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The Socioemotional Outcomes of Young Children of Teenage Mothers by Paternal Coresidence

Anne Martin, DrPH,

National Center for Children and Families, Teachers College, Columbia University, 525 West 120th Street, Box 39, New York, NY 10027, phone: (212) 678-3479, fax: (212) 678-3676, arm53@columbia.edu

Adam Brazil, and

Institute for Educational Research and Public Service, Joseph R. Pearson Hall, 1122 West Campus Road, Room 320, Lawrence, KS 66045, phone: (785) 864-9680, fax: (785) 864-5212, brazil@ku.edu

Jeanne Brooks-Gunn, PhD

National Center for Children and Families, Teachers College, Columbia University, 525 West 120th Street, Box 39, New York, NY 10027, phone: (212) 678-3369, fax: (212) 678-3676, jb224@columbia.edu

Abstract

To date, no study has examined the implications of biological fathers' coresidence for the socioemotional development of children of teenage mothers. Previous research suggests competing hypotheses. Men who father children with teenage women have low education and earnings and are disproportionately likely to be antisocial. However, teenage mothers are less distressed when fathers are more involved caregivers. The current study follows a multi-city sample of children born to teenage women ($n = 509$) for their first three years of life in the Fragile Families and Child Wellbeing Study. Children whose biological father coresided continuously (20%) were more likely to be securely attached to their mother and had fewer externalizing problems than other children at age 3. Paternal coresidence did not increase household income, and it only marginally lowered maternal parenting stress.

Keywords

teenage mothers; family structure; early childhood development

The children of teenage mothers typically experience poorer socioemotional outcomes than the children of older mothers (Hofferth & Reid, 2002; Levine, Pollack, & Comfort, 2001). Some of this association is due to selection, given that the teenage women who become mothers have fewer socioeconomic resources and personal assets than their peers (Geronimus, Korenman, & Hillemeier, 1994; Lopez Turley, 2003). However, some of the association is likely to be causal, in part because teenage mothers are less skilled at parenting than older mothers (Berlin, Brady-Smith, & Brooks-Gunn, 2002; Lee, 2009; McAnarney, Lawrence, Ricciuti, Polley, & Szilagyi, 1986). They are also less likely than older mothers to be married (Ventura, Mathews, & Hamilton, 2001), which places their children at risk of poorer socioemotional outcomes (see Waldfogel, Craigie, & Brooks-Gunn, 2010). Furthermore, the fathers of children born to teenage mothers may be particularly unlikely to stay involved in their child's life (Gee & Rhodes, 2003; Saleh & Hilton, 2011; but see Farrie, Lee, & Fagan, 2011).

On the other hand, greater father involvement is not universally favorable for children's development. The degree to which fathers' presence in the home promotes positive child development is a function of fathers' earning capacity, mental health, and parenting behaviors (Ryan, in press). Some fathers may not only fail to foster positive child outcomes, but they may even foster negative child outcomes. For example, Jaffee, Moffitt, Caspi, and Taylor (2003) found that the children of fathers who exhibited antisocial behavior were at increased risk of conduct problems the longer their fathers lived with them. The men who partner with teenage women may constitute another group of fathers whose presence adversely affects children's socioemotional wellbeing. As a whole, the men who father children with teenage mothers have less education and employment and a greater likelihood of committing abuse, being incarcerated, and using illicit drugs than other fathers (Lopoo, 2005; Tan & Quinlivan, 2006). Therefore, the children of teenage mothers may fare better with less exposure to their fathers. At the same time, research shows that biological fathers' involvement in caregiving reduces teenage mothers' parenting stress (Kalil, Ziol-Guest, & Coley, 2005), which is associated with better socioemotional outcomes for children (Hart & Kelley, 2006). To date there has been no test of these competing hypotheses.

Using a sample of children born to teenage mothers, the present study asks how biological fathers' coresidence in the first three years of life is associated with three key indicators of early child socioemotional development: attachment to the mother, internalizing behavior problems, and externalizing behavior problems. It also tests whether the associations that emerge are mediated by three factors generally thought to explain the advantages of paternal coresidence among older mothers: greater paternal involvement in childrearing, lower maternal parenting stress, and greater household income. Data are drawn from the multi-site, longitudinal Fragile Families and Child Wellbeing Study (FFCWS). Because it was designed to study nonmarital childbearing, the FFCWS includes a disproportionate number of teenage mothers. It collected information on both mothers and children when children were aged 1 and 3 in 18 cities across the country.

Father Involvement and Child Socioemotional Wellbeing

Young children living with both biological parents have more favorable socioemotional outcomes than other children, although this association is largely driven by selection into marriage (Foster & Kalil, 2007; Ryan, in press). To the extent that the association is causal, it likely reflects a combination of increased income, reduced maternal stress, and the father's supportive parenting (Carlson & Corcoran, 2001; Lamb, 2010). Research shows that the children of married and cohabiting couples often have comparable socioemotional outcomes (Aronson & Huston, 2004; Artis, 2007; Heiland & Liu, 2006), suggesting that it may be paternal coresidence rather than marriage that benefits children.

However, paternal coresidence may not be salutary for children's socioemotional development in all families. To the extent that paternal coresidence increases household income, reduces maternal stress, and exposes the child to the father's supportive parenting behaviors, these pathways may be blunted when fathers fail to fulfill one or more of these functions. That is, children may not benefit from fathers who lack sufficient earnings capacity, exhibit mental health problems, and/or display insensitive or unstimulating parenting behaviors. Jaffee et al. (2003) found that the amount of time antisocial fathers lived with their children in the first eight years of life predicted their child's conduct problems. The authors hypothesized that antisocial fathers increased child conduct problems by parenting harshly, depriving the family of income, and/or abusing drugs or alcohol. All three of these behaviors characterize the men who have children with teenage mothers.

Approximately 65% of the men who partner with teenage women are themselves 20 years or older (Landry & Forrest, 1995). Aside from the view that such men are predators, there are grounds for concern about their lack of human capital. Adult men who father children with teenage women are more likely to be unemployed and antisocial than adult men with older partners (Elster, Lamb, & Kimmerly, 1989). Similarly, the teenage men who partner with teenage mothers are disproportionately likely to be delinquent, use substances, and drop out of school compared to their same-aged peers (Jaffee, Caspi, Moffitt, Taylor, & Dickson, 2001; Pears, Pierce, Kim, Capaldi, & Owen, 2005). All three of these characteristics of fathers are associated with behavior problems in children. Antisocial or aggressive men engage in harsh parenting, which in turn predicts antisocial or aggressive behavior in children (Capaldi, Pears, Patterson, & Owen, 2003; Conger, Neppl, Kim, & Scaramella, 2003). Likewise, fathers who use drugs have poorer parenting skills (Fals-Stewart, Kelley, Fincham, Golden, & Logsdon, 2004). Fathers with less education have lower earnings capacity (Becker, 1993), and household income is negatively associated with behavior problems in young children (Linver, Brooks-Gunn, & Kohen, 2002). Additionally, fathers with less education and income display lower sensitivity with their young children (Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004).

Furthermore, there is a high probability of relationship dissolution in the child's first years of life (Larson, Hussey, Gilmore, & Gilchrist, 1996; Unger & Wandersman, 1988). In one sample, only 21% of teenage mothers were still romantically involved with the child's father three years post-partum (Gee & Rhodes, 2003). To the extent that the break-up causes a teenage mother to experience stress and depression, her child is at risk of insecure attachment and behavior problems (Black et al., 2002; Emery, Paquette, & Bigras, 2008; Hubbs-Tait, Osofsky, Hann, & Culp, 1994). Break-ups also decrease the likelihood of sustained paternal involvement in caregiving (Herzog, Umana-Taylor, Madden-Derdich, & Leonard, 2007). Indeed, past research with teenage mothers shows that fathers' involvement steadily decreases over the child's first few years of life. One study of urban teenage fathers found that by 18 months post-partum, only 37% had daily contact with their children (Rivara, Sweeney, & Henderson, 1986).

Past Research on the Children of Teenage Mothers According to Father Involvement

There are no national estimates of the proportion of teenage mothers who live with their baby's father, but two community samples yield a range of 11%-22% at child age 1 (Howard, Lefever, Borkowski, & Whitman, 2006; Hubbs-Tait et al., 1994). Perhaps because of its infrequency, the coresidence of biological fathers has received almost no attention in the literature on teenage mothers. To our knowledge, there has been only one empirical test of teenage mothers' young children's socioemotional wellbeing according to paternal coresidence. Spieker and Bensley (1994) found that infants who lived with their mothers' partner were no more likely to be securely attached to their mother than other infants. However, mothers' partners were not restricted to children's biological fathers.

Given the scarcity of evidence on paternal coresidence and teenage mothers, it may be profitable to consider past research on paternal involvement. Studies find that biological fathers' early involvement in their child's life averts anxiety, depression, and parenting stress among teenage mothers (Gee & Rhodes, 2003; Kalil et al., 2005). Given that teenage mothers' stress and depression predict child behavior problems (Black et al., 2002; Emery et al., 2008; Hubbs-Tait et al., 1994), biological fathers' coresidence may be expected to be protective. Indeed, in one sample of teenage mothers, more consistent biological father involvement in the child's first eight years of life predicted fewer behavior problems at age 8 (Howard et al., 2006). However, the effects of father involvement may not be equivalent to

those of coresidence. Also, this study did not identify any mediating mechanisms. It remains unclear whether paternal involvement exerted a causal effect on child behavior or whether the association was attributable to fathers' selection into more versus less involvement. The literature on older couples suggests that paternal coresidence benefits children because it increases household income, lowers maternal stress, and increases paternal involvement in caregiving (Carlson & Corcoran, 2001; Lamb, 2010). It is unknown whether similar processes apply to younger couples.

The Present Study

The present study capitalizes on a study of unmarried parents in which teenage mothers are overrepresented. The sample size allows, within a subgroup of children born to teenage mothers, a comparison of those living with their biological fathers to children with other living arrangements in the first three years of life. We examine three key indicators of children's socioemotional wellbeing as of age 3: secure attachment to mother, internalizing problems, and externalizing problems.

Despite the expected characteristics of fathers in our sample, we tentatively predicted that their coresidence from birth to age 3 would be associated with better socioemotional outcomes in light of the most relevant evidence to date on paternal involvement (Howard et al., 2006). Further, based on past research (Gee & Rhodes, 2003; Kalil et al., 2005), we expected the link between paternal coresidence and child socioemotional wellbeing to be at least partially mediated by either or both lower maternal stress and greater paternal involvement, measured at age 1. Because the fathers who partner with teenage mothers are likely to be low earners, we did not expect household income to increase enough to play a mediating role.

Methods

Sample

Data are taken from the FFCWS, a longitudinal survey of births in 20 large U.S. cities (population over 200,000) that oversampled births to unmarried parents (more than 3600 of the 5000 total births; Reichman, Teitler, Garfinkel, & McLanahan, 2001). The study interviewed mothers and fathers in person shortly after the birth of the child, and by phone approximately one, three and five years later. Of the unmarried mothers interviewed at baseline, 89%, 86%, and 84% were re-interviewed at the Year 1, 3, and 5 waves, respectively. A subsample of participants was included in a substudy which visited families in their homes when the child was aged 3 and 5. An additional component called the Child Care and Parental Employment (CCPE) survey was administered in 18 of 20 cities. Children's attachment status and behavior were assessed as part of this module ($n = 2,176$).

We selected mothers who participated in the CCPE who were teenagers (<20 years) at baseline when the focal child was born ($n = 731$). We excluded 13 mothers who did not live with the child at the Year 1 phone interview. For eligibility in the analytic sample, cases had to have a valid value on one of our three dependent variables at age 3. Dropped cases ($n = 209$) were less likely than retained cases ($n = 509$) to have coresident fathers in the child's first three years of life (10% vs 20%). Dropped cases were also less likely to be black (52% vs 59%), more likely to be Hispanic (29% vs 23%), and less likely to have graduated from high school (30% vs 40%). Last, dropped cases scored lower on father involvement (.50 vs .55). Dropped and retained mothers did not differ significantly at the $p < .05$ level in terms of child sex, maternal age, maternal parenting stress at Year 1, poverty status at baseline, or household income at Year 1.

Our final analytic sample of mothers was mostly black (59%) or Hispanic (23%) with a mean age of 18.2 years. Sixty percent of mothers had not completed high school or obtained an equivalent degree at baseline. Approximately half (55%) of the children were male. Twenty-eight percent of the mothers had already had a child. The average income-to-needs ratio was 1.6. The biological fathers in our sample were 21.4 years old on average at baseline. Only 21 mothers were married to the biological father at the child's birth.

Measures

Paternal coresidence—A dummy variable indicating whether the child lived with his/her biological father from birth to 3 was coded affirmatively if the mother reported doing so at baseline, Year 1, and Year 3. Twenty percent of children ($n = 102$) met this criterion. However, many more children lived with their biological father at any one wave. Specifically, 41% of children lived with him at baseline, 49% lived with him at Year 1, and 33% lived with him at Year 3. Children whose father coresided at only one or two waves (42%) were coded the same as children whose father never lived with them (38%).

Child-mother attachment—Mothers completed the MAS-39 (Bimler & Kirkland, 2005), an attachment Q-sort procedure for toddlers, at the Year 3 home visit. Items (e.g., “Is very clingy”) were derived from Waters' (1987) Attachment Q-set. Mothers sorted 39 cards, each with one item, into three piles: one that applied more to the child, one that applied less to the child, and an intermediary pile. Mothers then subdivided the cards in the “applies more” pile into “applies mostly” (= 1) or “applies often” (= 2). Cards in the “applies less” pile were subdivided into “applies sometimes” (= 4) or “applies hardly ever” (= 5). The intermediary pile (= 3) was left alone (Howard, Brooks-Gunn, & Lubke, 2008). During analysis, multidimensional scaling was used to represent each item as a point in a three-dimensional map with three axes representing dimensions of attachment behaviors: Security vs Insecurity, Independence vs Dependence, and Object vs Social Orientation (Bimler & Kirkland, 2005). Children were assigned scores on eight “hot-spots,” or locations on the map corresponding to key attachment constructs (e.g., “upset by separation”), according to their points' distance from those locations. Each child's scores on the hot-spots were compared to those for prototypes of avoidant (A), secure (B), and resistant (C) attachment. (No disorganized (D) cases emerged.) Given the low number of children categorized as avoidant or resistant, the present analysis considers children as securely attached (76%) or insecurely attached (24%).

Internalizing/externalizing behavior—The child's internalizing and externalizing behavior was assessed during the Year 3 home visit. Items were drawn from the Child Behavior Checklist 2-3 (Achenbach, 1992). The mother indicated how well each item described her child (0 = *not true* to 2 = *very true*). The internalizing scale is the sum of 24 items ($\alpha = .82$, $M = 10.4$, $SD = 6.2$). The externalizing scale is the sum of 22 items ($\alpha = .88$, $M = 16.0$, $SD = 7.8$).

Paternal involvement—The biological father's involvement in the child's life at age 1 was assessed using three measures from the Year 1 phone interview. Mothers' reports were used instead of fathers' because of the higher response rate; past research shows that mothers are accurate reporters of fathers' involvement (Caspi et al., 2001). First, mothers reported the number of days in the last week (0-7) that the father had engaged in 10 father-child activities (e.g., reading stories, playing with toys, changing diapers, feeding the child). Second, mothers reported how often (0 = *never* to 3 = *often*) the father shared responsibility in four child-related tasks (looking after child while mother does things, running errands for mother, taking the child to places like daycare or the doctor, and fixing or maintaining the home). Last, mothers reported how many days in the previous month the father had spent at

least one hour with the child (0 = *never* to 4 = *every day*). The three measures ($r_s = .80-.85$) were combined into a global measure of average paternal involvement, following Carlson and Turner (2010). First each measure was converted into a proportion of its total maximum score, and then the three measures were averaged ($M = 0.55$, $SD = 0.35$).

Maternal parenting stress—Mothers' parenting stress was measured during the Year 1 phone interview. Mothers were asked to endorse four statements (Being a parent is harder than I thought it would be; I feel trapped by my responsibilities as a parent; I find that taking care of my child(ren) is much more work than pleasure; I often feel tired, worn out, or exhausted from raising a family). Responses (1 = *strongly agree* to 4 = *strongly disagree*) were reversed and averaged ($\alpha = .59$, $M = 2.2$, $SD = 0.67$).

Household income—Household income was reported by mothers during the Year 1 phone interview.

Control variables—Characteristics of the family that may be associated with both paternal coresidence and child outcomes were included as controls in multivariate models. The mother's race/ethnicity was coded as white, black, Hispanic, or other. A dummy variable indicated whether the mother had a high school diploma or equivalent degree at baseline. Maternal and paternal age, the month of the pregnancy when the mother had her first prenatal care visit, and whether the mother was born in the U.S. were reported by the mother at baseline. Dummy variables denoted whether the family fell below the federal poverty threshold and whether the mother had any other children at the time of the focal child's birth. The child's sex was also controlled, although exploratory analyses showed that it did not moderate associations between paternal coresidence and child outcomes.

Missing Data

Data on living arrangements were present for all cases at baseline, but were missing for 3% of cases at Year 1, and 1% cases at Year 3. Missingness on the proposed mediators at age 1 ranged from 3% (maternal parenting stress) to 13% (household income). Missing data were accommodated by multiple imputation in Stata 10.0. This approach assumes that the data are missing at random; that is, their missingness can be modeled by observed variables (Allison, 2009). The viability of this assumption was bolstered by the inclusion of diverse control variables in imputation models. Following vonHippel (2007), we imputed independent but not dependent variables, although they were included in the models used to impute the other variables. Multiple imputation was conducted using the ICE command (Royston, 2007), which is based on a regression switching protocol using chained equations. Imputed values for missing observations were calculated drawing from the posterior predictive distribution. Five imputed datasets were generated. They were analyzed using the MIM prefix for regression analyses, which combines coefficients and standard errors across imputed data sets.

Results

The children of teenage mothers whose biological father lived with them throughout their first three years of life differed from other children of teenage mothers in several ways (Table 1). First, they were less likely to be black (31% vs 66%, $p < .001$) and more likely to be Hispanic (45% vs 17%, $p < .001$). Their mothers were slightly older at baseline (18.5 vs 18.1, $p < .01$), as were their fathers (22.5 vs 21.1, $p < .01$). Although the children of coresiders were more likely than other children to have one or more siblings (39% vs 25%, $p < .01$), it was notable that fully one-quarter of the nonresiders already had a child at the time of the focal child's birth. Mothers who coresided were significantly less likely to have been

born in the U.S. than mothers who did not coreside (89% vs 97%, $p < .01$). Interestingly, mothers who coresided had the same education and income:needs ratio as other mothers at baseline.

Mothers who coresided with the baby's father in the first three years of life reported lower parenting stress at child age 1 (2.1 vs 2.3, $p < .05$). Although coresiders appeared to have higher household income than nonresiders at this wave, the differential was not statistically significant. Coresident fathers were far more involved with their child's care than nonresident fathers (.83 vs .47, $p < .001$).

Bivariately, children differed only marginally on socioemotional outcomes at age 3 according to paternal coresidence. Children whose fathers coresided were marginally more likely to be securely attached to their mother (84% vs 74%, $p < .10$), and displayed marginally fewer externalizing problems (14.7 vs 16.3, $p < .10$). There were no bivariate differences in internalizing problems according to paternal coresidence.

Table 2 presents the results of the models regressing children's socioemotional outcomes at age 3 on paternal coresidence, first without (Model 1) and then with (Model 2) the three potential mediators at age 1. Both models include all controls presented above. The results of Model 1 show that the associations that emerged bivariately grew in strength once controls were added. Paternal coresidence from birth to age 3 increased the child's odds of secure attachment to the mother (OR = 2.41, SE = 1.02, $p < .05$) and predicted fewer externalizing problems ($b = -1.93$, SE = .96, $p < .05$) at age 3. Once the potential mediators were added in Model 2, the association between paternal coresidence and externalizing problems lost significance. However, the association between paternal coresidence and secure attachment grew even stronger (OR = 2.66, SE = 1.16, $p < .05$). None of the potential mediators – maternal parenting stress, paternal involvement, and household income – significantly predicted secure attachment status. Thus there was no evidence of even partial mediation of the association between paternal coresidence and secure child-mother attachment.

Model 2 showed that maternal parenting stress was the only one of the potential mediators that predicted externalizing problems ($b = 2.13$, SE = .58, $p < .001$). However, a Sobel test of whether maternal parenting stress mediated the association between paternal coresidence and externalizing problems was only marginally significant ($z = 1.67$, SE = .19, $p < .10$). Separate analyses (not shown) revealed that coresidence predicted lower maternal parenting stress with only marginal significance ($b = -.15$, SE = .08, $p < .10$).

The only evidence of mediation at the $p < .05$ level was found for paternal involvement with respect to internalizing problems. Notably, there was no evidence of a direct association between paternal coresidence and internalizing problems in Model 1. However, all three potential mediators significantly predicted internalizing problems. Specifically, greater maternal parenting stress predicted more internalizing problems ($b = 1.25$, SE = .42, $p < .01$), while greater paternal involvement predicted fewer internalizing problems ($b = -2.16$, SE = .92, $p < .05$). Household income also predicted fewer internalizing problems, but the coefficient was so small as to be equivalent to zero. Sobel tests revealed that paternal involvement alone mediated the association between paternal coresidence and internalizing problems ($z = 2.27$, SE = .33, $p < .05$). Thus it appeared that paternal involvement suppressed the association between paternal coresidence and internalizing problems in Model 1. Regression models (not shown) indicated that paternal coresidence was positively associated with paternal involvement ($b = .35$, SE = .04, $p < .001$). These results indicate that paternal coresidence increased paternal involvement, which in turn decreased

internalizing problems. The presence of mediation in the absence of a direct effect of coresidence on internalizing problems is discussed in detail below.

Discussion

Based on a sample of teenage mothers from multiple U.S. cities, the current study finds that biological fathers' continuous coresidence during the child's first three years of life was directly associated with greater odds of the child's secure attachment to his/her mother, and with fewer externalizing problems, at age 3. Paternal coresidence was also indirectly associated with fewer internalizing problems because of its link to greater paternal involvement. These findings enhance our knowledge base surrounding the living conditions that are most conducive to healthy development among children at risk because of young maternal age.

Despite past research indicating that the fathers of children born to teenage mothers have few educational and economic resources, we tentatively expected their coresidence to avert maternal parenting stress and signal greater paternal involvement in caregiving. In fact, fathers who coresided with their baby from birth to age 3 were far more involved in caregiving than fathers who did not. Further, mothers who coresided continuously with their baby's father had marginally lower parenting stress. However, they did not have significantly higher household incomes than other mothers. This is consistent with past research showing that the men who have children with teenage mothers have low earnings capacity (Elster et al., 1989; Jaffee et al., 2001; Pears et al., 2005). It is possible that the coresident couples in our sample could not, together, earn substantially more than the mother would have earned by herself, at least as of 1-year post-partum. However, it is also possible that many coresident couples had only one income by choice because the mother attended school or engaged in child care while the father worked.

Secure Child-Mother Attachment

The association between paternal coresidence and secure child-mother attachment was not mediated by paternal involvement, maternal parenting stress, or household income. Unlike internalizing and externalizing problems, secure attachment is specific to the child's relationship with the mother, and for that reason, different mediating processes may be expected. The literature on attachment suggests several possible processes that paternal coresidence may set in motion. Couples who coreside have less relationship conflict than couples who do not (Carlson & McLanahan, 2010), and marital conflict is associated with insecure child-mother attachment (Owen & Cox, 1997). Yet another possibility is that paternal coresidence increases the odds of a secure child-father attachment, and a secure attachment in one parental relationship may facilitate a secure attachment in the other.

It is also possible that the association between paternal coresidence and secure child-mother attachment is due to selection effects. Given that coresident parents score similarly on the sensitivity of their parenting behaviors (Martin, Ryan, & Brooks-Gunn, 2007), if coresident fathers score higher than nonresident fathers, as suggested by one previous study (Brophy-Herb, Gibbons, Omar, & Schiffman, 1999), then the mothers of their children may also score similarly high, which in turn increases the likelihood of secure mother-child attachment (De Wolff & van IJzendoorn, 1997). Further research is needed to test whether paternal coresidence affects mother-child attachment or is merely a proxy for sensitive maternal parenting.

Internalizing Behavior Problems

Results supported one significant indirect pathway from paternal coresidence during the child's first three years of life to socioemotional outcomes at age 3: Paternal involvement in the child's life at age 1 mediated the association between paternal coresidence and internalizing problems at age 3. This finding emerged despite the fact that there was no direct association between paternal coresidence and internalizing problems. Although Baron and Kenney (1986) posited that a necessary condition for mediation was that the independent variable (IV) directly predict the dependent variable (DV) in the absence of the mediator (M), other scholars have argued that such prediction is not evident in the case of "inconsistent mediation" or suppression (Shrout & Bolger, 2002; MacKinnon, Fairchild, & Fritz, 2007; MacKinnon, Krull, & Lockwood, 2000). In such a scenario, the direct effect of the IV on the DV, and the indirect effect via the M, have opposing signs. The direct effect of paternal coresidence on internalizing problems was positive, although non-significant, in the model controlling for mediators, while the indirect pathway through paternal involvement was negative. Specifically, paternal coresidence was positively associated with paternal involvement, which in turn was negatively associated with internalizing problems.

The association we find between maternal parenting stress and child internalizing problems is consistent with past research (Anthony et al., 2005; Deater-Deckard, 1998; Hart & Kelley, 2006). It is thought that mothers with more parenting stress engage in less sensitive parenting behaviors and model less effective emotional regulation strategies for children. Contrary to expectation, paternal coresidence was only marginally associated with lower maternal parenting stress. A previous study of teenage mothers found that decreasing paternal involvement in the child's first few years of life predicted greater maternal parenting stress, but consistently low involvement did not (Kalil et al., 2005). Perhaps mothers who never coreside with the father experience lower parenting stress than those who once lived with him but no longer do so, as the latter must cope with a breakup as well as a reorganization of household responsibilities.

Externalizing Behavior Problems

Paternal coresidence from birth to age 3 predicted fewer externalizing behavior problems. Maternal parenting stress predicted more externalizing problems, but it only marginally mediated the association between paternal coresidence and externalizing problems, likely because the link from paternal coresidence to maternal parenting stress was marginally significant.

Paternal involvement predicted fewer internalizing but not externalizing problems, suggesting that anxiety may have been the predominant emotion experienced by the children of nonresident fathers. One cause for anxiety may have been the instability in family structure, given the high proportion of fathers who were coded as nonresident but nevertheless lived with the mother and child at one or two waves between birth and age 3. According to the emotional security hypothesis (Cummings & Davies, 1996; Forman & Davies, 2003), the entries and exits of a father-figure from the household cause young children to perceive their family as unpredictable and unsafe. This lack of confidence may eventually result in acting-out behaviors, but is manifested most directly in worry about the future. Such an explanation is consistent with our finding that the children of nonresident fathers were less likely to be securely attached with their mother than the children of coresident fathers.

Limitations and Future Directions

The findings of the current study should be interpreted in light of its limitations. First, no information was available on the status of the child-father attachment. Ideally, we would

have tested whether paternal coresidence was associated with the child's secure attachment to the father, as well as with the mother. Still better would have been the availability of data on actual parenting behaviors. Future studies may be able to test whether fathers' sensitive parenting plays a role in the link from paternal coresidence to child socioemotional development – either as an as-yet unhypothesized mediator or as a confounder of one of the already hypothesized mediators.

Although the study's sample size was larger than many community-based samples of teenage mothers, it was not large enough to permit distinctions among the living arrangements of children whose father did not coreside. One particularly interesting contrast would have been children whose father coresided versus children who lived with their maternal grandmother. Past research shows that the latter living arrangement is associated with an increase in teenage mothers' education but less optimal child outcomes (Black et al., 2002; Gordon, Chase-Lansdale, & Brooks-Gunn, 2004; Sandfort & Hill, 1996). Another informative contrast would have been children who lived with their biological father versus children who lived with a social father, which would have distinguished the effects of paternal involvement from those of biological relatedness.

A limitation of this study was that its measure of parenting stress consisted of only four items. However, the construct validity of this measure is suggested by its past associations with transitions in family structure and maternal dating relationships (Beck, Cooper, McLanahan, & Brooks-Gunn, 2010; Cooper, McLanahan, Meadows, & Brooks-Gunn, 2009).

It bears noting that the current study examined the continuous coresidence of children's biological fathers during the first three years of life. A substantial portion of fathers in our sample coresided at only one or two timepoints. Given that family instability predicts young children's behavior problems (Ackerman, D'Eramo, Umylny, Schultz, & Izard, 2001; Cooper, Osborne, Beck, & McLanahan, 2011), it is likely that fathers' inconsistent coresidence does not yield similar associations with child socioemotional development as consistent coresidence does. Only one-fifth of the children in our sample were exposed to continuous paternal coresidence in the first three years of life.

It is notable that 76% of the teenage mothers in our sample were classified as having a secure attachment with their child. According to Emery et al., (2008), past studies of *infants* of teenage mothers have found, on average, that 41% were securely attached. Similarly, in a community-based sample of teenage mothers, 41% of children were securely attached at age 5 (Lounds, Borkowski, Whitman, Maxwell, & Weed, 2005). It is unclear whether the high rate of secure attachment in our sample is attributable to the use of a Q-sort as opposed to the Strange Situation, or to the mother instead of an observer as the performer of the Q-sort. Further research on the attachment status of toddlers born to teenage mothers is needed.

Last, our failure to find mediation of the associations between paternal coresidence and secure attachment to mother and externalizing problems suggests that they may be driven by selection. Coresident couples tended to be older than nonresident couples, and they may well have differed on unmeasured characteristics that influence both living arrangement and child wellbeing. For example, fathers who coresided may have had better conflict resolution skills, which both fortified their relationship with the baby's mother and served as a role model for the child. Yet even if a non-trivial amount of the association between paternal coresidence and child outcomes reflects selection, there may still be a causal component. That is, fathers with the qualities and resources most beneficial for children may be most likely to coreside, but coresidence itself may also have causal effects because children and

mothers are continuously exposed to those qualities and resources. Future studies should attempt to identify additional candidates for mediation.

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Table 1

Children of teenage mothers according to whether their biological father coresided continuously during their first three years of life

	Coresided (<i>n</i> = 102)		Did not coreside (<i>n</i> = 407)	
	<i>n</i> (%)	<i>M</i> (SD)	<i>n</i> (%)	<i>M</i> (SD)
Controls, baseline				
White	21 (21%)		57 (14%)	
Black	32 (31%)	***	269 (66%)	
Hispanic	46 (45%)	***	69 (17%)	
Other race/ethnicity	3 (3%)		8 (2%)	
Male	54 (53%)		228 (56%)	
Mother graduated HS	43 (42%)		163 (40%)	
Income:needs		1.7 (.16)		1.5 (.07)
Maternal age		18.5 (.09) **		18.1 (.05)
Paternal age		22.5 (.40) **		21.1 (.17)
Mother has other children	40 (39%)	**	102 (25%)	
Month mother started prenatal care		2.7 (.16)		2.8 (.09)
Mother born in US	91 (89%)	**	395 (97%)	
Mediators, age 1				
Maternal parenting stress		2.1 (.06) *		2.3 (.03)
Paternal involvement		0.83 (.01) ***		0.47 (.02)
Household income		24,834 (2,143)		20,824 (1,129)
Outcomes, age 3				
Secure attachment	86 (84%)	†	301 (74%)	
Internalizing problems		9.8 (.56)		10.6 (.32)
Externalizing problems		14.7 (.72) †		16.3 (.40)

Note. Estimates are based on five multiply imputed data sets.

† $p < .10$;

* $p < .05$;

** $p < .01$;

*** $p < .001$

Table 2

Regression of outcomes at age 3 on biological fathers' coresidence in the first three years of life

	Secure attachment		Internalizing problems		Externalizing problems	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Paternal coresidence	2.41 [*] (.102)	2.66 [*] (.116)	-0.99 (.78)	0.04 (.82)	-1.93 [*] (.96)	-1.01 (.102)
Black	0.90 (.33)	0.94 (.36)	0.69 (.82)	0.29 (.81)	-0.35 (1.07)	-0.56 (1.06)
Hispanic	0.64 (.30)	0.64 (.30)	1.00 (.95)	0.68 (.93)	0.12 (1.28)	0.04 (1.27)
Other race/ethnicity	0.78 (.66)	.86 (.72)	1.21 (1.90)	0.85 (1.86)	2.45 (2.42)	2.01 (2.38)
Child male	0.61 [*] (.15)	.63 (.15)	-0.11 (.57)	-0.35 (.56)	0.99 (.77)	0.83 (.76)
Mother graduated HS	1.57 (.42)	1.46 (.41)	-1.29 [*] (.62)	-0.97 (.62)	0.14 (.78)	0.50 (.78)
Income:needs, baseline	0.95 (.08)	0.93 (.08)	-0.25 (.21)	-0.03 (.22)	-0.23 (.26)	-0.12 (.27)
Maternal age	1.03 (.12)	1.04 (.13)	-0.36 (.32)	-0.35 (.31)	-0.52 (.40)	-0.51 (.39)
Paternal age	1.03 (.04)	1.02 (.04)	0.07 (.08)	0.04 (.08)	0.06 (.10)	0.05 (.10)
Other children	0.73 (.19)	0.75 (.20)	1.26	1.15 [†] (.67)	2.34 [*] (.92)	2.20 [*] (.90)
Month prenatal care	1.09 (.08)	1.09 (.08)	-0.09 (.17)	-0.18 (.17)	-0.17 (.21)	-0.26 (.21)
Mother born in US	2.02 (1.16)	2.10 (1.19)	-0.72 (1.47)	-0.79 (1.44)	1.38 (1.90)	1.34 (1.86)
Maternal parenting stress, age 1		0.79 (.14)		1.25 ^{**} (.42)		2.13 ^{***} (.58)
Paternal involvement, age 1		0.69 (.25)		-2.16 [*] (.92)		-1.65 (1.21)
Household income, age 1		1.00 (.00)		-0.00 [*] (.00)		-0.00 (.00)

Note. Table presents odds ratios (SEs) for secure attachment and unstandardized coefficients (SEs) for internalizing and externalizing problems. Estimates are based on five multiply imputed data sets.

[†] p < .10;

* p < .05;

** p < .01;

*** p < .001.