DOES MATERNAL MULTIPARTNERED FERTILITY AFFECT

THE MOTHER-CHILD RELATIONSHIP?

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Abstract

Multipartnered fertility (MPF) is widely considered detrimental to families and children, yet the mechanisms by which MPF may affect well-being are unclear. One possibility is that due to higher instability and greater complexity within MPF families, children with half-siblings may have weaker mother-child relationships compared to children with only full siblings. Using data from the National Longitudinal Survey of Youth 1979 (NLSY) and drawing from both mother's and children's reports (n=1,975), we compare the perceptions of firstborn children from MPF and single-partner fertility homes regarding how much their mothers monitor them, how close they feel to their mother, how much they share with their mother, and how often they perceive their mother missing important events. Descriptive findings indicate significant negative associations between MPF and relationship quality, but in multivariate models that account for accumulating disadvantages among families, the association between MPF and parenting is largely insignificant or reverses in direction.

Multipartnered fertility, half-siblings, family-formation, parenting, parent-child relationships, monitoring

Having children with more than one person, also known as multipartnered fertility or "MPF", has emerged as an important topic of family research – and a growing area of social concern. Though MPF is not a new phenomenon, today's MPF results from fairly complicated family behaviors. During most of the 20th century, MPF occurred when a married parent divorced or became widowed, remarried, and had children with someone new (Logan, Manlove, Irkamullah, & Cottingham, 2006), leading to the creation of stepfamilies (Sweeney, 2010). More recently, the behaviors leading to MPF are expanding beyond patterns of remarriage to incorporate nonmarital births across a series of short and unstable relationships that frequently do not result in either marital or cohabiting stepfamilies (Dorius and Guzzo, 2013). It is widely assumed, both as a reflection and a consequence of these changes, that MPF is detrimental for family and child well-being (Klerman, 2007). However, only a few studies have directly examined whether MPF is linked to child well-being. These studies generally find that well-being is lower when children have half-siblings than when they do not have half-siblings (Halpern-Meekin and Tach, 2008; Tillman, 2008), and this is true even when accounting for a history of family instability (Dorius and Guzzo, 2013; Fomby and Osborne, 2013). The mechanisms linking MPF to child outcomes have yet to be established.

At the broadest level, though, we know that the family relationships that accompany MPF are less formal, more ambiguous, and more complex relative to those in simpler families. For instance, fathers often reduce visitation and child support to nonresidential children from prior relationships when they have children in new relationships (Manning and Smock, 1999, 2000). Even when the romantic relationship between parents is intact, co-parenting relationships are weaker and less supportive when parents have children with other partners relative to those with only shared children (Carlson and Furstenberg, 2006). MPF also seems to reduce the

psychosocial resources available to parents – parents with MPF report lower access to instrumental support from kin (Harknett and Knab, 2007) and increased depression (Turney and Carlson, 2011; Bronte-Tinkew, Horowitz, and Scott, 2009).   MPF, then, indirectly affects child well-being by increasing the risk of these more problematic aspects of parenting, but research has yet to fully examine whether there is a more direct mechanism between MPF and child well-being.

In the current research, we focus on a potential direct mechanism: the mother-child relationship. Specifically, we investigate whether mother's parenting quality, as perceived by their oldest child, differs among those with and without maternal MPF (i.e., among adolescents with only younger full siblings and those with at least one younger half-sibling through their mother). We use the National Longitudinal Survey of Youth 1979 (NLSY79), drawing from both the mothers' and children's reports. We compare the perceptions of firstborn children whose mother has MPF to those whose mother has single-partner fertility (SPF) regarding how much their mothers monitor who they spend time with, how close they feel toward and how much they share with their mother, and how often they perceive their mother missing important events. The NLSY contains a rich set of maternal background factors and childhood experiences as well as information about family structure and transitions that enable us to more carefully isolate how MPF is associated with parent-child relationship quality beyond selection, socioeconomic, and instability factors.

Family Functioning in Complex Families

Clearly, parents and parenting behaviors – how parents treat a child, the ways parents interact with their children, and the like – have strong influences on child well-being and child outcomes (Amato, 2005). For instance, adolescents who report a close relationship with their

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parents and perceive their parents as supportive and involved in their lives have better mental health and fewer acts of delinquency (Hair et al., 2008). As noted by Amato (2005), parenting quality is an excellent predictor of children's emotional and social well-being, and poor parenting has been tied to a variety of negative outcomes such as poor academic achievement, emotional problems, externalizing problems, and low self-esteem.

Parenting behaviors and the parent-child relationship vary according to children's developmental needs (Kalil, Ryan, and Corey, 2012), but they also vary across parental and family characteristics. For instance, there are differences in parenting behaviors across socioeconomic and demographic characteristics such as parental gender (Craig, 2006; Sayer, Bianchi, and Robinson, 2004), family social class (Kalil, Ryan, and Corey, 2012; Lareau 2003), and family size and birth order (Cáceres-Delpiano, 2006; Downey, 1995; Price, 2008; Steelman, Powell, Werum, and Carter, 2002). There is also a large, and growing, literature linking family structure and stability to parenting behaviors, drawing explicitly or implicitly from family stress (McCubbin and Patterson, 1983) and family systems (Cox and Pasley, 1997) theories.

Family systems theory presents families as a set of interdependent, interlocking web of relationships within a larger hierarchy (Cox and Pasley, 1997). Within a family, then, each individual member is in part defined by their relationship to every other member in the household, with clear boundaries that help structure and guide behavior and interaction. MPF families, by definition, experience changes in the family system when parents' union dissolves, when parents repartner, and when parents have additional children in new partnerships. The linkages between family and household members, even between parents and children, becomes less clear and stable, and the reorganization of the family system affects multiple levels of the family, with feedback loops as interpersonal relationships adapt to the new system (Cox and

Pasley, 1997). Family stress theory (McCubbin and Patterson, 1983) similarly focuses on how well families function overall and how well individual members of the family relate to one another and perform family-related behaviors like parenting. The emphasis in family stress theory, though, is more explicitly on things that alter the form and function of the family, suggesting that changes—even positive ones—create stress within a family, in part because they contribute to boundary ambiguity (Boss and Greenberg, 1984). Members of a family in flux – through relationship dissolution and repartnering as well as through the entrance of new children – have to draw upon their individual and family resources and coping strategies to adapt to family changes. In the short-term, though, both theories would predict that parents' ability to perform their parenting duties adequately (i.e., maintain positive relationships with their children, attend their activities, and so on) is reduced during times of family stress and change (Boss, 1980). Research supports this notion, finding that parenting quality declines after union dissolution and is lower among single parents (Amato, 2005).

MPF and Parenting

How does this relate to MPF? We argue that parents with MPF are, to some extent, doubly disadvantaged. First, compared to their peers with children by only one partner, parents with MPF experience higher levels of boundary ambiguity in new partnerships, face more stressors over time, and receive less instrumental support (Dorius, 2012). These factors, in turn, are linked to greater parental stress and poorer parenting; for instance, mothers who experience more union transitions exhibit more stress and harsher parenting than those with fewer union transitions (Beck, Cooper, McLanahan, and Brooks-Gunn, 2010). In MPF families, then, family change and within-family stress is more often a chronic issue, rather than an acute issue which dissipates over time, and this suggests that families with MPF may have poorer parenting

behaviors. Moreover, we argue that these factors (ongoing stressors, more ambiguous relationships, and less support) are particularly consequential for mothers' behavior, as they usually retain primary physical custody of their children and thus have to figure out how to incorporate new (often residential) family members and renegotiate parent-child relationships on a day-to-day basis. These factors are also most strongly felt by the oldest child. MPF families have larger families, on average, and children display greater age differences (Dorius, 2012), and these more "structural" or logistical factors may also impact how the oldest child perceives their mother's parenting behavior. To the extent that the direct demands of parenting are higher for younger children, older children may feel forced to become more independent, may more strongly feel as if they have to "share" their parent, and or may also feel burdened by responsibilities to care for younger siblings.

Second, not only do mothers with MPF seem to have more family stress and thus the potential to have poorer mother-child relationships, but they also have fewer resources to deal with these stressors (Fomby and Osborne, 2013). Although there are different types of resources, we suggest that these fall generally into two categories: psychosocial resources (such as maternal depression or a strong co-parental relationship) and socioeconomic resources. Depression, for instance, is linked to less favorable maternal behaviors (Lovejoy, Graczyyk, O'Hare, and Neuman, 2000), and mental health is poorer among mothers with children by multiple partners than those with only single-partner fertility (Turney and Carlson, 2011; Dorius, 2012). Mothers report lower co-parental relationship quality, even in intact relationships, when they or their partner have a child from a past relationship (Carlson and Furstenberg, 2006), and father involvement is lower in families with MPF (Bronte-Tinkew, Horowitz, and Scott, 2009). Better co-parenting relationships and higher father involvement, in turn, are linked to lower

maternal stress and higher-quality mother-child relationships (Cooper, McLanahan, Meadows, and Brooks-Gunn, 2009; Dorsey, Forehand, and Brody, 2007). In addition to lower support from their child's biological father, women with MPF seem to have lower social support from family and friends. Compared to women whose children are with only one partner, women with children by two or more partners perceive lower levels of support from family and friends (Harknett and Knab, 2007). Mothers with children by different partners lack the same level of access to kin-based childcare, which provides a much needed parenting break (Monte, 2011), and thus may leave MPF women unable to 'recharge' parenting energies from day to day, leading to lower levels of parent-child relationship quality. Together, fewer psychosocial resources among mothers with MPF relative to their peers would suggest poorer a weaker mother-child relationship, although our current analysis is unable to directly control for psychosocial resources.

Mothers with MPF likely also have fewer socioeconomic resources to help them cope with the higher levels of stress. In general, more advantaged mothers spend more time with their children and monitor them more closely (Lareau, 2003; Kalil, Ryan, and Corey, 2012). Higher levels of education, more financial resources, and more stable living arrangements make it easier to adhere to middle-class standards of the highly involved parent. Conversely, less advantaged mothers may subscribe to a different notion of "good parenting" (Lareau, 2003) that entails less oversight and direct engagement with their children. And even if they do want to be highly involved in their children's lives, financial and employment conditions may make it difficult to be fully present.

In sum, we hypothesize that compared to peers with only full siblings, firstborn children with half-siblings will report lower levels of maternal monitoring, report higher levels of

maternal absence regarding important events and activities, and report lower feelings of closeness and sharing with their mother than those with only full siblings. We use the children's reports of maternal behaviors and the parent-child relationship because it is likely that the child's *perceptions* of mothering and their relationship with their mother would ultimately be most influential in understanding child well-being.

We also explore the possibility that the effects of MPF on parenting behavior are not uniform. That is, although we hypothesize that MPF is generally detrimental for maternal behaviors, it may be the case that MPF is more consequential for families who face early and persistent disadvantage that may exacerbate differences in parenting over time. For example, if a father is not coresiding with the mother at the time of the first child's birth, there are fewer financial and psychological resources to draw upon when needed, finding a future marital partner is more difficult for single mothers, and there is often a weaker social and economic link between father and child (Manning & Smock, 2000), all of which may lead these fragile families to experience heightened ambiguity and stress, and lower levels of social and instrumental support (Harknett & Knab, 2007; Monte, 2011). Further, if a mother has less than a high school education at the time of her first child's birth, she may be undervalued in future job and marriage markets, both of which might limit opportunities for additional resources of money, time, or support needed for positive parenting. On the other hand, it is possible that MPF may affect the more advantaged more strongly, if the stressors added by MPF are somehow *more* stressful because they are less common. For instance, higher levels of MPF among minorities (and thus reduced stigma) and a broader, more fluid notion of family and kinship may offset the negative effects of MPF on parenting among minorities, akin to other work showing that family instability and structure is less consequential for blacks than whites (Fomby and Cherlin, 2007).

We utilize 24 waves (1979-2010) of nationally representative data from the 1979 National Longitudinal Survey of Youth main youth interviews and 9 waves (1994-2010) of the child and young adult (NLSY79-C and NLSY79-YA) surveys. Born between 1957 and 1965, main youth respondents are drawn from the later Baby Boom Generation who entered young adulthood in the late 1970s and early 1980s when cohabitation and nonmarital childbearing were increasing and multipartnered fertility was likely on the rise (Guzzo & Furstenberg, 2007). These NLSY79 respondents have been interviewed every year from 1979 through 1994 and biennially thereafter.

At each survey wave, the mothers in our sample were asked questions regarding their union and fertility experiences and their current household composition (which allowed for the assessment of cohabitation prior to the first direct survey questions in 1990), and NLS provided a unique ID number for each of the mother's partners which were maintained for every year the man was in the household. As a result, it is possible to triangulate information and identify birth fathers, assess whether multipartnered fertility occurred, and document the individual events of instability (e.g. marriage and cohabitation starts), as well as cumulative counts of instability (e.g., the total number of union dissolutions and formations over a period of time). This coding strategy allowed us to quantify a number of important family characteristics, including the residential status of the biological and step fathers at the time of birth and again at age 14.

Our analytic sample consists of firstborn children who were raised by their mothers, have at least one other sibling, and answered the parenting questions asked of 10-14 year olds in the Child Supplement. Given our research focus on MPF, it is important to consider the unique experiences of firstborn children who likely have greater exposure to family instability than their younger siblings. In particular, a firstborn child's mother must break up with their birth father,

find a new partner and have at least one more child with someone new to be categorized as having MPF, while a more recently born sibling may experience little of this instability sequence and may even be raised by a biological father and mother. We further limit our analyses to families with two or more children to ensure that the counterfactual to MPF is accurate and intuitive; otherwise, all children whose mothers have multipartnered fertility have at least one sibling, but not all children whose mother have single-partnered fertility have siblings. Thus, we are comparing firstborn adolescents who have at least one half-sibling to firstborn adolescents who have only full siblings. Because of our outcome of interest regards the mother-child relationship, it is important to restrict the sample to children who lived with their mothers for a majority of childhood (at least 75% of the time from birth to age 10), so they have actually experienced the family instability and parenting behaviors in question. Finally, we include only those children who provided valid responses to parenting questions assessed from ages 10 to 14. Because our sample selection criteria reduces the number of older children and earlier/younger mothers (the earliest mothers gave birth to children who turned 14 before the parenting assessments began in 1992 so they did not have a chance to answer questions on mother-child relationship quality), and it excludes those with the less traditional living arrangements (those who live with someone other than their mothers), our analytic sample has slightly lower rates of instability and MPF than has been found among all women of the NLSY79 cohort (Dorius, 2012). The final sample includes 1,975 firstborn children aged 10 to 14 at the time of their assessment.

Measures

Children's perceptions of mothering and the mother-child relationship These measures were asked of individuals aged 10-14; depending on survey participation and how the child's age

corresponded with survey dates, children answered these questions between one and three times. Self-reported assessments were created by pooling the biennial children's data from 1992-2010 and isolating the survey from the year closest to the child's 14th birthday to maximize the number of children who have experienced maternal multipartnered fertility. Maternal monitoring is derived from the question "About how often does your mother know who you are with when you're not at home?" with answers of 1 "hardly ever," 2 "some of the time," and 3 "often." The child's perceptions of their mother's involvement in important life events is measured by the responses to the question "How often does your mother miss the events or activities that are important to you?" with responses of 1 "she misses events a lot," 2 "she sometimes misses events," and 3 "she almost never misses events." Closeness is based on the question "How close do you feel to your mother?" with responses ranging from 1 (*not very close*) to 4 (*extremely close*). The child's perception of whether they can discuss their lives with their mother is derived from the question "How well do you and your mother share ideas or talk about things that really matter?" with responses ranging from 1 (*not very well*) to 4 (*extremely well*). All variables have been recoded such that higher scores represent more positive maternal behaviors and mother-child relationship quality. We explored factor analysis to see if the measures fit together to create a global indicator of mother-child relationship quality, but the results did not support this approach and so we will assess each outcome separately in our models.

Multipartnered Fertility and Family Instability. Multipartnered fertility status is a dichotomous indicator of whether a woman has ever had children by two or more fathers. It was measured by creating a detailed relationship history for each woman from 1979-2010 and noting when births occurred within relationships to identify unique birth fathers. By triangulating data from the women's self-reports (NLSY79), the biological children's self-reports (NLSY79-YA), and the

household roster for each year, multipartnered fertility was ascertained for all women in the sample, including those in non-residential relationships at the time of birth.

To test whether multipartnered fertility matters net of family instability generally, we explore the cumulative effect of family structure instability by counting the total number of family transitions (e.g., maternal coresidential union dissolutions and formations) the child experienced from birth to age 10. Note that we do not count as a transition the marriage of cohabiting biological parents; a child is unlikely to experience that as instability (see Manning, Smock, and Majumdar 2004). The scale of cumulative family structure transitions originally ranged from 0-10, but was truncated at 5 due to the small number of individuals in the upper range (less than 3%). We explored categorical versions of the number of transitions to consider whether the number of transitions affected outcomes in a nonlinear fashion, but there was little evidence to suggest this was the case, and so we keep the measure as a simple linear count variable.

We also tap into early family structure with measures of father residence at the time of birth (1= "biological father was either married to or cohabiting with the mother at the time of first child's birth"; 0="mother was single at time of birth"). To assess family structure at age 14 (or time of last report from ages 10 to 14), family structure was constructed as three indicators: the mother was single, a step father was living in the home, or the biological father was living in the home (reference).

Mother's background factors and characteristics at the time birth. Maternal background factors include immigrant status (1= immigrant) and whether the mother herself lived with both biological parents through age 14 (1=lived with both parents); we do not include maternal race-ethnicity as it is highly correlated with child race-ethnicity.

Characteristics at the time of first birth include whether the mother was a teenager (1= maternal age 19 or younger), whether the mother had completed high school (1= less than high school degree), whether she was living in poverty (1=family income below federal poverty line), and whether she was living with the child's biological father (1= dad not resident).

Children's experiences from birth to age 10. In addition to the family structure changes described previously, we address issues of race, gender, age, family size, birth gap, exposure to poverty, maternal employment and education, and urbanity of residence to shed light on the context of childhood and provide an overview of the resources and constraints faced by the children in our sample. Race-ethnicity is derived the child's reports of whether they self-identified as Hispanic, Black or African American, or non-Hispanic White (reference), and we also include child gender (1=female; 0=male). Although we take the dependent variables from the report closest to age 14, some of the respondent's closest survey was at age 10, and since parent-child relationships often change during adolescence, we include a control for child's age at the time of the interview (in years). Family size is a continuous measure of the number of full- or half- biological younger siblings born to the mother by the time of the child's tenth birthday (0 to 11). Because time for parenting might be particularly influenced by the presence of a very young sibling, the number of months from the first child's birth to the last child's birth is included. As time spent with children and missing activities could be affected by employment schedules, we include a measure of the proportion of time the mother was unemployed throughout childhood (measured as the total number of years the mother worked an average of 1 to 40 hours a week during the last calendar year divided by the total number of years assessed). Given that adolescents may have more opportunities to do things outside of parental supervision in urban areas, we also include the proportion of childhood residing in an urban place (measured

as the total number of years the mother reported living in an urban residence divided by the number of years assessed). Note that for all proportions, missing values do not add additional years to the denominator.

Interactions. Because we have hypothesized that MPF may not work the same for all groups, and that early disadvantages might accumulate over time, we created five interactions to test whether the association between MPF and our parenting outcomes is stronger when MPF is linked to early disadvantage, particular racial or ethnic groups or child gender (possibly reflecting exposure to discrimination). Each of these items were drawn from the characteristics of the mother and child evident at birth and include: MPF x race, MPF x gender, MPF x education at birth is less than high school, and MPB x father was not coresident at birth.

Data modifications. Given our sample selection strategy, the pooling of data across waves, and the high response rate among the sample respondents, there was little missing data for our covariates, however, to maximize sample size and address the missingness that did exist, we employed Stata 13's multivariate normal imputation technique to impute missing values where appropriate. The multiple imputation process created five imputed data sets that are were modeled simultaneously to increase the accuracy of the parameter estimates and correct the standard errors in our ordered logistic regressions. Sensitivity analyses suggest the results were consistent across non-imputed and imputed models. Additionally, because the original sampling design relied on multiple reporters within households, the NLSY-C sample includes some related family members (cousins) which may lead to inflated standard errors. To address this, our multivariate models are clustered to account for shared variance among families. Finally, to reduce colinearity and provide a meaningful reference string, all continuous measures were mean-centered in our multivariate models, including the child's age at the time of the interview,

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number of siblings, gap between oldest and youngest child, cumulative transitions, and the two proportion variables. As a result, the intercepts in our models reflect the value of parenting when each of these items are held constant at their mean. Building on this, we entered dummy variables and reference groups so that the base category (a.k.a. reference string or omitted cell) reflects the most advantaged members of our sample, in this case: white males whose mother's lived with both of their biological parents, were native to the US, were not teen mothers, had more than a HS degree and lived above the poverty line at the time of birth with the biological father, and at the time of the last assessment, the biological father remained in the home. As a result, the odds ratios presented in Tables 2 and 3 describe the contrasting experience of exposure to disadvantage with the most advantaged group, holding all else constant.

Analysis Plan

Our analyses are divided into three parts. The first stage provides a descriptive examination of firstborn children's reports of maternal behaviors and the mother-child relationship a by MPF status using weighted, nonimputed data. The second stage of analysis employs nested ordered logistic regression models to predict the association between multipartnered fertility and mother-child relationship quality net of a rich array of controls. We present three models for each of the four independent variables. The first is a nearly-full model that excludes family instability, the second is a full model that includes family instability, and the third presents the full model with instability plus interactions. There has been some concern that MPF is little more than a proxy for instability, and modeling MPF along with a count of cumulative instability and maternal relationship status at age 14 may be over-controlling for family structure and potentially masking the true effects of MPF in the models. To address this concern in as transparent way as possible,

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we provide the results with and without instability measures. Further, because we anticipate that the effect of MPF might vary across measures of race/ethnicity, gender, socioeconomic status, and parental union characteristics, we test and present four interactions for each outcome, including those that were insignificant in the final models. The third component of our analytic plan is to graph the predicted probabilities for our interactions; because the dependent variables are ordered categories, we present the predicted probabilities of being in the highest (i.e., most positive parent-child relationship) category relative to being in the lowest category. It should be noted that the predicted probabilities are based on partial regression coefficients for a dummy x dummy interaction. This means that the multivariate results describe the odds of a positive parenting outcome after taking into account all of the explanatory variables in the full model. Because the reference string equals the base item (0) for each categorical or dummy variable in the model, and we are interacting two dummy variables (0,1 x 0,1), the contrast group (0,0) for two dichotomies (such as MPF x Female or MPF * Education) is equal to the reference string for the entire model. This means that when we make multiple contrasts between dummy x dummy interactions based on the same model results, our comparison groups will have identical predicted probabilities because they share a reference string (in this case, they share the common characteristics of advantage that are compared to specific examples of disadvantage or possible discrimination).

<div align="center">RESULTS</div>

<div align="center">*Descriptive Results*</div>

Table 1 presents the weighted descriptive statistics for the analytical sample of the children of the NLSY79 with at least one sibling. We present first the overall sample characteristics and then separately by single-partner fertility (SPF) and multipartnered fertility

(MPF) status. In the analytical sample, about a fifth of the full sample of adolescents have a mother with MPF; that is, they have at least one younger half-sibling (recall the focal child is the firstborn). When looking across the four measures of mother-child relationship quality, most adolescents report strong relationships with their mother. The majority (84%) report that their mother often knows who they are with and almost never misses important events (67%). Most (88%) feel quite or extremely close to their mother, and over three-fourths (77%) say they share ideas quite or extremely well with their mother.

– Table 1 here –

The mothers in our sample come from fairly advantaged backgrounds, with most women reporting living with two biological parents during childhood (75%) At the time of their first birth (the focal child's birth), the vast majority were twenty years old or older, had finished high school, were living above the poverty line, and were in a residential relationship with the child's biological father. Their children—the adolescents in our sample—are primarily white (81% White non-Hispanic, 13% African American or Black non-Hispanic, and 7% Hispanic), female (50%), and about 13 years of age (range10-14), and have, on average, 1 or 2 younger siblings (range 1 to 7), spent roughly three-quarters of their childhood with an employed mother and living in an urban area. The adolescents experienced, on average, less than one family structure transition by the time of the interview (range 0 to 4). The majority of focal children were living with a step (17%) or biological (64%) father at the time of the final survey, though about one-fifth (19%) reported being in a single-mother home.

Turning to the next two columns, we see that the adolescent's perception of mother-child relationship quality, maternal background, childhood and family characteristics, and experiences of maternal family formation/dissolution behaviors varies between adolescents who have only

full siblings and those who have half-siblings. Compared to their peers with only full siblings, adolescents with half-siblings less frequently reported that their mother often knew who they were with (77% MPF vs. 86% SPF), less frequently reported that their mother almost never missed important events (49% MPF vs. 71% SPF), less frequently characterized their relationship with their mother as quite or extremely close (82% MPF vs. 90% SPF), and less frequently reported that they shared ideas quite or extremely well with their mothers (68% MPF vs. 79% SPF).

As shown in other work, families with MPF are more disadvantaged than those with SPF. This disadvantage is evident from birth – when the focal child was born, far more MPF mothers were teenagers, had no high school degree, were living in poverty, and were not living with the child's father relative to their SPF counterparts. MPF is strongly tied to race in this sample, with 87% of children born to SPF mothers self-reporting as White non-Hispanic compared with 59% of children born to MPF mothers. Adolescents in MPF families have slightly more siblings, and they experienced far more transitions in family structure than their peers, an average of 1.73 transitions by the time of the interview compared to an average of only 0.6 for adolescents in SPF families.

Multivariate Results

The bivariate results demonstrate that adolescents whose mothers have children with more than one partner – and thus the adolescents have at least one younger half-sibling – report generally poorer relationship quality with their mothers. However, Table 1 also illustrates that MPF families are more disadvantaged and experience more transitions in family structure than SPF families, which may account for the association between MPF and mother-child relationship quality. To disentangle these linkages, we turn to the multivariate models presented in Tables 2

and 3. These provide the odds ratios of ordered logistic regressions for each of the four relationship quality measures. The first model contains most of the key covariates (minus instability and interactions), the second model adds instability items, and the third incorporate interactions between MPF status and certain socioeconomic and family characteristics. All of the dependent variables are coded so that more positive ratings of the mother-child relationship are indicated by higher values. Thus, an odds ratio below 1.0 indicates poorer relationship quality and odds ratios above 1.0 indicate better relationship quality.

– Table 2 here –

– Figure 1 here –

Looking first at Models 1 and 2 for maternal monitoring, MPF is significantly and negatively associated monitoring (OR = 0.616 and 0.697), even in the presence of a rich set of controls. The results also show, perhaps not surprisingly, that mothers who were raised in homes without two biological parents provide less monitoring, that girls are significantly more likely to report monitoring by their mothers, and that maternal monitoring declines as children age. In Model 3, however, we see that MPF does not have a uniform main-effect on monitoring. Instead, the interaction of MPF and father coresidence at birth have a significant effect. To explore this further, we consider the graphing of predicted probabilities taken from this table and depicted in Figure 1. As shown, when fathers are present at the time of birth, SPF women provide more monitoring than MPF women. However, when fathers are not present at birth (as is the case in almost 50% of MPF families in this sample), MPF mothers report the highest level of monitoring compared with all other groups. These results suggest that once early life characteristics and family instability are accounted for, the negative relationship between MPF and monitoring reverses. This is potentially good news for MPF families, who experience

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singlehood at first birth more often than other families, and who appear to be resilient to long-term negative effects of father absence on this measure of positive parenting.

The next three columns in Table 2 show the results for missing important events. As with monitoring, MPF is directly associated with missing more events; that is, adolescents with half-siblings are more likely than those with only full siblings to report that their mother misses events a lot compared to almost never. This relationship becomes insignificant when family instability is included in the model, likely driven by the count of instability, which is significantly linked to missing more events. However, once interactions are included, the magnitude and significance of the odds ratio for MPF becomes larger once again – and the interactions between MPF and education at birth; MPF and race/ethnicity; and MPF and gender are all significant. We turn to Figure 2 to visualize each of these relationships. Relative to Whites, African American mothers miss more events, but within this racial/ethnic group, MPF mothers are more likely to attend important events. Among White mothers, those with MPF are less likely to attend important events than SPF mothers. Looking at the panel on gender, SPF mothers attend more events overall, and daughters are much more likely to report their mothers attending important events relative to sons. In terms of education at birth, we see a similar pattern as we do with race in Figure 2 and father presence in Figure 1; that is, the more disadvantaged group (MPF mothers with less than a high school degree at the time of their first birth) has slightly better reports of attending important events compared to the more advantaged group (SPF). Overall, the most advantaged group (SPF women with more than a high school degree) appear to miss the fewest events as reported by their children.

– Table 3 here –

– Figure 2 here –

Table 3 provides the results for mother-child closeness. Even though there is no difference in an adolescent's perceptions of how close they are with their mother by SPF vs. MPF status directly, the interaction between MPF and the adolescent's race/ethnicity are significant. Relative to Whites, Hispanic, and Black children with half siblings (a requirement in MPF homes) report feeling significantly closer to their mother than other children, indicating a stronger bond among MPF women and their children relative to other families.

Finally, we turn to how well adolescents feel they can share ideas with their mother. In panels 4 and 5, MPF status is unrelated to sharing. Children born to teen moms report marginally poorer sharing with their mothers, as do teens whose mothers had less than a high school degree when they were born. The proportion of time a mother was unemployed during childhood is also associated with an increased likelihood of sharing, while age of child is again negatively linked to sharing.

In terms of the interaction model (Share 3), MPF does not have a main effect that is significant, though MPF x education and MPF x race are significant and warrant further attention. As it was with closeness, both Hispanic and Black youth report greater sharing with mothers compared to White youth, and children with half siblings (MPF) are more likely to report successfully sharing ideas with their mothers compared to children with all full siblings (SPF). Finally, children reported more successful sharing when their mothers had more than a high school degree at birth, but these differences were more pronounced for MPF relative to SPF women. That is to say, having a mother with little education at birth appears to have a more sustained influence on mother-child sharing, even over a decade after the event occurred.

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The traditional family of the past, in which parents have children only within the context of marriage and only with one partner, seems to be declining. Instead, high rates of nonmarital childbearing and union dissolution have created situations in which parents form new relationships and often go on to have children with new partners. Multipartnered fertility is widely assumed to be negatively linked to children's well-being. Indeed, some studies have linked MPF to more externalizing behaviors (Fomby and Osborne, 2013) and increased odds of drug use and sexual activity in early adolescence (Dorius and Guzzo, 2013), yet the mechanism through which parental MPF might affect children's well-being and behaviors is unclear.

In this paper, we examined one potential mechanism: the quality of the mother-child relationship. Parent-child relationship quality is positively associated with adolescent well-being and outcomes (Amato, 2005), so it is possible that children with half-siblings report poorer relationship quality with their parents and have parents who are less involved in their lives than those with full-siblings. At the bivariate level, we found that children raised in MPF homes report lower quality parenting in terms of less monitoring, a greater frequency of missing important events, less closeness, and more problems sharing ideas (see Table 1). However, the association between MPF and relationship quality was not consistent in multivariate models, as it varied by key socioeconomic, demographic, and maternal relationship factors, indicating areas of potential resilience as well as risk for MPF families.

When we account for the early and ongoing disadvantages faced by these families, however; we find a greater probability of monitoring when MPF children are born with an absent father, slightly higher attendance at events among Black mothers with MPF; slightly higher rates of attendance among MPF mothers with less than a high school degree at birth; and higher levels

of both child closeness and sharing among Black and Hispanic youth from MPF families. Conversely, MPF is negatively linked to attendance, particularly for daughters and is tied to less quality sharing among all education groups. Though the results are mixed, the bulk of the multivariate findings suggest that MPF does not put mothers and children on path toward poorer quality relationships, and in fact, these families demonstrate clear areas of resilience. While children may be less satisfied with their relationships with MPF mothers overall, when we statistically control for the effects due to their accumulating disadvantages, these children actually do better than other children in many respects.

Limitations

We argue that the NLSY79 is especially well-suited to disentangle the very complex factors that influence child well-being, but there are nonetheless disadvantages. A major drawback of our data is our inability to incorporate paternal multipartnered fertility, paternal family instability, and father involvement. It is almost certainly the case that some of the adolescents with only full siblings by their mother have half-siblings by their father. An additional limitation is that the effects of MPF might differ depending on birth order; firstborn children by necessity will experience more family instability and changes in family composition than the youngest child. We plan to explore this possibility in future work. Finally, it is important to note that the current analysis did not link relationship quality in adolescence to adolescent outcomes, though we also expect to pursue this in the future.

Conclusion

The results here do suggest that one avenue through which having a parent with multipartnered fertility – and thus having a half-sibling – may affect child and adolescent well-being is through the perceived quality of the mother-child relationship. However, the association

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varies across certain characteristics and overall is not large, suggesting that other factors contribute to poorer well-being and increased risky behavior among those who have half-siblings. Other mechanisms, such as the relationship between biological father and children, social/stepfathers and children, and sibling relationships, should be explored.

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Table 1. *Descriptive Statistics for Study Variables (*M *[SD] or %)*

Characteristics	Analytic Sample	SPF	MPF
Mother-Child Relationship Quality			
Monitoring			
Hardly ever knows who child is with	2.8%	2.0%	6.4%
Sometimes knows who child is with	13.2%	12.4%	16.4%
Often knows who child is with	84.0%	85.7%	77.1%
Misses important events			
A lot	6.1%	4.7%	11.7%
Sometimes	27.2%	24.1%	39.5%
Almost never	66.8%	71.2%	48.8%
Closeness			
Not very close	2.2%	1.8%	4.0%
Fairly close	9.6%	8.6%	13.7%
Quite close	29.5%	30.6%	25.2%
Extremely close	58.6%	59.0%	57.0%
How well sharing ideas			
Not very well	5.8%	5.0%	8.9%
Fairly well	17.3%	16.0%	22.8%
Quite well	38.2%	38.9%	35.4%
Extremely well	38.7%	40.1%	32.9%
Key Independent Variable			
Multipartnered Fertility[b]	19.7%		
Maternal background & characteristics at birth			
Immigrant[b]	4.5%	4.6%	4.1%
Did not live w/ both parents in childhood[b]	25.0%	20.3%	44.5%
Teen mother at birth[b]	15.9%	11.0%	35.6%
Less than high school degree at birth[b]	11.9%	8.5%	25.8%
Living in poverty at birth[b]	14.3%	9.8%	32.4%
Not living with child's father birth[b]	14.0%	5.6%	48.7%
Child & childhood characteristics			
Race/ethnicity			
Hispanic	6.5%	6.0%	8.5%
Black	12.7%	7.9%	32.3%
White[a]	80.9%	86.2%	59.2%
Female[b]	49.6%	49.1%	52.0%
Age at interview[c]	13.26 (0.89)	13.26 (0.88)	13.24 (0.91)
Number of younger siblings[c]	1.47 (0.73)	1.45 (0.73)	1.54 (.074)
Months between first and last birth[c]	68.26 (47.14)	59.29 (39.5)	104.93 (57.15)
Proportion of childhood mother unemployed[c]	0.27 (0.31)	0.26 (0.31)	0.32 (0.31)
Proportion of childhood in urban area[c]	0.77 (0.37)	0.77 (0.37)	0.78 (0.37)

Characteristics	Analytic Sample	SPF	MPF
Maternal union behaviors			
Number of family transitions[c]	0.574 (1.02)	0.29 (0.73)	1.73 (1.22)
Mother relationship status at final report			
Mother single	19.30%	13.10%	44.20%
Step-father in home	17.20%	8.40%	52.80%
Biological father in home[a]	63.50%	78.60%	3.00%
N	1975	1445	530

Note: All values are weighted (except *N*) and based on nonimputed data. [a]Reference group in multivariate models. [b]Dichotomous variable. [c]Mean centered in multivariate models.
†$p<.10$. ∗$p<.05$. ∗∗$p<.01$. ∗∗∗$p<.001$.

Table 2. *Nested Ordered Logistic Regressions Predicting the Association Between Multipartnered Fertility and Mother-Child Relationship Quality, Assessed Here as Monitoring and Attending/Not Missing Important Events*

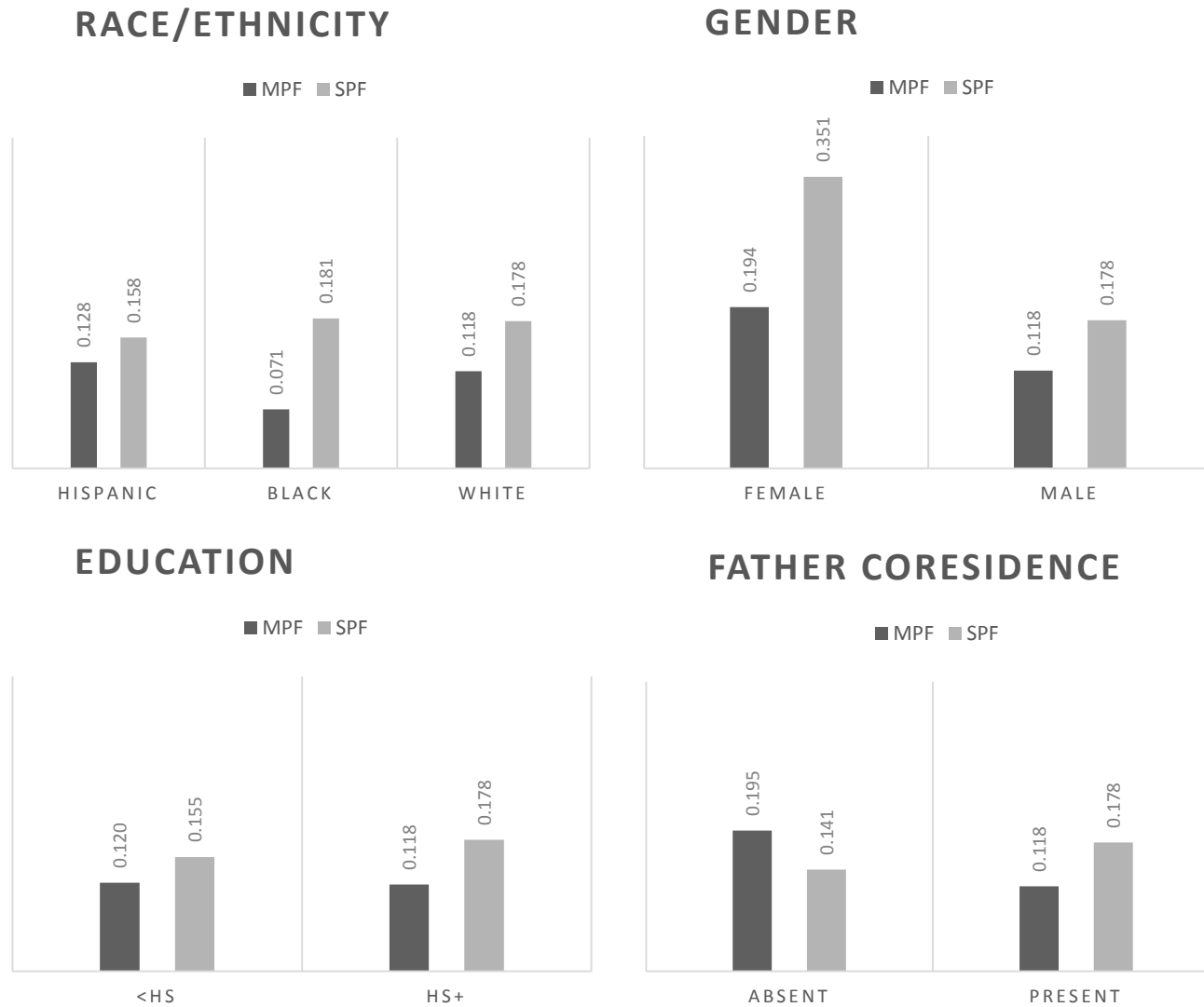|	Monitoring 1	Monitoring 2	Monitoring 3	Missing 1	Missing 2	Missing 3
Multipartnered Fertility	0.616**	0.697+	0.614	0.636***	0.794	0.591*
Mom immigrant	0.810	0.805	0.800	1.216	1.205	1.261
Mom didn't live w two parents	0.775+	0.781+	0.789+	1.137	1.157	1.152
Mom teenager at birth	1.021	1.026	1.031	0.877	0.897	0.909
Mom less than HS at birth	0.908	0.915	0.844	0.766+	0.774+	0.577**
Mom poverty at birth	1.262	1.301	1.307	0.712*	0.743*	0.738*
Dad not resident at birth	1.135	1.195	0.755	1.251	1.369*	1.468+
Hispanic	0.917	0.927	0.866	0.740*	0.751*	0.684*
Black	0.759+	0.790	1.021	0.514***	0.536***	0.421***
White	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)
Female	2.229***	2.226***	2.491***	1.283**	1.276*	1.463***
Age at interview	0.849*	0.850*	0.851*	0.925	0.926	0.925
Number younger siblings	0.914	0.910	0.916	0.844**	0.841**	0.840**
CM gap in births	1.001	1.001	1.001	0.999	0.999	0.999
Prop. time unemployed	0.763	0.769	0.766	0.906	0.910	0.904
Prop. time urban	0.934	0.948	0.935	1.107	1.130	1.120
Cumulative transitions		0.983	0.987		0.937	0.957
Mom single at 14		0.736	0.784		0.649**	0.656**
Step-dad in home at 14		0.879	0.963		0.801	0.867
Bio-dad in home at 14		(ref)	(ref)		(ref)	(ref)
MPF x Less than HS degree			1.212			1.852*
MPF x Dad not resident			2.405*			0.802
MPF x Hispanic			1.275			1.594
MPF x Black			0.564			2.085**
MPF x Female			0.726			0.657*

Note: Models were conducted on pooled and imputed data from the National Longitudinal Survey of Youth 1979 and Child Supplement Files, N=1975. +p<.10. *p<.05. **p<.01. ***p<.001.

Table 2. *Nested Ordered Logistic Regressions Predicting the Association Between Multipartnered Fertility and Mother-Child Relationship Quality, Assessed Here as Closeness and Sharing Ideas*

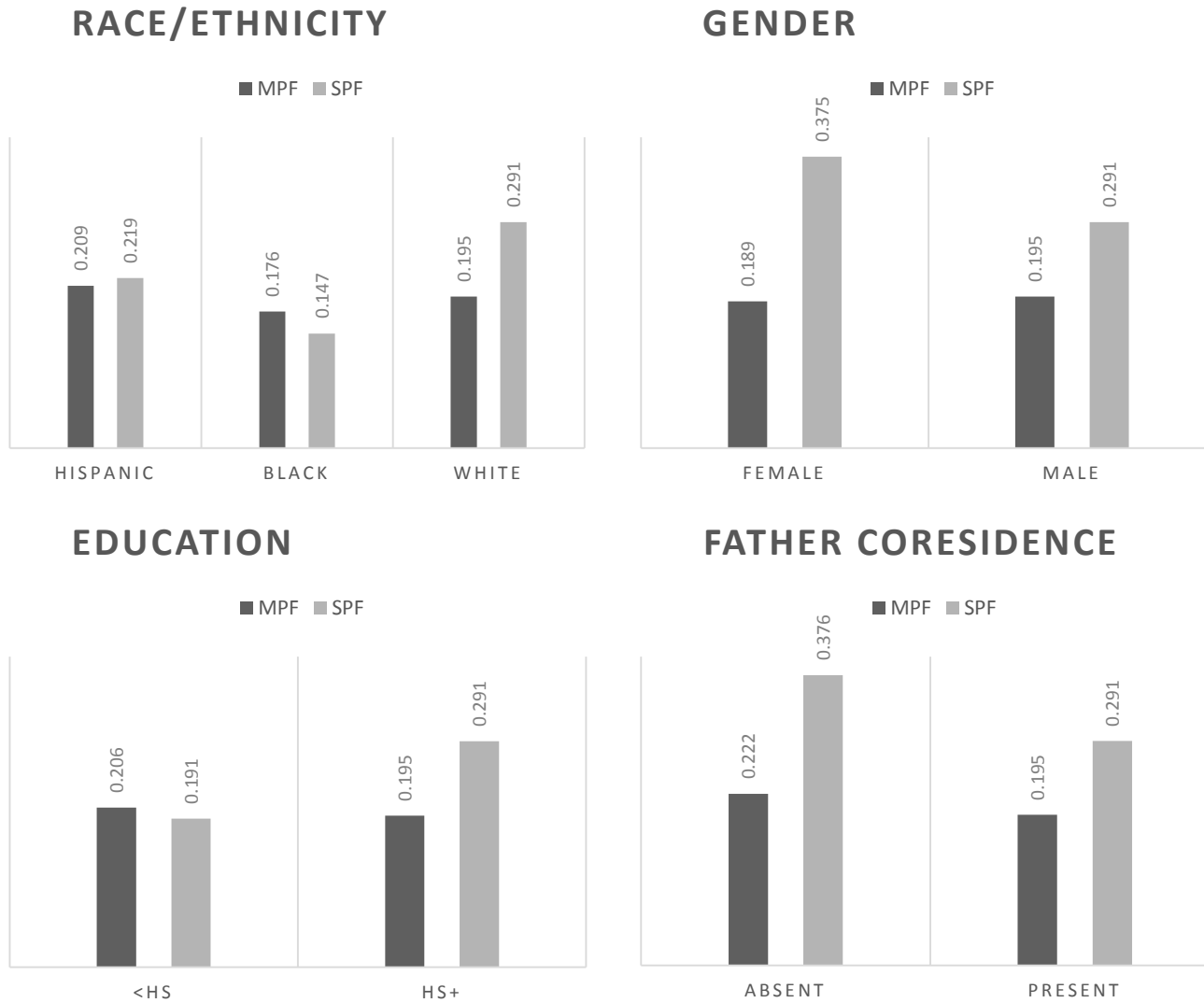|	Close 1	Close 2	Close 3	Share 1	Share 2	Share 3
Multipartnered Fertility	1.079	1.300+	1.213	0.891	0.940	0.751
Mom immigrant	0.898	0.886	0.897	0.901	0.898	0.891
Mom didn't live w two parents	0.854	0.873	0.882	1.007	1.012	1.027
Mom teenager at birth	0.869	0.914	0.919	0.791+	0.793+	0.786+
Mom less than HS at birth	0.912	0.919	1.020	0.763*	0.768*	0.993
Mom poverty at birth	0.945	0.972	0.968	1.086	1.099	1.082
Dad not resident at birth	0.929	0.977	1.151	0.927	0.944	0.880
Hispanic	1.394*	1.429**	1.199	1.197	1.202	1.000
Black	1.565**	1.522**	1.314+	1.282*	1.300*	1.124
White	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)
Female	0.841+	0.838+	0.863	1.309**	1.307**	1.357**
Age at interview	0.745***	0.744***	0.740***	0.912+	0.912+	0.908*
Number younger siblings	0.934	0.938	0.934	1.021	1.022	1.017
CM gap in births	0.999	0.999	0.999	0.999	0.999	0.999
Prop. time unemployed	1.285	1.233	1.231	1.275+	1.278+	1.270+
Prop. time urban	0.865	0.873	0.861	1.193	1.203	1.178
Cumulative transitions		0.872*	0.879*		0.975	0.998
Mom single at 14		0.944	0.926		0.891	0.889
Step-dad in home at 14		0.908	0.870		1.002	0.997
Bio-dad in home at 14		(ref)	(ref)		(ref)	(ref)
MPF x Less than HS degree			0.755			0.546*
MPF x Dad not resident			0.684			1.102
MPF x Hispanic			2.107*			2.178**
MPF x Black			1.726+			1.782*
MPF x Female			0.903			0.879

Note: Models were conducted on pooled and imputed data from the National Longitudinal Survey of Youth 1979 and Child Supplement Files, N=1975. +p<.10. *p<.05. **p<.01. ***p<.001.

FIGURE 1. PREDICTED PROBABILITIES OF POSITIVE PARENTING: MONITORING BY MPF STATUS AND RACE[A], GENDER[A], EDUCATION AT BIRTH[A], AND FATHER CORESIDENCE AT BIRTH[B].

RACE/ETHNICITY

■ MPF ■ SPF

HISPANIC: 0.128, 0.158
BLACK: 0.071, 0.181
WHITE: 0.118, 0.178

GENDER

■ MPF ■ SPF

FEMALE: 0.194, 0.351
MALE: 0.118, 0.178

EDUCATION

■ MPF ■ SPF

<HS: 0.120, 0.155
HS+: 0.118, 0.178

FATHER CORESIDENCE

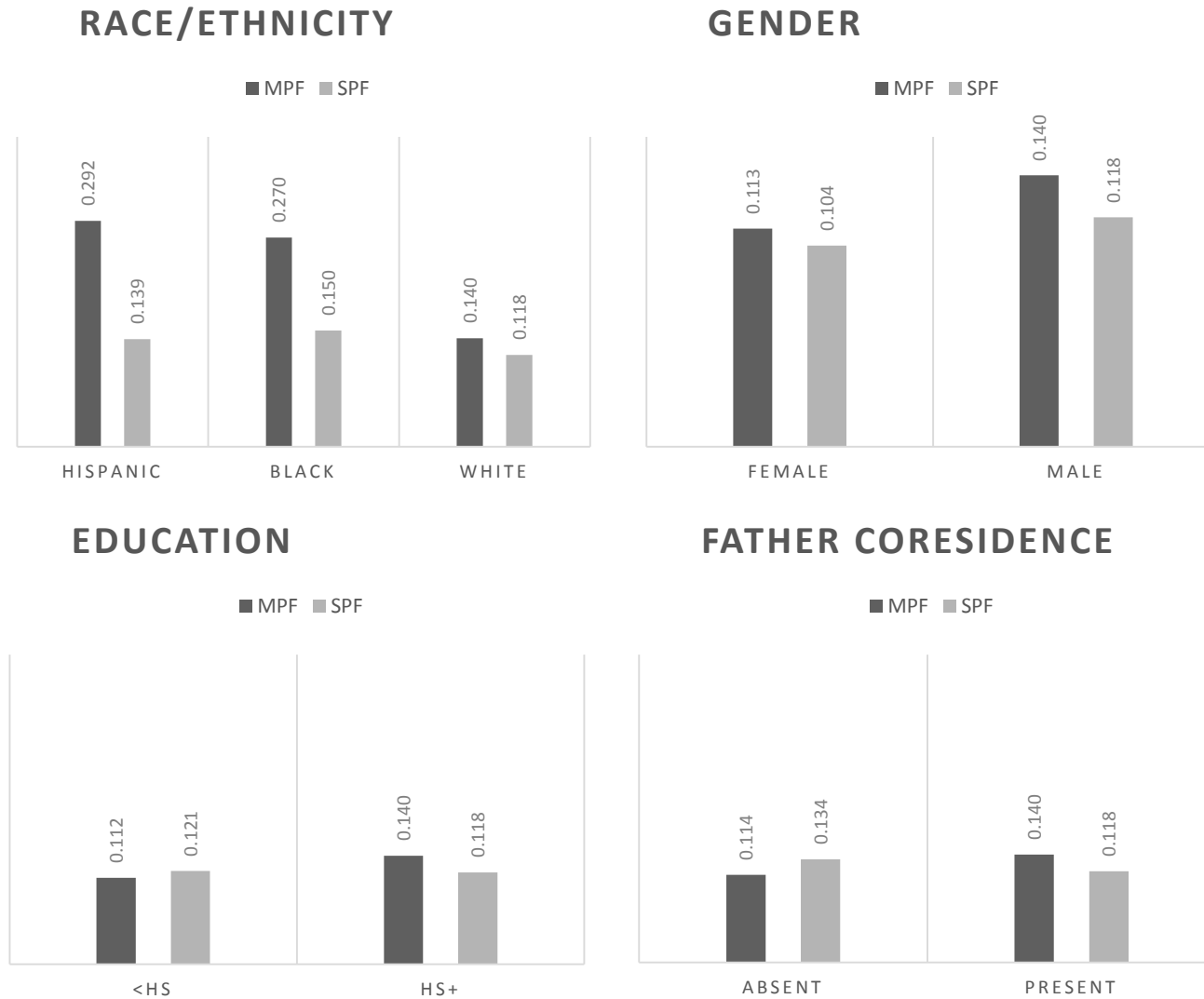■ MPF ■ SPF

ABSENT: 0.195, 0.141
PRESENT: 0.118, 0.178

Note: Based on Table 2 results. [a] Interaction was not significant. [b] Interaction was significant at the p<.05 level.

FIGURE 2. PREDICTED PROBABILITIES OF POSITIVE PARENTING: ATTENDS IMPORTANT EVENTS BY MPF STATUS AND RACE[B], GENDER[B], EDUCATION AT BIRTH[B], AND FATHER CORESIDENCE AT BIRTH[A].

RACE/ETHNICITY
■ MPF ■ SPF

HISPANIC: 0.209, 0.219
BLACK: 0.176, 0.147
WHITE: 0.195, 0.291

GENDER
■ MPF ■ SPF

FEMALE: 0.189, 0.375
MALE: 0.195, 0.291

EDUCATION
■ MPF ■ SPF

<HS: 0.206, 0.191
HS+: 0.195, 0.291

FATHER CORESIDENCE
■ MPF ■ SPF
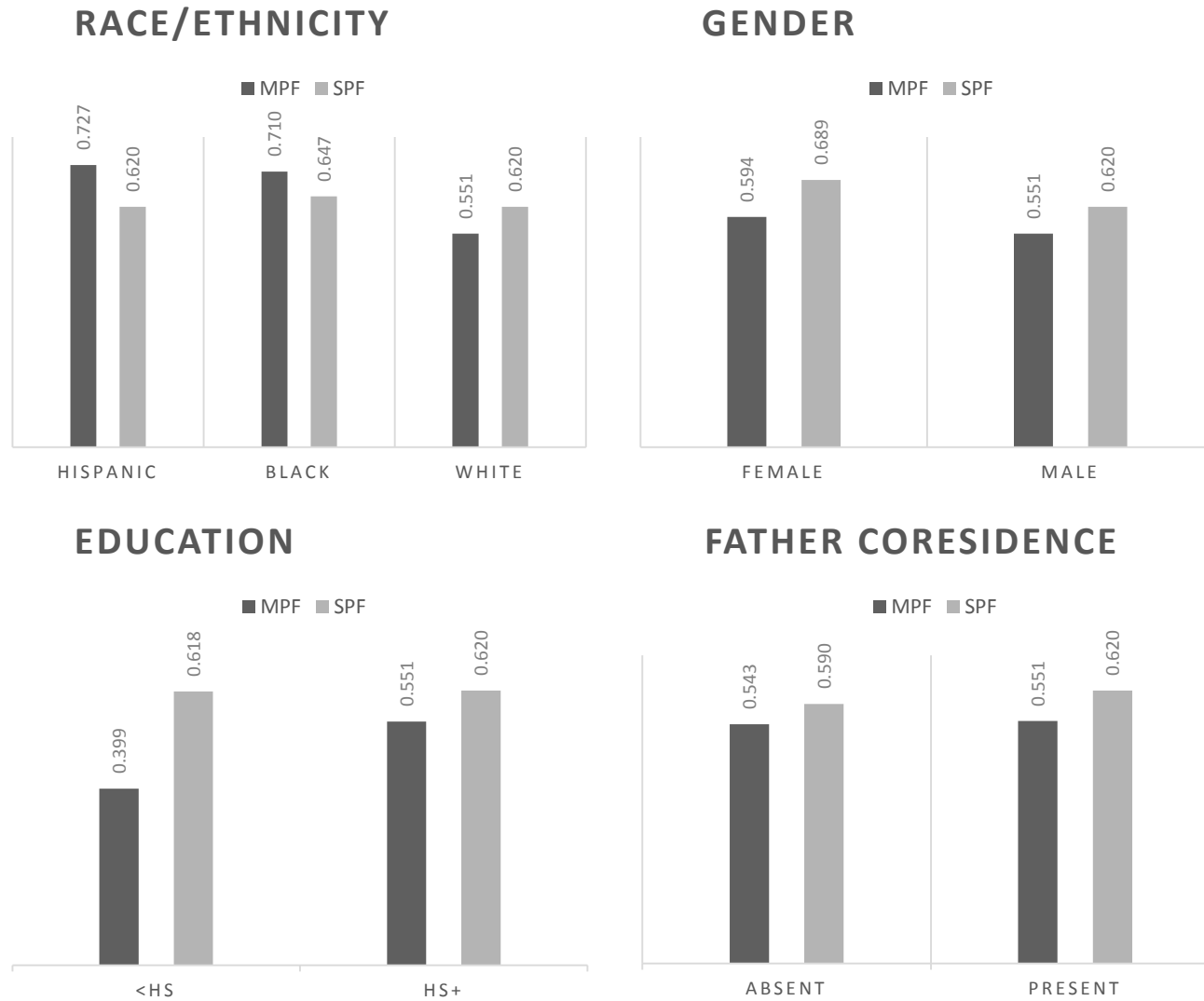
ABSENT: 0.222, 0.376
PRESENT: 0.195, 0.291

Note: Based on Table 2 results. [a] Interaction was not significant. [b] Interaction was significant at the p<.05 level.

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FIGURE 3. PREDICTED PROBABILITIES OF POSITIVE PARENTING: MOTHER-CHILD CLOSENESS BY MPF STATUS AND RACE[b], GENDER[a], EDUCATION AT BIRTH[a], AND FATHER CORESIDENCE AT BIRTH[a].

Note: Based on Table 3 results. [a] Interaction was not significant. [b] Interaction was significant at the p<.05 level.

FIGURE 4. PREDICTED PROBABILITIES OF POSITIVE PARENTING: SHARING IDEAS BY MPF STATUS AND RACE[B], GENDER[A], EDUCATION AT BIRTH[B], AND FATHER CORESIDENCE AT BIRTH[A].

Note: Based on Table 3 results. [a] Interaction was not significant. [b] Interaction was significant at the p<.05 level.