



Published in final edited form as:

*Child Youth Serv Rev.* 2018 August ; 91: 1–10. doi:10.1016/j.chilyouth.2018.05.020.

## The Association of Fathers' Parental Warmth and Parenting Stress to Child Behavior Problems

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### Abstract

This study examines whether fathers' parental warmth and parenting stress were associated with behavior problems when children were approximately 36-months of age, beyond the influence of maternal behaviors. Study participants were 3,342 low-income fathers and mothers who participated in the Building Strong Families (BSF) study. Cross-sectional regression analyses indicated that for unmarried nonresidential families, fathers' parental warmth and parenting stress were associated with child internalizing behavior problems; and fathers' parenting stress only was marginally associated with child externalizing behavior problems. For consistently cohabiting residential fathers, only fathers' parenting stress was marginally associated with child internalizing behavior problems. No associations of fathers' parental warmth and parenting stress on either internalizing or externalizing behavior problems were observed in married families. Overall, study results suggest that fathers' parental warmth and parenting stress may have a modest positive association on the development of child internalizing behavior problems particularly in vulnerable families (e.g., families in which fathers were nonresidential).

### Keywords

Building Strong Families; fragile families; father-child relationship; parental warmth; parenting stress

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Warmth is a central component of parenting that contributes to child wellbeing (Khaleque, 2013; Pinquart, 2017; Rohner & Britner, 2002). Warmth is conveyed through parenting behaviors, such as affection, comfort, concern, nurturance, and support to the child. Parental warmth is an indicator of parents' love and acceptance of the child (Rohner, 2004) and thought to be the antithesis of parental rejection (e.g., the absence or withdrawal of parental love) (Rohner & Britner, 2012). Parental warmth is associated with children's better mental health and psychological adjustment, as well as lower levels of child behavior problems (Deater-Deckard & Panneton, 2017; Khaleque, 2013; Pinquart, 2017; Rohner & Britner, 2002), regardless of whether the parent is a mother or father (Pinquart, 2017; Rohner & Veneziano, 2001). Yet, as noted by Pinquart (2017) in a recent meta-analysis of over 1,435 studies examining parental warmth, few studies have examined fathers' parental warmth.

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Declarations of interest: none.

The current study focuses on fathers' parental warmth, parenting stress, and depression, because while warmth can enhance the parent-child relationship, high levels of parenting stress and depression are associated with lower levels of father engagement and parental warmth (Bronte-Tinkew, Horowitz, & Carrano, 2010; Deater-Deckard & Panneton, 2017). Furthermore, numerous studies show that fathers' parenting stress and depression are associated with deleterious outcomes in early childhood (Bronte-Tinkew et al., 2010; Davis, Davis, Freed, & Clark, 2011; Fletcher, Feeman, Garfield, & Vimpani, 2011; Lee, 2013; Lee, Taylor, & Bellamy, 2012; Wilson & Durbin, 2010) that may persist into adolescence and early adulthood (Reeb et al., 2015).

This study examines the association of these paternal parenting factors with child internalizing and externalizing behavior problems in a large, racially and ethnically diverse sample of low-income parents with young children. Most of the study participants were unmarried at the time of their child's birth; therefore, study analyses examine differences in child outcomes for married couples, unmarried consistently cohabiting couples, and unmarried nonresidential father families. In addition, analyses account for maternal factors, thus allowing for examination of whether fathers' behaviors have unique associations with the development of child behavior problems among young children.

## Theories of Father Involvement

Pleck's (2010) conceptual framework of father involvement highlights that both fathers' *engagement in activities*, as well as *warmth and responsiveness* are central to the fathering role. This framework captures both direct caregiving behaviors (e.g., engagement in activities) and dimensions of engagement (e.g., warmth and responsiveness) that are inclusive of residential and nonresidential fathers' parenting roles. This distinction is important because fathers' parenting roles are more tenuous compared to mothers' parenting roles (Goeke-Morey & Cummings, 2007), particularly among nonresidential fathers. Furthermore, nonresidential fathers engage in less direct caregiving of young children compared to residential 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). In Pleck's (2010) framework, even though nonresidential fathers may spend less overall time (i.e., quantity) caring for their child, the quality of involvement is a key element of positive father involvement. For example, a nonresidential father-child relationship that is high in warmth and responsiveness may exert direct influence on child wellbeing, even if the father spends less time in direct caregiving activities. Indeed, Amato and Gilbreth (1999)'s seminal meta-analysis demonstrated that the *quality* of nonresidential fathers' involvement, specifically, fathers' encouragement, support, and closeness to the child were associated with children's social, emotional, and psychological wellbeing (Adamsons & Johnson, 2013; Amato & Gilbreth, 1999).

## Paternal Parenting Warmth

Studies have operationalized fathers' warmth and responsiveness through a variety of measures. The measure in the current study consists of both fathers' and mothers' reports of

how often the parent and child have warm close times together, how much the parent feels like the child likes the parent and wants to be near the parent, and how often the parent shows love to the child even when he or she is in a bad mood. The items were derived from a parental warmth measure that was developed by Child Trends to address limitations of some observational measures of parental warmth (Zaslow et al., 2002). Similar items have been used to measure paternal warmth in other studies. For example, in the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B), paternal warmth was measured by the father's report of four items indicating how often he engaged in behaviors, such as expressing love and affection to the child (Baker, 2017). In the Panel Study of Income Dynamics (PSID), nonresidential fathers' warmth was also measured based on reports of engagement in warm behaviors toward their child (Harper & Fine, 2006). The Three City Study used two items (i.e, how often the father hugged and kissed the child, how often the father comforted the child when she or he was upset or crying) to assess emotional warmth, and created a composite score of fathers' warmth and cognitive stimulation (Coley, Lewin-Bizan, & Carrano, 2011).

Research supports inclusion of fathers' warmth as a key component of positive father involvement. Studies of children under the age of 5 that used data from ECLS-B found that fathers' warmth was associated with less risk of infant cognitive delays (Bronte-Tinkew, Carrano, Horowitz, & Kinukawa, 2008) and young children's higher reading and math scores (among boys only) (Baker, 2017). In a study that used data from the PSID, nonresidential fathers' warmth was associated with a global measure of child wellbeing (Harper & Fine, 2006). Among school-aged girls, warmth in the father-child relationship when the child was in first grade mediated the link between father-child interaction quality and prosocial behavior when the child was in third grade (Webster, Low, Siller, & Hackett, 2013). Another study that conducted prospective analyses found that paternal emotional warmth and responsive parenting behaviors were linked to children's later reading and math skills, regardless of fathers' residential status and net of the effect of maternal influences (Coley et al., 2011). Indeed, a recent meta-analysis found that higher levels of parental warmth had small but significant associations with fewer externalizing problems among school-aged children, with similar associations for mothers and fathers, even though few studies included fathers (Pinquart, 2017).

## Parenting Stress and Depression

In addition, this study examines the role of fathers' and mothers' parenting stress and depressive symptoms, and their associations with child behavior problems. Empirical research shows strong support for the family stress model (Conger, Ge, Elder, Lorenz, & Simons, 1994; McLoyd, 1990), which posits that economic disadvantage contributes to higher levels of parenting stress and depression (Cassells & Evans, 2017; Chang et al., 2004; Nomaguchi & Johnson, 2017; Parke et al., 2004; Prelow, Weaver, Bowman, & Swenson, 2010). In turn, parental distress contributes to lower levels of father involvement (Bronte-Tinkew et al., 2010), less parental warmth and lower quality parent-child interactions (Farmer & Lee, 2011; Newland, Crnic, Cox, & Mills-Koonce, 2013; Prelow et al., 2010).

The mechanisms posited by the family stress model, whereby parental distress inhibits the expression of parental warmth, may be especially relevant to the parents in the current study, who experienced high levels of economic disadvantage, as well as high levels of parental relationship instability. Studies show that poverty and socioeconomic disadvantage exacerbate parenting stress (Bronte-Tinkew et al., 2010; Cassells & Evans, 2017). Furthermore, parenting stress is higher among “unstable” families, for example, those in which mother-father relationships end and new relationships are formed with non-biological parents of the child (Cooper, McLanahan, Meadows, & Brooks-Gunn, 2009; Halpern-Meekin & Turney, 2016).

## The Role of Maternal Behaviors

Family systems theory helps to illustrate the complexity of father involvement (Cox & Paley, 1997) by highlighting that individuals are part of a system of interconnected relationships that exert mutual influence on each other, with the implication that parents’ behaviors cannot be well understood in isolation from one another. From a family systems perspective, both mothers’ and fathers’ parenting behaviors contribute to child wellbeing. However, when considering fathers’ parenting influences from a family systems perspective, research has not consistently established robust relationships of fathers’ parenting behaviors on child outcomes.

Specifically, studies that examine fathers and mothers simultaneously do not consistently show that fathers’ parenting behaviors have unique associations with child outcomes after accounting for the strong and well documented influences of maternal parenting behavior on child wellbeing. For example, a study of low-income urban families that examined the impact of both fathers’ and mothers’ mental health problem on the development of child behavior problems found that fathers’ mental health status was not significantly associated with child behavior problems after accounting for the influence of maternal mental health problems (Meadows, McLanahan, & Brooks-Gunn, 2007). In an observational study of low-income rural fathers and mothers, fathers’ sensitive parenting at 7 months was not associated with later child executive functioning, whereas mothers’ sensitive parenting was positively associated with child executive functioning (Towe-Goodman et al 2014). However, fathers’ sensitive parenting at 24 months was associated with child executive functioning at 3 years of age (Towe-Goodman et al., 2014), suggesting mixed evidence for a direct paternal influence.

One previous study of the Building Strong Families (BSF) intervention demonstrated that paternal warmth at 36-months did not mediate the influence of paternal depressive symptoms or interpersonal violence (IPV) on children’s behavioral problems (Roopnarine & Dede Yildirim, 2017). This study focused on interparental conflict, and the results suggested that high levels of paternal warmth do not attenuate the negative relationship of interparental conflict on child behavior problems. To date, few recent studies of early childhood have examined fathers’ warmth in conjunction with mothers’ warmth, thus it is difficult to ascertain whether fathers’ warmth makes any unique direct contribution to child wellbeing above and beyond the influence of maternal warmth.

The research on parenting stress and the family stress model suggests similar processes for both mothers and fathers (Williams, Cheadle, & Goosby, 2013). However, again, studies are somewhat inconsistent with research suggesting that, similar to mothers, fathers also are affected by parenting stress (Crnic & Ross, 2017). One small study showed no direct effects of low-income African American fathers' parenting stress on child social development (Mitchell & Cabrera, 2009). Furthermore, few studies of fathers' parenting stress also include variables assessing maternal parenting stress (Crnic & Ross, 2017). One notable exception is a study that examined residential fathers and showed that after controlling for maternal effects, paternal parenting stress was associated with lower levels of father involvement and co-parenting relationship quality (Bronte-Tinkew et al., 2010).

## The Current Study

While research has long supported the notion that parental warmth, depression, and parenting stress are central components of parenting that contribute to child wellbeing (Deater-Deckard & Panneton, 2017; Khaleque, 2013; Pinquart, 2017; Rohner & Britner, 2002; Wilson & Durbin, 2010), little is known about whether fathers' warmth, depression, and parenting stress have direct associations with child behavior problems, net of maternal factors. The first research question in the current study was to examine whether these factors were associated with child behavior problems, after controlling for maternal factors. Based on literature showing the influence of maternal factors on the development of child behavior problems, we hypothesized that maternal warmth, depressive symptoms, and parenting stress would be associated with child behavior problems. While prior research suggests that fathers' warmth, depression, and parenting stress would play a similar role (e.g., Pinquart, 2017; Wilson & Durbin, 2010), research findings are inconsistent (Crnic & Ross, 2017; Mitchell & Cabrera, 2009).

Our second research question was to examine whether any observed associations of paternal warmth, depression, and parenting stress to child behavior problems differed by parental relationship status and fathers' residential status. Based on research showing unique trajectories of father involvement across family configurations (Carlson & McLanahan, 2010; Carlson, McLanahan, & England, 2004), we examined three types of involved-father family configurations: (1) residential married parents; (2) consistently cohabiting unmarried parents; and (3) and unmarried nonresidential father families.

We included a robust set of covariates capturing parenting relationship, socioeconomic status, and child characteristics. Many studies have shown that IPV is more common in low-income families (Stith, Smith, Penn, Ward, & Tritt, 2004) and is associated with heightened levels of child behavior problems (Cummings & Davis, 2010); therefore, we controlled for maternal and paternal reports of IPV perpetrated from their partner. We also controlled for family socioeconomic factors, such as whether children were living in poverty, race and ethnicity, and parental education levels.

## Methods

### BSF Study Participants

Respondents were participants in a randomized controlled trial (RCT) of a healthy marriage and relationship strengthening intervention for low-income, mostly unmarried couples. This study, called Building Strong Families (BSF), was conducted between 2005 and 2011 across eight sites in the United States. Heterosexual couples ( $N = 5,102$ ) were recruited from hospitals, maternity wards, prenatal clinics, health clinics, and Special Nutritional Programs for Women, Infants, and Children (WIC) clinics. Couples were eligible to enroll in BSF if: (1) both mother and father agreed to participate in the program; (2) the couple was romantically involved; (3) the couple was either expecting a baby together or had a baby that was younger than 3 months old; (4) the couple was unmarried at the time their baby was conceived; and (5) both members of the couple were 18 years of age or older (Wood, Moore, Clarkwest, & Killewald, 2014). Data were collected from participants at three time points. First, both parents completed a brief eligibility survey at baseline, which was near the time of the child's birth. Then, two extensive telephone follow-up surveys were conducted 15 months and 36 months after baseline. Comprehensive reports of study procedures and sample are available elsewhere (Wood, Moore, Clarkwest, Hsueh, & McConnell, 2010; Wood et al., 2014).

### Participants in this Study

The sample in the current study consisted of families with non-missing data on both outcome measures. Families were excluded from analyses if they were missing data on child internalizing and externalizing behavior problems ( $n = 1,232$ ). We also omitted 14 families in which one of the parents was deceased, 466 families in which either parent had not seen the child in the past month, 31 families in which the father was incarcerated at 36 months, and 17 families who were missing data on marital or residential status. This resulted in a final analytic sample of 3,342 families.

### Description of the BSF Randomized Controlled Trial

Mathematica Policy Research conducted a rigorous evaluation of whether the relationship strengthening intervention had effects on couples' relationship quality, likelihood of marriage, and father involvement. Results indicated no intervention effects on key outcomes, such as partner relationship quality, co-parenting, parents' likelihood of marriage, and father involvement (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2012; Wood et al., 2010; Wood et al., 2014; Wood, Moore, Clarkwest, Killewald, & Monahan, 2012). One exception was a positive effect of the BSF intervention on child outcomes, with children of parents in the intervention group showing fewer behavioral problems compared to children of parents in the control group (Moore, Wood, Clarkwest, Killewald, & Monahan, 2012). In our analyses, we control for the BSF intervention assignment and adherence to treatment as covariates.



## Measures

**Relationship status.**—At 36 months, parents were asked how often they lived in the same household with both the child and the other parent since the child was born. We categorized families as “consistently cohabiting” if both parents indicated they had always lived together with the child since the child was born. If only one parent participated in the survey, we used the only available response. Parents were also asked about their current relationship status. Couples in which both parents agreed they were currently married, or if only one parent participated in the survey and indicated they were married, were categorized as “married by 36 months”. The final categorizations include “married by 36 months” ( $n = 784$ ), “consistently cohabited by 36 months” (i.e., those who remained unmarried but reported always living together) ( $n = 987$ ), and “unmarried nonresidential” (i.e., those who were not married and did not always live together since the child’s birth) ( $n = 1,571$ ). We stratify the sample by these categories in our analyses.

**Dependent variable:** *Child internalizing and externalizing behavior problems* were measured at 36 months using the Behavioral Problems Index (BPI) (Peterson & Zill, 1986; Zill, 1985). Parents indicated whether statements about the child’s behavior were 1 = *often true*, 2 = *sometimes true*, or 3 = *never true*. After reverse coding and subtracting 1 from each item, we conducted an exploratory factor analysis with two factors to determine which items were most appropriate for each subscale, as some items have been known to load on both subscales (e.g., Center for Human Resource Research, 2009). “Cries too much” and “demands a lot of attention” are generally considered internalizing items but loaded higher on externalizing. “Is rather high strung, tense and nervous” and “has a lot of difficulty getting (his/her) mind off certain thoughts” are generally considered externalizing items but loaded higher on internalizing. The lowest factor loading for externalizing was .33 with an average of .48, and the lowest factor loading for internalizing was .28 with an average factor loading of .39. Internalizing included 11 items and externalizing included 15 items.

Most mothers completed the BPI. However, fathers were asked these items in cases in which the father lives with the child more often than the mother, or in cases in which neither parent lives with the child and the father spends more than an hour a day with the child at least a few times per week. We constructed our internalizing and externalizing behavior measures using all available reports from the mother only (90%), father only (1%), and both parents (9%) when available. We computed an average for cases with at least 73% non-missing responses for internalizing behavior problems and 80% non-missing responses for externalizing behavior problems. Raw mean scores were used for analysis, which is consistent with prior studies using the BPI (Ryan, Claessens, & Markowitz, 2015). Internalizing  $\alpha = .71$ ; Externalizing  $\alpha = .84$ .

**Independent variables:** *Parental warmth* was assessed at 36 months using three self-report items (Zaslow, Mariner, Moore, & Oldham, 1998). Mothers and fathers were asked how often 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.” Response options included: 1 = *often*, 2 = *sometimes*, 3 = *rarely*, and 4

= *never*. We reverse coded and computed the average of the items ( $\alpha_{\text{fathers}} = .50$ ;  $\alpha_{\text{mothers}} = .45$ ).

**Parenting stress** was assessed at 36 months using items from the Aggravation in Parenting Scale developed for the National Survey of America's Families (Ehrle & Moore, 1997; Murphey, Bandy, Moore, & Cooper, 2014, March). Mothers and fathers indicated how often in the past month they felt their children were harder to care for than most, their children did things that really bothered them, they were giving up more of their lives to meet the children's needs than expected, and they felt angry with their children. These items were measured using a 4-point scale: 1 = *all of the time*, 2 = *most of the time*, 3 = *some of the time*, 4 = *none of the time*. We reverse coded these items so that higher values would indicate higher parenting stress. We then computed the average of the items ( $\alpha_{\text{fathers}} = .50$ ;  $\alpha_{\text{mothers}} = .54$ ).

**Depressive symptoms** were assessed at 36 months using the 12-item version of the Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977). Mothers and fathers completed the CES-D to assess whether they felt sad or lonely, experienced restless sleep, had reduced appetite, and had difficulty concentrating. Mothers and fathers were asked how often they experienced these symptoms in the past week using a 4-point scale: 1 = *rarely or none of the time*, 2 = *some of the time*, 3 = *a moderate amount of the time*, 4 = *most or all of the time*. We subtracted each item by 1 and computed an average for cases with at least 75% non-missing responses ( $\alpha_{\text{fathers}} = .83$ ;  $\alpha_{\text{mothers}} = .85$ ).

**Intimate partner violence (IPV)** was assessed at 15 months using 12 items from the physical assault subscale and a single item from the sexual coercion subscale of the revised Conflict Tactic Scale (CTS2) (Straus, Hamby, Boney-McCoy, & Sugarman, 1996), as well as a single item that indicated whether the parent reported needing medical attention because of a violent act by the other parent. Items included physical assault (e.g., kicking, slapping, hitting) and sexual coercion (i.e., partner used force or threats to make you have sex or do sexual things you didn't want to do). We created a dummy variable indicating whether either parent reported such acts as being committed against him or her in the past year.

**Sociodemographic control variables.:** *Parents' race/ethnicity* was measured at baseline with a series of dummy variables including whether both parents are Hispanic, both are non-Hispanic white, both are non-Hispanic black (omitted), and other couples. **Parental education** was measured at baseline with dummy variables for whether either or both parents have a high school degree at baseline. **Parental age** was measured at baseline in number of years. A binary indicator for whether the **household was in poverty was measured at 15 months old** and was constructed by BSF evaluators. Child characteristics include dummy variables for **child gender** and a dummy variable for **child low birth weight**.

**BSF Intervention Assignment.**—Finally, we included variables to account for any potential treatment effects and differences between BSF program sites. In order to account for potential treatment effects, we included a set of dummy variables for whether the couple was part of the control group (omitted), whether the couple was in the treatment group but the father never attended a BSF session, and whether the couple was in the treatment group



and the father attended at least one BSF session. To account for contextual and program differences between BSF sites, we included dummy variables for the eight BSF program sites.

### Analysis Plan

We analyzed data separately by partner relationship status and father's residential status using linear regression models conducted in Stata 14.0. Our marital and residential status groups included: "married by 36 months" e.g., couples who were married at 36 months, "consistently cohabiting", e.g., couples who consistently cohabited since child's birth, and "unmarried nonresidential," e.g., those who were unmarried at 36 months and did not consistently cohabit since the child's birth. We analyzed these groups separately because there were considerable group differences in terms of socio-demographic makeup (see Table 1). Further, we were interested in understanding the within group association of parental warmth and child wellbeing, not just how residential and relationship status moderated parental warmth. The influence of contextual factors, and the processes and trajectories of parental warmth and child wellbeing are different based on family structure, allowing for better understanding and more precise interpretation when groups are stratified (Carlson & McLanahan, 2010; Carlson et al., 2004).

We ran two types of models for each outcome (internalizing and externalizing behavior problems) and group (married, consistently cohabiting, and unmarried nonresidential). The first model included the full set of predictors excluding maternal warmth. The second model included the same predictors as the first model while adding maternal warmth. Careful examination of both models indicated no meaningful patterns in results for the model excluding maternal warmth. Significance levels and coefficient estimates were highly comparable across the two sets of models. Therefore, the models excluding maternal warmth are not reported in the tables, due to space constraints.

We used full information maximum likelihood (FIML; MLMV in Stata) to estimate missing values in the models. Seventy-one percent of the sample had no missing data. All independent variables had some missing data except parent's age, BSF program site, random assignment, and father's treatment compliance. Household poverty had the most missing data at 17% ( $n = 558$ ), followed by paternal warmth at 14% ( $n = 475$ ), father's parenting stress at 13% ( $n = 447$ ), and father's depressive symptoms at 13% ( $n = 446$ ). The average amount of missing data across independent variables with any missingness was 5.5% (married = 4%, cohabiting = 5%, unmarried nonresidential = 6%). There were more missing data for fathers than mothers. For example, paternal warmth was 14% missing overall ( $n = 475$ , married = 10%, cohabiting = 16%, unmarried nonresidential = 15%) while maternal warmth was 1% missing overall ( $n = 47$ ).

We adjusted for heteroskedasticity using robust standard errors. The highest variance inflation factor was 3 for any model, so we concluded there was not an issue of multicollinearity. We used Wald tests and linear combined tests to determine whether estimates were statistically different from each other.

BSF staff conducted attrition analyses using the What Works Clearinghouse recommendations. Overall, results of the of the attrition analyses at both the 15- and 36-month follow-up surveys indicated that the analytic sample had low attrition to meet the What Works Clearinghouse evidence standards (for details, see Wood et al., 2010; Moore et al., 2012). Several subsamples—Baltimore site, Florida site, and the non-Hispanic white subgroup at the 15-month follow-up and the Florida site—did not sufficiently meet attrition standards, and thus were subject to equivalence tests. Results of the equivalence tests demonstrated that the BSF intervention and control groups in Baltimore, Florida, and Houston were not equivalent with respect to demographic characteristics (e.g., both partners are black, cohabiting) and response rates (Wood et al., 2010; Moore et al., 2012)

## Results

### Descriptive Results

Table 1 shows descriptive statistics for the full sample, the married families, consistently cohabiting families, and unmarried nonresidential father families. Consistent with the BSF recruitment approach, the sample is very low-income, with 50% of families living in poverty when the child was approximately 15 months of age. Parental education levels were also low, with only 48% of couples reporting that both parents had a high school degree. Mothers were on average 23 years of age and fathers on average 25 years of age when they entered the study. The sample was diverse with respect to race and ethnicity. In approximately 20% of the couples, both parents were Hispanic; 15% of couples both parents were white; 55% of couples were African American; and 10% of couples were another race or biracial. In 36% of families, one or both parents reported IPV. Table 2 shows the descriptive results for key parenting variables and child behavior problems by family configuration.

### Child Internalizing Behavior Problems

Table 3 shows the linear regression results for paternal and maternal warmth at 36-months as predictors of child internalizing behaviors at 36-months. There was no association of paternal warmth and child internalizing behaviors for married and consistently cohabiting families, even in the initial models that did not include a variable assessing maternal warmth. However, among unmarried nonresidential families only, results indicated that higher levels of paternal warmth had a small negative association with child internalizing behaviors ( $B = -.04, p < .01$ ), even with maternal warmth included in the model ( $B = -.10, p < .001$ ). A linear combination test indicated maternal warmth had a marginally stronger association with the outcome than paternal warmth ( $p = 0.06$ ). Wald tests between groups showed that the paternal warmth coefficient for unmarried nonresidential families was significantly different from paternal warmth in consistently cohabiting families ( $p < .05$ ), but not married families. Maternal warmth was negatively associated with child internalizing behavior problems for each family configuration group except the cohabiting family model.

The results for child internalizing behavior problems also indicated that parenting stress was significantly associated with child internalizing behavior problems. Specifically, higher levels of paternal and maternal parenting stress were significantly associated with internalizing child behavior problems among the consistently cohabiting families and the

unmarried nonresidential father families. For unmarried consistently cohabiting families, fathers' parenting stress had a small but marginally significant association ( $B = .02, p < .10$ ) on child internalizing behavior problems; maternal parenting stress had a larger association ( $B = .11, p < .001$ ) with child internalizing behavior problems. The difference in the linear combination of these coefficients was statistically significant ( $p < .001$ ). Similarly, for unmarried nonresidential families, fathers' parenting stress had a small but significant association ( $B = .04, p < .01$ ) on child internalizing behavior problems; and maternal parenting stress had a larger association ( $B = .10, p < .001$ ) with child internalizing behavior problems. The difference in the linear combination of these coefficients was also significant at  $p < .001$ . Maternal depressive symptoms were associated with child internalizing behavior problems for each family configuration; however, paternal depressive symptoms showed no association with child wellbeing for any family configuration.

### Child Externalizing Behavior Problems

Table 4 shows the linear regression results for paternal and maternal warmth at 36-months months as predictors of child externalizing behaviors at the same time point, when children were approximately 36 months old. Results indicated no significant associations of fathers' parental warmth to child externalizing behavior problems, regardless of family configuration. Maternal warmth, parenting stress, and depressive symptoms were significantly negatively associated with externalizing behavior problems for each family configuration, though the association of maternal warmth to child externalizing behavior problems in married families was only marginally significant ( $p < .10$ ). Fathers' parenting stress showed a small marginally significant association ( $B = .03, p < .10$ ) with child externalizing behavior problems for unmarried nonresidential family configurations only. However, a Wald test indicated this coefficient was not statistically different from the same coefficient in the married or consistently cohabiting groups. Paternal depressive symptoms did not show associations with child externalizing behavior problems across family configurations.

### Discussion

The current study presents cross-sectional analyses to address several questions related to the contribution of paternal and maternal parental behaviors to child behavioral outcomes. A meta-analysis of 1,435 studies examining the influence of parental warmth on child wellbeing pointed out that most studies have focused on mothers (Pinquart, 2017), with a lack of research that includes assessment of paternal warmth. Few studies have simultaneously examined paternal and maternal parenting stress (Crnic & Ross, 2017). The current study provides some insight into these issues among a large, diverse sample of fathers and mothers of young children who experienced high levels of socioeconomic disadvantage and relationship instability during their child's early years.

It is important at the outset to note that the study results should be interpreted in light of the limitations of the measure of parental warmth. The operationalization of parental warmth used herein is limited to parents' self-report of three behaviors in the parent-child relationship. Although this measure is similar to measures used in prior studies of paternal

warmth (Baker, 2017; Coley et al., 2011; Harper & Fine, 2006), these items do not capture other important dimensions of parental warmth, such as intimate aspects of parental sensitivity, care, and support. The limitation of the parental warmth measure used in BSF is noted in prior research (Roopnarine & Dede Yildirim, 2017). The items show low internal reliability, which is expected given that the measure consists of only three items (Zaslow et al., 1998). While the measure provides some insight into fathers' and mothers' warmth, research would be strengthened by the use of a more robust measure of parental warmth, possibly including observers' reports.

That said, the study results provide some cross-sectional evidence on fathers' and mothers' warmth, parenting stress and depressive symptoms, and their associations with child wellbeing. As hypothesized, maternal warmth, parenting stress, and depressive symptoms all showed significant (or marginally significant, as was the case for maternal warmth and child externalizing behavior problems for married families) associations with child behavior problems across family configurations. Results showed small associations between fathers' parenting behaviors and child outcomes, mainly among nonresidential father families. There were no associations of fathers' warmth, parenting stress, and depressive symptoms on child behavioral problems among married residential father families. Overall, the results provided modest evidence that fathers' warmth and parenting stress have small cross-sectional associations with child behavior problems, with associations most evident for nonresidential father families.

### **Nonresidential Fathers**

The results of this study suggest that nonresidential fathers' higher levels of warmth toward their child may have a modest association with the development of fewer internalizing behavior problems among young children. This finding can be interpreted as providing support for Pleck's conceptual framework of father involvement (Pleck, 2010), which underscores the importance of considering warmth as a separate dimension of positive father involvement. Pleck (2010) noted the importance of including warmth and responsiveness to prior conceptualizations. Furthermore, the warmth items used in the current study somewhat correspond to those mentioned in Pleck (2010)'s model to describe warmth (e.g., showing affection to child every day, telling child he loves him or her).

This result is also in line with studies showing that positive nonresidential father involvement or engagement is beneficial to children and adolescents across outcomes (Adamsons & Johnson, 2013). In particular, study results are consistent with another study of 452 nonresidential fathers and their adolescent children showing that nonresidential fathers' responsive parenting was associated with fewer internalizing problems among adolescents even after controlling for mother-child relationship quality (King & Sobolewski, 2006). Our finding adds to these prior studies by highlighting that the association between nonresidential fathers' warmth and child internalizing behavior problems may be observed in the first three years of a child's life.

There may be several reasons why the association between paternal warmth and child internalizing behavior problems was seen primarily among unmarried nonresidential father families, and not among married or consistently cohabiting families. We note that all of the

fathers included in analyses had seen their child at least once in the past month, so these fathers had some recent contact with their child. Although this is speculative, it is possible that the positive effects of warmth may be amplified when a nonresidential father returns to see his child, versus when a residential father returns home on a regular basis (e.g., returning home every day after work). Also speculative, nonresidential fathers may be more motivated to engage in responsive parenting practices compared to fathers who see their children more regularly. Although not sharing a residence with their children makes it challenging for fathers to perform other dimensions of the parental role (e.g., daily caregiving, control, discipline) (Jones & Mosher, 2013), some nonresidential fathers may find less overall time spent with their child as motivation to engage in more warm interactions with their child (King & Sobolewski, 2006).

### **Paternal Parenting Stress and Depression**

Prior studies have shown that fathers' parenting stress and depression are associated with deleterious outcomes for children in early childhood (Bronte-Tinkew et al., 2010; Davis et al., 2011; Fletcher et al., 2011; Lee, 2013; Lee et al., 2012; Wilson & Durbin, 2010), as well as during adolescence and early adulthood (Reeb et al., 2015). The results of the current study suggest that fathers' parenting stress was associated with elevated levels of child internalizing behavior problems, however, this association was only significant for unmarried nonresidential father families. Research shows that mothers in less stable family structures, including nonresident and cohabiting situations, display higher levels of parenting stress (Cooper et al., 2009). As noted earlier, fathers may be affected similarly, with one study showing higher levels of paternal parenting stress among less stable family configurations (Nomaguchi & Johnson, 2017).

The modest associations of fathers' behaviors on child outcomes were not entirely unexpected in light of existing research. Studies have not consistently shown that paternal parenting stress has direct effects on child outcomes (Crnic & Ross, 2017). One study found no direct effect of fathers' mental health status on child behavior problems after controlling for maternal mental health (Meadows et al., 2007). However, another important factor – not examined in the current study – is whether fathers' influences on child wellbeing may be felt indirectly via influence on the family system (Cox & Paley, 1997). For example, the impact of fathers' behaviors may be felt through their effects on co-parenting processes, parental relationship quality, and maternal parenting that then influence child wellbeing. Research supports these indirect pathways via co-parenting relationship and parental relationship quality. For example, factors such as fathers' participation in parenting and positive co-parenting relationship reduce maternal parenting stress (Coley & Schindler, 2008; Nomaguchi, Brown, & Leyman, 2017).

### **Study Limitations and Directions for Future Research**

In addition to the limitations of the measure of paternal warmth, as noted previously, another study limitation is that the analyses presented herein capture parenting behaviors at 36-months when children are about 3 years of age. Parental warmth and child behavior problems were measured only once in BSF. Thus, it was not possible to conduct longitudinal analysis. It is possible that the modest effects observed in the current cross-sectional

analyses would not hold up over time if examined in longitudinal analyses. The cross-sectional nature of the analyses makes it impossible to establish the causal order of the independent and dependent variables. For example, it is plausible that fathers' parenting warmth and parenting stress have a reciprocal relationship with children's behavior and the current study cannot address the reciprocal nature of these relationships. The analyses are also unable to control for the child's temperament. Children who are more difficult to manage or who are perceived by their parents to have a more difficult temperamental style may elicit less warmth and more stress from their parents. Future research could be strengthened through the use of longitudinal, prospective analyses and control variables assessing child temperament at an earlier time point.

Although the sample is large and diverse with respect to geographical region, as well as race and ethnicity of the parents, most study participants were unmarried at the time of their child's birth, had low-income, had low levels of education, and were quite young. Although our sample included families with both residential and nonresidential fathers, all parents had to report being in some form of romantic relationship during BSF screening. The analyses presented herein only include families in which the father indicated he saw his child in the past month. Thus, although there were high levels of socioeconomic disadvantage in this sample, the sample may not consist of the most high-risk families, such as those with a consistently absent father. Furthermore, the study is limited in generalizability because nearly all families were unmarried and willing to participate in an intervention at the time of recruitment into the BSF study.

Mothers mainly reported the measure of child behavior problems. This increases the potential for reporter bias. It would have been preferable to have both parents report child behavior problems for each family or to have an observational variable of child behavior problems.

An additional concern is that there is likely considerable heterogeneity within the three categories of father involvement that we identified (i.e., married, consistently cohabiting, and unmarried nonresidential). For example, theoretical conceptualizations of father involvement have focused on fathers' *engagement*, or direct interaction with the child, fathers' *accessibility*, or physical and psychological availability to the child, and fathers' *responsibility*, or concern for the child's well-being including economic support (Pleck, 1997; Pleck, Lamb, & Levine, 1985). Thus, by focusing on married, consistently cohabiting, and unmarried nonresidential categories, this study does not examine the responsibility component of father involvement, and only partially assesses the engagement and availability components of father involvement. Future research may wish to examine variability within these categories by assessing fathers' involvement in daily caregiving activities and other components of engagement and availability.

In addition, future research should consider how race and ethnicity may be associated with father involvement and parenting behaviors. A growing body of research shows that among low-income families, father co-residence and parenting practice vary by race. For example, studies of low-income, non-residential fathers have found that in early childhood African American fathers are significantly more involved than white or Hispanic fathers (Cabrera,



Ryan, Mitchell, Shannon, & Tamis-LeMonda, 2008; Edin, Tach, & Mincy, 2009), both in terms of the frequency and amount of time spent with the child, but also in engagement in activities with their child, and sharing of caregiving responsibilities (Ellerbe, Jones, & Carlson, 2018). In the current study, we controlled for parents' race and ethnicity but did not examine race and ethnic differences in depth.

### **Implications for Policy and Practice**

The Healthy Marriage and Responsible Fatherhood (HMRF) initiative has been funding programs to strengthen father-child engagement, increase employment and economic mobility opportunities, and improve healthy relationships (partner and co-parenting) and marriage (U.S. Department of Health and Human Services, 2016). BSF was a part of the HMRF policy initiative. The primary goal of BSF was to improve couples' relationship quality and ultimately increase family stability and child wellbeing (Wood et al., 2014). As noted earlier, evaluation reports demonstrated that the program did not significantly improve couples' relationship quality, co-parenting, and father involvement (Wood, McConnell, et al., 2012). The BSF evaluation results suggest that different approaches may be needed to strengthen family relationships and child wellbeing in vulnerable families. When coupled with the findings of the current study, one goal for future intervention research could be to focus intervention directly on enhancing nonresidential fathers' warmth and responsive parenting behaviors and reducing their parenting stress. Focusing on directly enhancing the father-child relationship may be particularly important in nonresidential father families. Approaches such as the "Baby Elmo" program are beginning to show promise outcomes related to enhancing father-child relationships in early childhood, even among vulnerable populations such as incarcerated fathers (Barr et al., 2011; Richeda et al., 2015).

### **Conclusion**

This study adds knowledge of how fathers' parenting behaviors, net of the influence of mothers' parenting behaviors, are associated with child wellbeing. We extend prior research on early father involvement by examining parental warmth and parenting stress among a large and diverse sample of socioeconomically disadvantaged parents of young children. Overall, the results of this study show small associations of fathers' warmth and parenting stress on child behavior problems, but mainly among nonresidential family configurations. By contrast, maternal parenting behaviors showed more consistent associations with child behavior problems across family configurations. Study results suggest that intervention approaches – particularly those targeting nonresidential fathers – that seek to enhance warmth in the father-child relationship, build attachment between fathers and their children, and reduce parenting stress may be associated with modest reductions in risk for child behavior problems, particularly among socioeconomically disadvantaged families.

### **Acknowledgments**

This study was funded by Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) (1R15HD091763-01) to Dr. Shawna J. Lee. The authors gratefully acknowledge use of services and facilities of the Population Studies Center at the University of Michigan, funded by the Eunice Kennedy Shriver NICHD under award number P2CHD041028. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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**Table 1.**

Descriptive Statistics for Full Sample and by Co-residence History Since Child's Birth

Variable (Range)	Full Sample N = 3,342		Married by 36 months n = 784		Consistently cohabited by 36 months n = 987		Unmarried Nonresidential n = 1,571		p-value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Race/Ethnicity									< .001
Couple both black	0.55		0.39		0.46		0.69		
Couple both Hispanic	0.20		0.26		0.32		0.10		
Couple both white	0.15		0.25		0.12		0.11		
Couple other race	0.10		0.10		0.10		0.10		
Education									< .001
One partner has high school degree	0.34		0.33		0.35		0.35		
Both partners have high school degree	0.48		0.56		0.44		0.46		
Paternal age (18–67)	25.30	6.13	26.16	6.45	25.99	6.17	24.44	5.83	< .001
Maternal age (18–43)	23.03	4.70	23.65	4.78	23.60	4.98	22.36	4.37	< .001
Child lives in poverty at 15 months	0.50		0.38		0.45		0.59		< .001
Intimate partner violence	0.36		0.28		0.26		0.46		< .001
Child is male	0.50		0.50		0.49		0.50		NS
Low birth weight	0.10		0.09		0.08		0.12		0.017
Treatment status									< .001
Non-complier in BSF treatment group	0.20		0.15		0.21		0.23		
Complier in BSF treatment group	0.30		0.35		0.29		0.27		

Note: Significance tests are between married, consistently cohabiting, and unmarried nonresidential groups. Chi-square tests are used for categorical variables and ANOVAs are used for continuous variables. NS = non-significant.



**Table 2.**

Descriptive Statistics for Full Sample and by Co-residence History Since Child's Birth

	Range		Full Sample		Married by 36 months		Consistently cohabited by 36 months		Unmarried Nonresidential		p-value
			N = 3,342		n = 784		n = 987		n = 1,571		
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Internalizing	0	1.9	0.17	0.21	0.16	0.20	0.18	0.22	0.17	0.21	NS
Externalizing	0	2	0.53	0.33	0.52	0.32	0.50	0.33	0.55	0.33	< .001
Paternal warmth	1	4	3.86	0.33	3.89	0.28	3.88	0.30	3.83	0.36	< .001
Maternal warmth	1	4	3.92	0.23	3.93	0.20	3.92	0.23	3.91	0.25	NS
Paternal parenting stress	1	4	1.59	0.53	1.61	0.52	1.59	0.52	1.59	0.55	NS
Maternal parenting stress	1	4	1.58	0.51	1.57	0.50	1.58	0.54	1.58	0.50	NS
Paternal depressive symptoms	0	3	0.34	0.46	0.28	0.40	0.27	0.41	0.41	0.50	< .001
Maternal depressive symptoms	0	3	0.38	0.50	0.34	0.45	0.32	0.45	0.44	0.54	< .001

Note: Significance tests are ANOVAs between married, consistently cohabiting, and unmarried nonresidential groups. NS = non-significant.

**Table 3.**

## Linear Regression Predicting Child Internalizing Behaviors

	Married by 36 months (n = 782)		Consistently cohabited by 36 months (n = 987)		Unmarried nonresidential (n = 1,571)	
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>
Paternal warmth	0.00	0.02	0.01	0.02	-0.04	0.01 **
Maternal warmth	-0.14	0.05 ***	-0.05	0.03	-0.10	0.03 ***
Paternal parenting stress	0.02	0.02	0.02	0.01 †	0.04	0.01 **
Maternal parenting stress	0.08	0.02 ***	0.11	0.02 ***	0.10	0.01 ***
Paternal depressive symptoms	-0.01	0.03	0.01	0.02	0.00	0.01
Maternal depressive symptoms	0.04	0.02 *	0.10	0.02 ***	0.07	0.01 ***
Race/Ethnicity (ref = couple both black)						
Couple both Hispanic	0.08	0.02 **	0.12	0.02 ***	0.05	0.02 *
Couple both white	0.01	0.02	0.03	0.02	0.00	0.02
Couple other race	0.00	0.02	0.04	0.02 †	0.01	0.02
Education (ref = neither parent has high school degree)						
One parent has high school degree	0.00	0.02	-0.02	0.02	-0.04	0.02 **
Both parents have high school degree	-0.01	0.02	-0.05	0.02 *	-0.04	0.01 **
Paternal age	0.00	0.00	0.00	0.00	0.00	0.00
Maternal age	0.00	0.00 *	0.00	0.00	0.00	0.00
Child in poverty at 15 months	0.01	0.01	0.01	0.01	0.00	0.01
Any intimate partner violence (ref = no IPV)	0.01	0.02	-0.02	0.02	0.00	0.01
Child is male (ref = child is female)	0.02	0.01	0.01	0.01	0.01	0.01
Low birth weight	0.03	0.02	0.02	0.02	0.04	0.02 *
Intercept	0.58	0.22 **	0.06	0.18	0.56	0.13 ***
R2	0.15		0.23		0.20	

Note: Models also include controls for program city, whether the family was in the treatment group, and whether fathers in the treatment group attended 1 or more BSF sessions.

†  $p < .10$ ;

\*  $p < .05$ ;

\*\*  $p < .01$ ;

\*\*\*  $p < .001$

**Table 4.**

## Linear Regression Predicting Child Externalizing Behaviors

	Married by 36 months (n = 782)		Consistently cohabited by 36 months (n = 987)		Unmarried nonresidential (n = 1,571)	
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>
Paternal warmth	0.03	0.04	-0.04	0.04	-0.03	0.02
Maternal warmth	-0.12	0.06 †	-0.11	0.05 *	-0.07	0.03 *
Paternal parenting stress	0.03	0.02	0.03	0.02	0.03	0.02 †
Maternal parenting stress	0.19	0.03 ***	0.18	0.02 ***	0.22	0.02 ***
Paternal depressive symptoms	0.00	0.04	0.03	0.04	0.01	0.02
Maternal depressive symptoms	0.13	0.03 ***	0.12	0.03 ***	0.09	0.02 ***
Race/Ethnicity (ref = couple both black)						
Couple both Hispanic	0.06	0.04 †	0.04	0.03	0.05	0.03
Couple both white	0.08	0.03 **	0.06	0.03 †	0.08	0.03 **
Couple other race	0.03	0.04	0.06	0.03 †	0.01	0.03
Education (ref = neither parent has high school degree)						
One parent has high school degree	0.00	0.04	0.04	0.03	0.00	0.02
Both parents have high school degree	0.00	0.04	0.00	0.03	-0.01	0.02
Paternal age	0.00	0.00	0.00	0.00	0.00	0.00
Maternal age	0.00	0.00	0.00	0.00	0.00	0.00
Child in poverty at 15 months	-0.02	0.02	-0.03	0.02	-0.03	0.02 †
Any intimate partner violence (ref = no IPV)	0.05	0.03 †	0.06	0.02 *	0.04	0.02 *
Child is male (ref = child is female)	0.07	0.02 **	0.02	0.02	0.03	0.02 †
Low birth weight	0.05	0.04	-0.04	0.03	0.07	0.03 **
Intercept	0.49	0.32	0.75	0.28 **	0.46	0.17 **
R2	0.23		0.20		0.22	

Note: Models also include controls for program city, whether the family was in the treatment group, and whether fathers in the treatment group attended 1 or more BSF sessions.

†  $p < .10$ ;

\*  $p < .05$ ;

\*\*  $p < .01$ ;

\*\*\*  $p < .001$