups, was compared against an unconstrained model, with all regression paths allowed to freely vary across the two groups. If the omnibus test is statistically significant, researchers may elect to test the moderation of individual pathways, guided by theoretical considerations in terms of selecting which pathways to

test for moderation (Kline, 2016). Testing the full model and then individual pathways for moderation is considered a robust approach in SEM (Kline, 2016). For comparing the constrained and unconstrained models, a chi-square difference test was used. A non-significant chi-square test result suggests that there are no significant differences in family processes between resident and non-resident father families and that an unconstrained model works equally well as a constrained model.

Missing Data

Data were $<1\%$ missing for most of the main study and sociodemographic control variables. The exceptions were couples' relationship length (1.52% missing), child sex (5.01% missing), and fathers' parenting stress at 15 months (11.54% missing). We used full information maximum likelihood (FIML) to account for missing data. FIML estimates parameters by maximizing the sample and thus using all data available (Kline, 2016).

Results

Descriptive Statistics

Descriptive statistics of main variables and sample characteristics are provided in Table 1. Mothers and fathers were generally young, with mothers' mean age being 23.36 years and fathers' mean age 25.78 years. Approximately 40% of the couples identified as non-Hispanic/Latinx Black (37.91%), followed by non-Hispanic/Latinx White (26.88%), Hispanic or Latinx (23.47%), and Other (11.74%). Half of the sample involved couples in which neither or only one partner had a high school diploma. Couples' mean annual household income was approximately \$30,670, suggesting that our sample of mothers and fathers were from socioeconomically disadvantaged contexts (for details, see Table 1). All pairwise correlations between main study variables are shown in Supplemental Material 1.

Mediation Analysis Results

SEM results are shown in Fig. 1. The SEM model successfully converged, and the model had good fit to the data, $\chi^2(44) = 89.71$, $p < .001$, RMSEA = 0.04, 90% CI [0.03, 0.05], CFI = 0.96, SRMR = 0.01. Specifically, material hardship was significantly linked with higher levels of both maternal depressive symptoms ($\beta = 0.12$, $B = 0.10$, 95% CI [0.04, 0.16], $p = .001$) and paternal depressive symptoms ($\beta = 0.07$, $B = 0.05$, 95% CI [0.004, 0.10], $p = .039$). Subsequently, maternal depressive symptoms were

Table 1 Sample characteristics
(*N* = 858)

Variable	<i>M</i> (<i>SD</i>) or %
Mothers' age (range: 18–41)	23.36 (4.72)
Fathers' age (range: 18–61)	25.78 (6.34)
Couple relationship length (in years) (range: 0.06–23)	3.23 (3.08)
Couple race and ethnicity	
Non-Hispanic/Latinx Black	37.91%
Non-Hispanic/Latinx White	26.88%
Hispanic/Latinx	23.47%
Other	11.74%
Couple education	
Both parents with high school diploma	49.94%
One parent with high school diploma	35.32%
Neither parent with high school diploma	14.74%
Employment status (yes)	
Mother	29.25%
Father	81.12%
Couple marital status (yes)	
At 15 months	24.71%
At 36 months	34.73%
Monthly household income at 15 months (range: \$100-\$5,000)	\$2,555.82 (1467.99)
Child sex (male)	49.94%
Mothers' reports of number of biological children with BSF fathers (range: 1–5)	1.35 (0.68)
Fathers' resident status with BSF mothers and children (yes)	
At 15 months	68.65%
At 36 months	70.28%
Parenting stress at 15 months	
Mother (range: 1–4)	1.56 (0.50)
Father (range: 1–4)	1.52 (0.51)
Mothers' reports of any IPV from BSF fathers at 36 months (yes)	15.27%
Fathers' reports of any IPV from BSF mother at 36 months (yes)	16.55%
Engagement in cognitive and social play with child at 36 months	
Mother (range: 0.75–5)	3.94 (0.81)
Father (range: 0–5)	3.48 (0.92)
BSF randomization group (intervention)	50.93%
Material hardship at 15 months (range: 1–4)	1.37 (0.59)
Parental depressive symptoms at 15 months	
Mother (range: 1–4)	1.41 (0.51)
Father (range: 1–3.67)	1.31 (0.40)
Destructive interparental conflict at 36 months	
Mother (range: 1–4)	2.26 (0.80)
Father (range: 1–4)	2.23 (0.74)
Parental detachment at 36 months	
Mother (range: 1–7)	2.48 (1.07)
Father (range: 1–7)	2.48 (1.08)
Parental warmth at 36 months	
Mother (range: 2–4)	3.92 (0.22)
Father (range: 1.67–4)	3.88 (0.29)

Otherwise indicated, all variables are from baseline when couples enrolled in the BSF project. BSF = Building Strong Families. IPV = Intimate Partner Violence

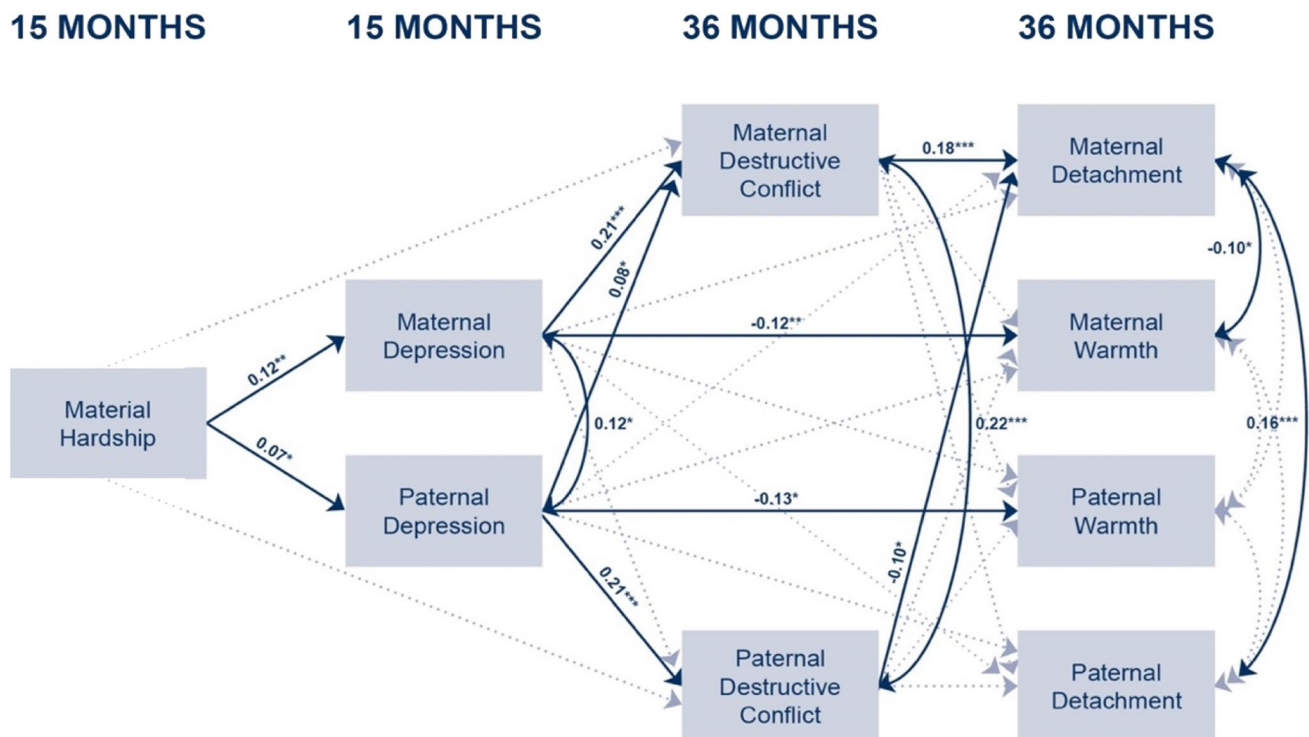


Fig. 1 Results of the structural equation model. $\chi^2(44)=89.71$, $p < .001$, RMSEA=0.04, 90% CI[0.03, 0.05], CFI=0.96, SRMR=0.01. Of all the sociodemographic control variables, which are not shown in the Figure, mothers' age ($\beta = -0.10$, $p = .018$) and number of biological children ($\beta = 0.08$, $p = .040$) were significantly associated with families' material hardship at 15 months. Being Latinx/Hispanic ($\beta = -0.17$, $p < .001$), mothers' parenting stress at 15 months ($\beta = 0.31$, $p < .001$), and fathers being residential at 15 months ($\beta = -0.15$, $p = .001$) were significantly associated with maternal depressive symptoms at 15 months. Being Latinx/Hispanic ($\beta = -0.17$, $p < .001$), mothers' employment ($\beta = -0.07$, $p = .024$), fathers' parenting stress at 15 months ($\beta = 0.33$, $p < .001$), and fathers being residential at 15 months ($\beta = -0.12$, $p = .012$) were significantly associated with paternal depressive symptoms at 15 months. Being White ($\beta = 0.12$, $p = .004$), one parent having a high school diploma ($\beta = 0.13$, $p = .009$), both parents having high school diplomas ($\beta = 0.17$, $p = .001$), couples being married at 36 months ($\beta = -0.12$, $p = .013$), fathers being residential at 36 months ($\beta = -0.15$, $p < .001$), mothers' engagement in cognitive and social play at 36 months ($\beta = -0.11$, $p < .001$), mothers' reports of any IPV by BSF fathers at 36 months ($\beta = 0.34$, $p < .001$), and fathers' reports of any IPV by BSF mothers at 36 months ($\beta = 0.10$, $p = .005$) were significantly associated with mothers' destructive interparental conflict at 36 months. Mothers' employment ($\beta = 0.10$, $p = .004$), fathers being residential at 36

significantly linked with higher levels of mothers' reported destructive interparental conflict ($\beta = 0.21$, $B = 0.33$, 95% CI [0.21, 0.44], $p < .001$). Similarly, paternal depressive symptoms were linked with significantly higher levels of fathers' reported destructive interparental conflict ($\beta = 0.21$, $B = 0.37$, 95% CI [0.24, 0.51], $p < .001$). Paternal depressive symptoms were also significantly linked with higher levels of mothers' reported destructive interparental conflict ($\beta = 0.08$, $B = 0.17$, 95% CI [0.04, 0.30], $p = .022$). However,

months ($\beta = -0.19$, $p < .001$), fathers' engagement in cognitive and social play at 36 months ($\beta = -0.17$, $p < .001$), mothers' reports of any IPV by BSF fathers at 36 months ($\beta = 0.15$, $p < .001$), and fathers' reports of any IPV by BSF mothers at 36 months ($\beta = 0.26$, $p < .001$) were significantly associated with fathers' destructive interparental conflict at 36 months. Being Latinx/Hispanic ($\beta = -0.21$, $p < .001$), one parent having a high school diploma ($\beta = -0.21$, $p < .001$), both parents having high school diplomas ($\beta = -0.24$, $p < .001$), number of biological children ($\beta = 0.12$, $p = .009$), and being assigned to the BSF intervention group ($\beta = -0.08$, $p = .034$) were significantly associated with mothers' detachment at 36 months. Being Latinx/Hispanic ($\beta = -0.15$, $p = .001$), one parent having a high school diploma ($\beta = -0.17$, $p = .004$), both parents having high school diplomas ($\beta = -0.23$, $p < .001$), and fathers' engagement in cognitive and social play at 36 months ($\beta = -0.16$, $p < .001$) were significantly associated with mothers' warmth at 36 months. Being Latinx/Hispanic ($\beta = -0.11$, $p = .030$) and fathers' engagement in cognitive and social play at 36 months ($\beta = 0.25$, $p < .001$) were significantly associated with fathers' warmth at 36 months. Standardized regression coefficients are shown. Dotted lines indicate non-significant paths. * $p < .05$, ** $p < .01$, *** $p < .001$

maternal depressive symptoms were not significantly linked with fathers' reported destructive interparental conflict ($\beta = -0.02$, $B = -0.13$, 95% CI [-0.13, 0.07], $p = .552$).

Maternal destructive interparental conflict was significantly linked with higher levels of maternal detachment ($\beta = 0.18$, $B = 0.25$, 95% CI [0.14, 0.40], $p < .001$) but not maternal warmth ($\beta = -0.02$, $B = -0.01$, 95% CI [-0.04, 0.02], $p = .670$). Maternal depressive symptoms were significantly linked with lower levels of maternal warmth ($\beta =$

-0.12, $B = -0.05$, 95% CI [-0.09, -0.02], $p = .007$). Paternal destructive interparental conflict was not significantly linked with either paternal detachment ($\beta = -0.03$, $B = -0.05$, 95% CI [-0.17, 0.10], $p = .499$) or paternal warmth ($\beta = 0.03$, $B = 0.01$, 95% CI [-0.02, 0.05], $p = .457$), but was significantly linked with lower levels of maternal detachment ($\beta = -0.10$, $B = -0.15$, 95% CI [-0.29, -0.04], $p = .023$). Paternal depressive symptoms were significantly linked with lower levels of paternal warmth ($\beta = -0.13$, $B = -0.09$, 95% CI [-0.17, -0.02], $p = .017$).

Concerning sociodemographic control variables, a number of variables including maternal age, couples' race and ethnicity, couples' education, fathers' parenting stress, mothers' and fathers' engagement in cognitive and social play, and IPV were significantly linked with study variables in the SEM model. Importantly, mothers' and fathers' reports of any IPV by BSF partners were linked with higher levels of both maternal and paternal destructive interparental conflict. Figure 1 provides additional details, including a list and description of all significant control variables.

Test of Indirect Effects

Bootstrapping suggested there were significant indirect effects for (1) maternal depressive symptoms as a mediator between material hardship and mothers' reported destructive interparental conflict (indirect effect = 0.03, 95% CI [0.01, 0.06]); (2) paternal depressive symptoms as a mediator between material hardship and fathers' reported destructive interparental conflict (indirect effect = 0.02, 95% CI [0.002, 0.04]); (3) paternal depressive symptoms as a mediator between material hardship and mothers' reported destructive interparental conflict (indirect effect = 0.01, 95% CI [0.001, 0.03]); (4) mothers' reported destructive interparental conflict as a mediator between maternal depressive symptoms and maternal detachment (indirect effect = 0.04, 95% CI [0.04, 0.15]); (5) fathers' reported destructive interparental conflict as a mediator between paternal depressive symptoms and maternal detachment (indirect effect = -0.02, 95% CI [-0.12, -0.02]); (6) maternal depressive symptoms as a mediator between material hardship and maternal warmth (indirect effect = -0.02, 95% CI [-0.01, -0.002]); and (7) paternal depressive symptoms as a mediator between material hardship and paternal warmth (indirect effect = -0.01, 95% CI [-0.02, -0.001]).

Moderation Analysis Results

We additionally examined fathers' resident status as a moderator. We first examined mean differences in parental detachment and warmth across resident and non-resident father families. ANOVA results did not show significant differences between mothers' and fathers' parental detachment or warmth across resident and non-resident father

families. We still chose to proceed with examining fathers' resident status as a potential moderator, given prior research documenting that family processes involving mothers' and fathers' parenting may differ depending on fathers' resident status with mothers and their children (e.g., Fagan & Palkovitz 2011). The results of the chi-square difference test comparing the constrained model (all regression paths constrained across non-resident and resident father family groups to be equal) to the unconstrained model (all regression paths allowed to freely vary across the two groups) showed that the two models were not significantly different from each other, $\Delta\chi^2(176) = 178.13$, $p = .441$, suggesting no moderation by fathers' resident status.

Discussion

The current study applied the FSM to investigate family stress processes underlying material hardship and parent-child emotional availability (i.e., warmth, detachment) in a racially and ethnically diverse sample of families from low-income contexts. Parental depressive symptoms and destructive interparental conflict were examined as mediators. Informed by the FSM and prior research, we drew four hypotheses—some of which were supported, and others only partially supported. All indirect effect sizes of key mediators were generally very small.

Our first hypothesis (H1) that material hardship would be associated with higher levels of both paternal and maternal depressive symptoms was supported. Our findings related to this hypothesis are consistent with those of prior literature, showing that material hardship negatively impacts mothers' and fathers' mental health (Curran et al., 2021; Lee et al., 2022; Gard et al., 2020; Gershoff et al., 2007; Shelleby, 2018). More specifically, our results are consistent with studies that showed mothers' material hardship was associated with poor maternal mental health (Gard et al., 2020; Gershoff et al., 2007; Shelleby, 2018), as well as studies in which both mothers' and fathers' data were used to show that material hardship adversely affects fathers' mental health above and beyond the associations between fathers' and mothers' mental health problems (Lee et al., 2022). When viewed on the whole, studies to date seem to suggest that a core component of the FSM—that is, how the experience of material hardship is associated with poor parental mental health—does not discriminate between mothers and fathers. One interpretation is that material hardship exerts economic pressure related to paying for housing, utilities, or medical care that impact both parents and their mental wellbeing in similar ways. Such a finding points to the need for family strengthening policies and programs to address economic insecurity related to mental health issues for both mothers and fathers.

Our second hypothesis (H2) that parental depressive symptoms would be associated with higher levels of destructive interparental conflict, with depressive symptoms serving as mediators between material hardship and destructive interparental conflict, was supported. Again, the linkages of material hardship to mental health are a core theoretical component of the FSM. Overall, our results are consistent with what the FSM proposes regarding the associations between parental mental health problems and deteriorated partner relationship quality (Conger et al., 2002; Lee et al., 2023). Our finding that maternal depressive symptoms were associated with higher levels of mothers' reported destructive interparental conflict and served as a mediator between material hardship and maternal reported destructive interparental conflict supports what Conger et al. (2002) found in a sample of predominantly Black two-parent families with school-aged children. Similarly, our findings that paternal depressive symptoms were associated with higher levels of fathers' reported destructive interparental conflict (and mothers' reported destructive interparental conflict), as well as paternal depressive symptoms serving as a mediator between material hardship and both parents' reports of destructive interparental conflict, are consistent with what Lee et al. (2022) demonstrated using a BSF sample. Our results suggest that characteristics of parental depressive symptoms, including feeling depressed, experiencing sleep problems, and having difficulty concentrating, may help explain the indirect effects of parental depressive symptoms linking material hardship and destructive interparental conflict in racially and ethnically diverse families from socioeconomically disadvantaged backgrounds.

That said, our findings differ from those of Curran et al. (2021) who found no associations between maternal depressive symptoms at 15 months and destructive interparental conflict at 36 months in a BSF sample. One explanation may be differences in subsamples (e.g., our focus on couples who had observational data) and modeling of the main variables, with the current study conducting path analysis to identify mediators, whereas Curran et al. (2021) engaged in cross-lagged analysis to test reciprocal relations between variables. Another explanation points to the different use of measures. We leveraged BSF's multi-method data collection approach by using both self-reports and observations, whereas Curran et al. (2021) used only parental self-reports. Further, the researchers focused on coparenting as their parenting variable, whereas we focused on dimensions of parent-child emotional availability (i.e., detachment and warmth). Together, these differences across the two BSF studies may have contributed to different results. From our perspective, the current study's findings point to maternal and paternal mental health as possible targets for intervention for alleviating destructive interparental conflict.

Our third hypothesis (H3) that parental depressive symptoms would be associated with higher levels of detachment and lower levels of warmth, with depressive symptoms serving as mediators between material hardship and detachment and warmth, was partially supported. Overall, our findings support evidence from prior research showing that parental depressive symptoms are linked with less warmth (Cheung & Theule, 2019; Gard et al., 2020; Trussell et al., 2018), but not those showing associations with more detachment (Guyon-Harris et al., 2022; Wilson & Durbin, 2010). Specifically, our results that maternal depressive symptoms were linked to lower levels of warmth and served as a mediator between material hardship and maternal warmth are consistent with Gard et al.'s (2020) findings showing longitudinal relations between economic pressure, maternal psychological distress (which included depression and parenting stress), and maternal warmth in a FFCWS sample. Similarly, our finding that paternal depressive symptoms were associated with lower levels of paternal warmth is consistent with Wilson and Durbin's (2010) meta-analysis results (i.e., small but significantly negative effects of paternal depression on fathers' parenting, such as warmth). Again, these findings suggest the need for policies and programs supporting families with low income to help address maternal and paternal mental health to promote positive parenting behaviors in such families.

Our study extends the FSM by including parental detachment as a construct that is linked to material hardship initiated family processes. Notably, most prior FSM studies focus on disruptive parenting. Herein, we tested pathways linking destructive interparental conflict to parental detachment. We found that there were no significant links between parental depressive symptoms and parental detachment for either parent. This finding is inconsistent with the FSM which suggests that parents' mental health is a key factor that contributes to negative forms for parenting. Our finding is also inconsistent with prior studies examining the links between parental depressive symptoms and detachment (Guyon-Harris et al., 2022; Wilson & Durbin, 2010). These discrepancies in findings between our study and previous studies might be attributed to differences in study design, measures, and analytical approaches. For instance, whereas we focused on the overall severity of depressive symptoms, Guyon-Harris et al. (2022) examined heterogeneity in depressive symptoms and showed that only certain patterns of maternal depressive symptoms were significantly associated with disengaged parenting, with the high-depressed affect and physical profile predicting the greatest risk for disengaged parenting.

Alternatively, it may be that parental depressive symptoms are not directly but *indirectly* linked to maternal detachment, suggesting that material hardship operates through other parenting mechanisms in its association with

parental detachment. In this study, while we did not find direct effects of parental depressive symptoms on parental detachment for either parent, we found small yet significant indirect effects of parental depressive symptoms on maternal detachment via both mothers' and fathers' reported destructive interparental conflict. Relatedly, Schudlich et al. (2019) showed that paternal depressive symptoms were linked to greater paternal detachment by reducing constructive interparental conflict among families with infants, suggesting that interparental conflict may serve as a mechanism underlying the links between parental depressive symptoms and parental detachment with young children.

Our final hypothesis (H4) that destructive interparental conflict would be associated with higher levels of detachment and lower levels of warmth, with destructive interparental conflict serving as mediators between parental depressive symptoms and detachment and warmth, was partially supported. FSM posits associations between destructive interparental conflict and disruptive parenting (e.g., more harsh parenting, less warmth). Although we found support for the link between destructive interparental conflict and detachment, we did not find the same for warmth. The fact that neither parent's destructive interparental conflict predicted warmth points to limitations with the warmth measure which are noted below. Concerning destructive interparental conflict and detachment though, mothers' destructive interparental conflict was linked with higher levels of maternal detachment and served as a mediator between maternal depressive symptoms and maternal detachment. This is consistent with prior research with parents from middle-income (Erel & Burman, 1995) and low-income contexts (Sturge-Apple et al., 2012; Taylor et al., 2012) where hostility between mothers and fathers have been linked with lower levels of nurturant-involved parenting behaviors by mothers. Our result suggests that negative conflict behaviors such as blaming each other when things go wrong and putting each other's opinions, feelings, or desires down may work in explaining the indirect effects of destructive interparental conflict has in linking maternal depressive symptoms to maternal detachment.

Interestingly, fathers' destructive interparental conflict was only associated with lower levels of maternal detachment—an initially unanticipated finding with an opposite direction. Even though the FSM predicts spillover between destructive interparental conflict and parenting behavior, other patterns of relations between interparental conflict and parenting behavior have been identified, including a compensatory pattern in which parents who experience elevated interparental conflict respond with an increase in investment in the parent-child relationship to meet unmet needs for love and support (Erel & Burman, 1995). That

is, when fathers in our study reported more destructive interparental conflict, mothers may have compensated for such poor interparental relationship quality by engaging more with their children and thus ensuring that the mother-child emotional connection is positive. Indeed, tendencies toward compensatory patterns may be especially pronounced for mothers (Gao et al., 2019; Kouros et al., 2014), who may be better able to compartmentalize their family relationships to protect their roles as mothers. Alternatively, our findings may be pointing to possible enmeshment or triangulation occurring within the family system. Overall, we can only conjecture what might be happening here and thus we caution against drawing conclusions about maternal compensation. Further, we suggest the need for examining both measured and unmeasured variables that may be driving this effect, as well as replicating this finding.

It should be noted that, while statistically significant, the magnitudes of the indirect effects found in the study were generally small. Therefore, caution is warranted when interpreting the study results. Nonetheless, the small indirect effects found in this study are not surprising, given that modest coefficients and effect sizes are extremely common in any causal mediation analysis (Walters, 2019). The small indirect effects observed in the current study might be due to multiple mediators and control variables included in our model (Walters, 2019). It may also be that there are other (unexamined) mediators through which material hardships influence fathers' and mothers' parenting among families with low income. The study's findings of significant, albeit small, indirect effects of mediators offer valuable empirical support for the FSM and inform practice in strengthening families and improving parenting outcomes among racially diverse families with preschool-aged children and low income.

Importantly, IPV emerged as a significant control variable associated with higher levels of both mothers' and fathers' destructive interparental conflict, suggesting more severe forms of family violence, such as IPV, should be addressed in couples with low income to prevent and mitigate destructive interparental conflict and its negative effects on subsequent parenting behaviors. We found no moderation by fathers' residential status. Family processes linking material hardship to parental detachment and warmth were consistent across resident and non-resident father families in our racially and ethnically diverse sample. This finding is consistent with some previous studies (e.g., Coley & Hernandez, 2006; Lee et al., 2020) and suggests that there may be limited differences between low-income resident and non-resident father families when it comes to processes involving material hardship, parental mental health, interparental relationship, and parenting.

Limitations and Future Research Directions

A limitation of this study is the lack of generalizability of the BSF sample. The BSF consisted of parents with low levels of income and education. Most parents were not married at the time of their children's births. Furthermore, all BSF parents volunteered to participate in a relationship skills intervention program. As such, these parents may be unique in a number of ways, for example, having higher levels of father involvement, relationship stability, and quality than parents with low income more generally. Relatedly, compared to those in the excluded sample, parents in the analytic sample were older, more likely to work, be married, and be resident father families, suggesting that our results may be biased towards a more socioeconomically advantaged group of parents. For these reasons, our study results are not generalizable to the larger population of unmarried parents with low income.

Another limitation of the BSF data is that our analyses measures that were collected in the first few years of the child's life. Key measures were from the 15- and 36-month follow-ups of the BSF project. Relatedly, our sample was BSF couples with valid data (e.g., those who participated in the two-bags task). Further, the model variables pertinent to mediation were cross-sectional because the BSF data collection included two follow-up time points, yielding a final model that was half cross-sectional and half longitudinal. When using cross-sectional data, mediation analysis can yield biased results (O'Laughlin et al., 2018). Thus, future research would benefit from capturing these processes through mediation analysis using longitudinal data.

Some measures, including the parental warmth variable, were based on self-reports of parents. Although similar measures have been used in prior research of parental warmth (Baker, 2017), this measure omits other dimensions of parental warmth such as care, sensitivity, and support children receive from mothers and fathers. Further, the warmth measures showed low internal reliability, suggesting low correlation between the three items and low variability (with both mothers and fathers reporting generally high levels of warmth). Prior research with BSF data has shown similar patterns in parental warmth along with its limitations (Lee et al., 2018). However, we note that the limitations of the self-reported measures are partially addressed by using an observed measure of detachment from the two-bags task, which is complementary to parents' self-reports on warmth. Future studies could use more detailed and robust assessments of parental warmth—perhaps an observed measure of warmth or better yet a combined self-reported and observed measure of warmth (BSF lacked an observational warmth variable)—to uncover family processes linking material hardship to maternal and paternal warmth.

Given limitations with the sample size, combined with an already complex dyadic model and couple-level coding of the race and ethnicity variable, we were not able to conduct moderation by couples' race and ethnicity. This is an important area of inquiry and thus future research would do well to include and conduct race and ethnicity moderation, especially when using racially and ethnically diverse samples like the BSF data. Relatedly, future research should consider cultural aspects—including kinship support, familism, acculturation, and racial socialization—within non-Hispanic/Latinx Black and Hispanic/Latinx families that may serve as protective factors buffering the adverse effects of material hardship on interparental dynamics and family functioning. Finally, given theorization of bidirectional relations between interparental relationship problems and disruptive parenting in the FSM (Masarik & Conger, 2017), it would be worthwhile for future research to extend the current study's work by examining alternative pathways in which destructive interparental conflict is predictive of parent-child emotional availability and vice versa. Other alternative pathways for future research to consider include direct pathways between material hardship and parental detachment and warmth to examine whether such associations are fully mediated by parental depressive symptoms and destructive interparental conflict.

Conclusion

Despite the above limitations, the strengths of the current study include testing the FSM using both mothers' and fathers' data, simultaneously analyzing their variables in a joint model, including dimensions of parent-child emotional availability, and using both survey and observed parenting data from a large sample of racially and ethnically diverse mothers and fathers from low-income contexts. Overall, family stress processes can compromise parents' abilities to engage in positive parenting that helps them build strong emotional connections with their young children. Fathers and mothers in our study shared both similar and different pathways by which material hardship impacted their parental detachment and warmth. Importantly, the results suggest parental depressive symptoms and maternal destructive interparental conflict as potential targets for family strengthening policy and programmatic interventions to alleviate the negative effects of material hardship on parenting in families with low income. One example may be screening for both mothers' and fathers' depressive symptoms, making referrals for mental health and counseling services, and supporting mothers and fathers work on constructive forms of interparental conflict resolution.

Supplementary information The online version contains supplementary material available at <https://doi.org/10.1007/s10896-023-00583-x>.

Acknowledgements Research reported in this publication was supported by the Department of Health and Human Services, Administration for Children and Families, Office of Planning Research and Evaluation (Grant #90PR0015). Susan Yoon was supported by the National Institute of Drug Abuse through K01DA050778 (Yoon, PI). This study was approved as secondary data analysis by the Institutional Review Board at The Ohio State University. Project Name: Building Strong Families Secondary Data Analysis (Study ID: 2021B0386). Data and related materials are available at the Inter-university Consortium for Political and Social Research.

Declarations

Conflict of interest The authors have no conflict of interest to declare that are relevant to this article.

References

- Andreassen, C., Fletcher, P., & Park, J. (2007). *Early Childhood Longitudinal Study, Birth Cohort (ECLS-B): Psychometric report for the 2-year data collection*. U.S. Department of Education. <https://files.eric.ed.gov/fulltext/ED497762.pdf>. Accessed 6 Sept 2022
- Baker, C. E. (2017). Father-son relationships in ethnically diverse families: Links to boys' cognitive and social emotional development in preschool. *Journal of Child and Family Studies*, 26(8), 2335–2345. <https://doi.org/10.1007/s10826-017-0743-3>
- Barnett, M. A., Paschall, K. W., Kopystynska, O., Warren, S. M., & Curran, M. A. (2021). Pathways linking parental relationship changes, depressive symptoms, and parenting behaviors to young children's development. *Family Relations*, 70(3), 905–920.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238–246.
- Bornstein, M. H., Putnick, D. L., Heslington, M., Gini, M., Suwal-sky, J. T., Venuti, P., de Falco, S., Giusti, Z., & de Zingman, C. (2008). Mother-child emotional availability in ecological perspective: Three countries, two regions, two genders. *Developmental Psychology*, 44(3), 666–680. <https://doi.org/10.1037/0012-1649.44.3.666>
- Brooks-Gunn, J., & Duncan, G. J. (1997). The effects of poverty on children. *The Future of Children*, 7(2), 55. <https://doi.org/10.2307/1602387>
- Carlson, M. J., & McLanahan, S. S. (2010). Fathers in Fragile families. In M. Lamb (Ed.), *The role of the Father in Child Development* (5th ed., pp. 241–269). Wiley.
- Cheung, K., & Theule, J. (2019). Paternal depressive symptoms and parenting behaviors: An updated meta analysis. *Journal of Child and Family Studies*, 28(3), 613–626. <https://doi.org/10.1007/s10826-018-01316-1>
- Clark, E. L. M., Jiao, Y., Sandoval, K., & Biringer, Z. (2021). Neurobiological implications of parent-child emotional availability: A review. *Brain Science*, 11, 1016. <https://doi.org/10.3390/brainsci11081016>
- Coley, R. L., & Hernandez, D. C. (2006). Predictors of paternal involvement for resident and nonresident low-income fathers. *Developmental Psychology*, 42(6), 1041–1056.
- Conger, R. D., Elder, G. H., Lorenz, F. O., Conger, K. J., Simons, R. L., Whitbeck, L. B., Huck, S., & Melby, J. N. (1990). Linking economic hardship to marital quality and instability. *Journal of Marriage and the Family*, 52(3), 643. <https://doi.org/10.2307/352931>
- Conger, R. D., Ge, X., Elder, G. H., Jr., Lorenz, F. O., & Simons, R. L. (1994). Economic stress, coercive family process and developmental problems of adolescents. *Child Development*, 65, 541–561. <https://doi.org/10.1111/j.1467-8624.1994.tb00768.x>
- Conger, R. D., Wallace, L. E., Sun, Y., Simons, R. L., McLoyd, V. C., & Brody, G. H. (2002). Economic pressure in african american families: A replication and extension of the family stress model. *Developmental Psychology*, 38(2), 179–193.
- Conger, R. D., Rueter, M. A., & Elder, G. H., Jr. (1999). Couple resilience to economic pressure. *Journal of Personality and Social Psychology*, 76(1), 54–71. <https://doi.org/10.1037/0022-3514.76.1.54>
- Conger, K. J., Rueter, M. A., & Conger, R. D. (2000). The role of economic pressure in the lives of parents and their adolescents: The family stress model. In L. J. Crockett & R. K. Silbereisen (Eds.), *Negotiating adolescence in times of social change* (pp. 201–223). Cambridge University Press.
- Cummings, E. M., & Davies, P. T. (2010). *Marital conflict and children: An emotional security perspective*. Guilford.
- Curran, M. A., Li, X., Barnett, M., Kopystynska, O., Chandler, A. B., & LeBaron, A. B. (2021). Finances, depressive symptoms, destructive conflict, and coparenting among lower-income, unmarried couples: A two-wave, cross-lagged analysis. *Journal of Family Psychology*, 35(4), 489–499. <https://doi.org/10.1037/fam0000821>
- Dearing, E., & Hamilton, L. C. (2006). V. contemporary advances and classic advice for analyzing mediating and moderating variables. *Monographs of the Society for Research in Child Development*, 71(3), 88–104. <https://doi.org/10.1111/j.1540-5834.2006.00406.x>
- Emmen, R. A., Malda, M., Mesman, J., & van IJzendoorn, M. H., Prevo, M. J., & Yeniad, N. (2013). Socioeconomic status and parenting in ethnic minority families: Testing a minority family stress model. *Journal of Family Psychology*, 27(6), 896. <https://doi.org/10.1037/a0034693>
- Erel, O., & Burman, B. (1995). Interrelatedness of marital relations and parent-child relations: A meta-analytic review. *Psychological Bulletin*, 118(1), 108–132.
- Fagan, J., & Palkovitz, R. (2011). Coparenting and relationship quality effects on father engagement: Variations by residence, romance. *Journal of Marriage and Family*, 73(3), 637–653. <https://doi.org/10.1111/j.1741-3737.2011.00834.x>
- Fagan, J., Levine, E. C., Kaufman, R., & Hammar, C. (2016). Low-income, nonresident fathers' coparenting with multiple mothers and relatives: Effects on fathering. *Journal of Family Psychology*, 30(6), 665–675. <https://doi.org/10.1037/fam0000231>
- Gao, M. M., Du, H., Davies, P. T., & Cummings, E. M. (2019). Marital conflict behaviors and parenting: Dyadic links over time. *Family Relations*, 68(1), 135–149.
- Gard, A. M., McLoyd, V. C., Mitchell, C., & Hyde, L. W. (2020). Evaluation of a longitudinal family stress model in a population-based cohort. *Social Development*, 29(4), 1155–1175.
- Gershoff, E. T., Aber, J. L., Raver, C. C., & Lennson, M. C. (2007). Income is not enough: Incorporating material hardship into models of income associations with parenting and child development. *Child Development*, 78(1), 70–95.
- Guyon-Harris, K. L., Taraban, L., Bogen, D. L., Wilson, M. N., & Shaw, D. S. (2022). Individual differences in symptoms of maternal depression and associations with parenting behavior. *Journal of Family Psychology*. <https://doi.org/10.1037/fam0000988>
- Heflin, C. M., & Iceland, J. (2009). Poverty, material hardship and depression. *Social science quarterly*, 90(5), 1051–1071. <https://doi.org/10.1111/j.1540-6237.2009.00645.x>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>

- Jones, J., & Mosher, W. D. (2013). Fathers' involvement with their children: United States, 2006–2010. *National Health Statistics Reports*, 71, 1–21.
- Kenny, D. A. (2015). *Measuring model fit*. <https://davidakenny.net/cm/fit.htm>. Accessed 6 Sept 2022
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford.
- Kouros, C. D., Papp, L. M., Goeke-Morey, M. C., & Cummings, E. M. (2014). Spillover between marital quality and parent–child relationship quality: Parental depressive symptoms as moderators. *Journal of Family Psychology*, 28(3), 315–325.
- Lee, S. J., Pace, G. T., Lee, J. Y., & Knauer, H. (2018). The association of fathers' parental warmth and parenting stress to child behavior problems. *Children and youth services review*, 91, 1–10. <https://doi.org/10.1016/j.chilcyouth.2018.05.020>
- Lee, J. Y., Volling, B. L., Lee, S. J., & Altschul, I. (2020). Longitudinal Relations Between Coparenting and Father Engagement in Low-income Residential and Nonresidential Father Families. *Journal of Family Psychology*, 34(2), 226–236. <https://doi.org/10.1037/fam0000612>
- Lee J. Y., Volling B. L., and Lee S. J. (2021). Material hardship in families with low income: Positive effects of coparenting on fathers' and mothers' parenting and children's prosocial behaviors. *Frontiers in Psychology*, 12, 729654. <https://doi.org/10.3389/fpsyg.2021.729654>
- Lee, S. J., Pace, G. T., Lee, J. Y., & Altschul, I. (2022). Parental relationship status as a moderator of the associations between mothers' and fathers' conflict behaviors and early child behavior problems. *Journal of interpersonal violence*, 37(7–8), NP3801–NP3831. <https://doi.org/10.1177/0886260520948514>
- Lee, J. Y., Lee, S. J., Volling, B. L., & Grogan-Kaylor, A. C. (2023). Examining Mechanisms Linking Economic Insecurity to Interparental Conflict Among Couples with Low Income. *Family Relations*, 72(3), 1158–1185. <https://doi.org/10.1111/fare.12698>
- Masarik, A. S., & Conger, R. D. (2017). Stress and child development: A review of the family stress model. *Current Opinion in Psychology*, 13, 85–90.
- Neppl, T. K., Senia, J. M., & Donnellan, M. B. (2016). Effects of economic hardship: Testing the family stress model over time. *Journal of Family Psychology*, 30(1), 12. <https://doi.org/10.1037/fam0000168>
- Newland, R. P., Crnic, K. A., Cox, M. J., & Mills-Koonce, W. R. (2013). The family model stress and maternal psychological symptoms: Mediated pathways from economic hardship to parenting. *Journal of Family Psychology*, 27(1), 96. <https://doi.org/10.1037/a0031112>
- NICHD Early Child Care Research Network. (1999). Child care and mother–child interaction in the first three years of life. *Developmental Psychology*, 35(6), 1399–1413.
- Nord, C., Edwards, B., Hilpert, R., Elmore, A., & West, J. (2004). *Early childhood longitudinal study, birth cohort (ECLS-B): User's manual for the ECLS-B nine-month restricted-use data file and electronic code book*. National Center for Education Statistics, Institute of Education Sciences, U.S: Department of Education.
- Ouellette, T., Burstein, N., Long, D., & Beecroft, E. (2004). *Measures of material hardship: Final report*. U.S. Department of Health and Human Services Office of the Assistant Secretary for Planning and Evaluation. <https://aspe.hhs.gov/reports/measures-material-hardship-final-report>. Accessed 6 Sept 2022
- O'Laughlin, K. D., Martin, M. J., & Ferrer, E. (2018). Cross-Sectional Analysis of Longitudinal Mediation Processes. *Multivariate Behavioral Research*, 53(3), 375–402. <https://doi.org/10.1080/00273171.2018.1454822>
- Pinquart, M. (2017). Associations of parenting dimensions and styles with externalizing problems of children and adolescents: An updated meta-analysis. *Developmental Psychology*, 53(5), 873–932. <https://doi.org/10.1037/dev0000295>
- Parke, R. D., Coltrane, S., Duffy, S., Buriel, R., Dennis, J., Powers, J., & Widaman, K. F. (2004). Economic stress, parenting, and child adjustment in Mexican American and European American families. *Child Development*, 75(6), 1632–1656. <https://doi.org/10.1111/j.1467-8624.2004.00807.x>
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1(3), 385–401.
- Rohner, R. P. (2004). The parental “acceptance-rejection syndrome”: Universal correlates of perceived rejection. *American Psychologist*, 59(8), 830–840.
- Roisman, G. I., & Fraley, R. C. (2008). A behavior-genetic study of parenting quality, infant attachment security, and their covariation in a nationally representative sample. *Developmental Psychology*, 44(3), 831–839. <https://doi.org/10.1037/0012-1649.44.3.831>
- Roopnarine, J. L., & Dede Yildirim, E. (2018). Influence of relationship skills education on pathways of associations between paternal depressive symptoms and IPV and childhood behaviors. *Psychology of Men & Masculinity*, 19(2), 223–233. <https://doi.org/10.1037/men0000100>
- Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48(2). <https://doi.org/10.18637/jss.v048.i02>
- Schudlich, T. D. D. R., Jessica, N. W., Erwin, S. E. A., & Rishor, A. (2019). Infants' emotional security: The confluence of parental depression, interparental conflict, and parenting. *Journal of Applied Developmental Psychology*, 63, 42–53.
- Seneci, N., Flykt, M., Biringen, Z., Laudenslager, M. L., Watamura, S. E., Garrett, B. A., Kominsky, T. K., Wurster, H. E., & Sarche, M. (2021). Emotional Availability as a Moderator of Stress for Young Children and Parents in Two Diverse Early Head Start Samples. *Prevention Science, Advance online publication*. <https://doi.org/10.1007/s1121-021-01307-7>
- Shelleby, E. C. (2018). Economic stress in fragile families: Pathways to parent and child maladjustment. *Journal of Child and Family Studies*, 27(12), 3877–3886.
- Shelleby, E. C., Pittman, L. D., Bridgett, D. J., Keane, J., Zolinski, S., & Caradec, J. (2022). Associations between local COVID-19 case rates, pandemic-related financial stress and parent and child functioning. *Journal of Family Psychology*, 36(6), 932–942. <https://doi.org/10.1037/fam0000996>
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods*, 7(4), 422–445.
- Simons, L. G., Wickrama, K. A. S., Lee, T. K., Landers-Potts, M., Cutrona, C., & Conger, R. D. (2016). Testing family stress and family investment explanations for conduct problems among african american adolescents: Testing family stress and investment explanations. *Journal of Marriage and Family*, 78(2), 498–515.
- Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, 25(2), 173–180.
- Sturge-Apple, M. L., Skibo, M. A., & Oavies, P. T. (2012). Impact of parental conflict and emotional abuse on children and families. *Partner Abuse*, 3(3), 379–400.
- Taylor, Z. E., Larsen-Rife, D., Conger, R. D., & Widaman, K. F. (2012). Familism, interparental conflict, and parenting in mexican-origin families: A cultural–contextual framework. *Journal of Marriage and Family*, 74(2), 312–327.
- Trussell, T. M., Ward, W. L., & Connors Edge, N. A. (2018). The impact of maternal depression on children: A call for maternal depression screening. *Clinical Pediatrics*, 57(10), 1137–1147. <https://doi.org/10.1177/0009922818769450>

- U.S. Census Bureau (2020). *2020: ACS 5-Year Estimates Subject Table*. <https://data.census.gov/cedsci/table?q=POVERTY%20STATUS%20IN%20THE%20PAST%2012%20MONTHS%20OF%20FAMILIES&tid=ACSST5Y2020.S1702>. Accessed 6 Sept 2022
- Walters, G. D. (2019). Why are mediation effects so small? *International Journal of Social Research Methodology*, *22*(2), 219–232. <https://doi.org/10.1080/13645579.2018.1517232>
- Warren, E. J., & Font, S. A. (2015). Housing insecurity, maternal stress, and child maltreatment: An application of the family stress model. *Social Service Review*, *89*(1), 9–39.
- White, R., Liu, Y., Nair, R. L., & Tein, J. Y. (2015). Longitudinal and integrative tests of family stress model effects on Mexican origin adolescents. *Developmental Psychology*, *51*(5), 649. <https://doi.org/10.1037/a0038993>
- Wilson, S., & Durbin, C. E. (2010). Effects of paternal depression on fathers' parenting behaviors: A meta-analytic review. *Clinical Psychology Review*, *30*(2), 167–180.
- Wood, R. G., McConnell, S., Moore, Q., & Clarkwest, A. (2010). *Strengthening unmarried parents' Relationships: The early impacts of building strong families*. Mathematica Policy Research.
- Zaslow, M., Mariner, C., Moore, K., & Oldham, E. (1998). *Exploratory measures of parenting developed for the JOBS descriptive study*. <https://tinyurl.com/2spmatra>. Accessed 6 Sept 2022
- Zhang, X., Zhang, Y., & Vasilenko, S. A. (2022). The longitudinal relationships among poverty, material hardship, and maternal depression in the USA: A latent growth mediation model. *Archives of Women's Mental Health*, *25*, 763–770. <https://doi.org/10.1007/s00737-022-01238-4>
- Zhang, X., Krishnakumar, A., & Narine, L. (2020). Family economic hardship and child outcomes: Test of family stress model in the Chinese context. *Journal of Family Psychology*, *34*(8), 960–968. <https://doi.org/10.1037/fam0000670>

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.