

Racial/Ethnic Differences in the Association Between Family Structure and Children's Education

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ABSTRACT

While an extensive literature has shown that children raised by both biological parents fare better academically than children raised in any other family structure, there has been little research to explain an important finding: living apart from a biological parent is *less* negatively consequential for racial/ethnic minority children than white children. To address this gap, I test two explanations that have been posited to account for racial/ethnic differences in the association between family structure and children's educational attainment: socioeconomic stress and extended family embeddedness. I assess whether racial/ethnic variation in these two mechanisms explain group differences in the association between family structure and on-time high school completion and college enrollment for white, black, and Hispanic children. Results indicate that both socioeconomic stress and extended family embeddedness attenuate the effect of family structure on these two measures of educational attainment, though the former to a much greater extent. Differences in socioeconomic resources accounted for up to nearly 50% of the gap in these outcomes, and extended family embeddedness explained roughly 15-20%. These findings lend support for the socioeconomic stress hypothesis, which posits that the negative effect of familial disruption may be less independently impactful for racial/ethnic groups facing many socioeconomic disadvantages to begin with. Results are less consistent with the hypothesis that racial/ethnic minority children's deeper embeddedness in their extended family network protects against the negative effects of familial disruption.

Keywords: Family Structure, Race/Ethnicity, Extended Family, Educational Attainment, Family Diversity, Child Wellbeing

Introduction

Decades of research have shown that children fare better academically when they are raised in a two-biological-parent family (i.e., a household with a child and his or her birth mother and biological father; McLanahan & Percheski, 2008). Children who live apart from a parent during childhood are less likely to finish high school, attend college, or earn a bachelor's degree (Amato & Keith, 1991; Hetherington, Camara, & Featherman, 1983; Manning & Lamb, 2003; McLanahan & Sandefur, 1994). A growing body of research has demonstrated, however, that the effects of family structure are not equal across all groups. Studies have found that this negative association between familial disruption and children's educational attainment is significantly weaker for minority children than white children (e.g., Amato, 2000; Shaw, Winslow, & Flanagan, 1999; Sun & Li, 2007). While they have yet to be formally tested, two main mechanisms have been posited to explain racial/ethnic differences in the effect of family structure on children's academic outcomes: *socioeconomic stress* and *extended family embeddedness* (McLoyd, Cauce, Takeuchi, & Wilson, 2000).

Using nationally representative, longitudinal data this study investigates the extent to which racial/ethnic variation in these two mechanisms mediates the association between family structure and two important measures of educational attainment: on-time high school completion and college enrollment. This paper builds on previous work in several key ways. First, unlike prior research that typically uses cross-sectional or short-term measures of family structure, I construct children's full histories of family structure (from birth to age 17), including both nuclear and extended family household configurations. My analyses also include lifetime measures of a wide range of family

factors including parents' employment and health statuses and family wealth. This allows me to better articulate how cumulative childhood family experiences influence long-term outcomes for children. Second, this study moves beyond black-white comparisons that have traditionally characterized research in this area to incorporate Hispanics, who now represent the largest minority group in the U.S. (Passel & Cohn, 2008 [inconsistencies in racial categorizations over time in the dataset and small cell sizes do not permit inclusion of other racial/ethnic groups]). Given group differences in levels of exposure to socioeconomic stress, participation in extended family networks, and rates of two-parent households, including Hispanic families provides a unique opportunity to compare families of color to one another and to non-Hispanic whites and to assess whether patterns of association for Hispanic children are similar to those of black or white children, or altogether distinctive. Third, as it relates to measures of extended family embeddedness, instead of using coresidence with extended relatives as the sole proxy for extended family support, I also include indicators of the levels of practical and emotional support that parents receive from family members. Including additional measures of support allows me to better approximate the total amount of extended family support that is available to parents, both within and across households.

Understanding whether racial/ethnic differences in socioeconomic and extended family resources help explain the differential association between family structure and children's educational attainment has implications for research and policy. To begin, a focus on group differences in the effects of family structure advances a more diverse portrait of American families, one that more adequately reflects the longstanding and growing racial and ethnic diversity of the United States, which has been lacking in extant

family research (Gerstel, 2011; McLoyd et al., 2000). It also provides an important corrective to work that assumes the primacy of the white middle class two-biological-parent family model (Coontz, 2004; Roschelle, 1999). If minority children are less vulnerable to the adverse effects of parental separation than white children, then valorizing the two-biological-parent family over other family forms is unwarranted and may prove to be unfruitful in reducing racial/ethnic disparities in child outcomes. Further, contemporary policy discussions about family structure center on questions concerning the role of the two-parent family in promoting child wellbeing. (U.S. House of Representatives, 1996). If racial/ethnic differences in socioeconomic resources mediate the relationship between family structure and educational attainment, then what deserves policy attention is not minority families' deviation from the two-biological-parent family model, but rather the social structures that produce and maintain racialized socioeconomic inequities. Moreover, many welfare reform policies assume that extended families will act as a social safety net to their families during hard times (Cherlin & Seltzer, 2014). However, recent studies have called into question the viability of the extended family safety net (Garrett-Peters & Burton, 2016; McDonald & Armstrong, 2001). Examining the extent to which embeddedness in one's extended family network serves as a buffer against the negative effects of familial disruption can better inform policies that encourage reliance on extended family networks to enhance child wellbeing.

Background and Theoretical Perspectives

Family Structure and Children's Educational Attainment

Children raised in two-biological-parent families tend to fare better academically than children raised in any other family form (Brown, 2010). In their landmark study on

single-parent families and child wellbeing, McLanahan and Sandefur (1994) found that youth living with both biological parents were less likely to drop out of high school and more likely to enroll in college, compared to youth living with single or divorced parents (though the negative effect of family structure was somewhat smaller for college enrollment than high school graduation). Subsequent studies have produced similar findings related to these outcomes (e.g., Deleire & Kalil, 2002; Ginther & Pollak, 2004; Hill, Yeung, & Duncan, 2001).

Theoretical explanations that account for why children growing up outside of a two-biological-parent family are at an elevated risk of experiencing academic problems can be classified into three categories: (1) economic resources (2) parental socialization, and (3) stress and family instability (Amato, 2005; Brown, 2010; Fomby & Cherlin, 2007; Wu, 1996). Economic explanations maintain that some family structures, particularly single-parent families, tend to be economically disadvantaged, having fewer economic resources such as income and wealth available to facilitate effective family functioning. Economic deprivation undermines parents' ability to provide the material goods and services needed to cultivate children's academic growth (Amato, 2005). Parental socialization explanations focus on child-rearing, foremost parenting practices. The argument here is that there is typically a weaker parental authority structure in single-, step-, and cohabiting families than in two-biological-parent families, and there is less monitoring and supervision, which in turn reduces the quality of parenting that children receive (Amato 2005, Brown 2010; Sandberg and Hofferth, 2001). Family instability explanations assert that the number of family transitions a child experiences during childhood, independent of family type, has negative consequences for children's

academic performance. The idea behind this is that children fare better when family structure is stable; transitions lead to stress due to people moving in and out of the household, potentially disrupting family routines and leading to new role configurations. This familial disruption may also be accompanied by residential and school changes, that potentially further undermine children's educational outcomes (Fomby and Cherlin, 2007; Teachman, 2008; Wu 1996).

In addition to these explanations, researchers have noted that selection may also account for the association between family structure and children's academic outcomes. This perspective suggests that it is not family structure or instability per se that influence child wellbeing. Rather, children perform better in two-biological-parent families because adults who form and maintain such households may be more well-adjusted and socioeconomically advantaged in the first place (Brown, 2010; Hofferth, 2006).

Racial/Ethnic Disparities in the Effects of Family Structure on Educational Outcomes

While numerous studies have examined the relationship between family structure and children's educational attainment, only a few have investigated whether the effect of family structure varies across racial/ethnic groups. Among those focused on racial/ethnic differences, scholars generally find that the negative effects of living outside of a two-biological-parent family are weaker for minority children than white children. For example, in a rigorous meta-analysis of research on the long-term effects of divorce, Amato & Keith (1991) found that the magnitude of the association between parental divorce and educational attainment was nearly twice that for white children than for black children. Amato (2001) found similar racial differences in his follow-up meta-analysis a decade later. In another study focused on high school academic achievement, Smith

(1997) observed a stronger effect of parental separation on children's grades for white youth, relative to their black peers. Further, McLanahan and Sandefur (1994) found that the proportionate increase in risk of dropping out of high school due to familial disruption was significantly greater for whites than for blacks or Hispanics. However, for high school idleness, they found that the effect of familial disruption was stronger for blacks than whites. This latter finding suggests that the differential association between family structure and educational outcomes may depend on the outcome of interest under investigation. Two major mechanisms have been hypothesized to explain why minority children may be less vulnerable to the negative consequences of living outside of a two-biological-parent family than white children: *socioeconomic stress* and *extended family embeddedness*.

Socioeconomic stress hypothesis. In the U.S., race and ethnicity are fundamental axes of inequality along which socioeconomic resources are distributed (Bobo, Kluegel, & Smith, 1997; Bonilla-Silva, 2006; Conley, 2009). Due to historic and contemporary structural racism, minority families on average have less access to socioeconomic resources such as income, wealth, and quality neighborhoods than white families (Charles, 2006; Krysan, Couper, Farley, & Foreman, 2009; Mazumder, 2008; Proctor, Semega & Kollar, 2016; Wilson, 1987). Because of this, minority children are more likely to be exposed to socioeconomically stressful environments, and some scholars have suggested that their exposure to sustained socioeconomic deprivation means that the additional stress incurred by living apart from a parent is only marginally impactful, above and beyond existing social disadvantages (McLoyd et al., 2000; Smith, 1997). This is referred to as the socioeconomic stress hypothesis.

This hypothesis is derived from family stress theory, which focuses on a family's ability to cope with stressful situations and crises. It maintains that a families' ability to respond and adapt to stressors depends on the nature and number of stressful events, the family resources available to facilitate coping, and family members' perception of the event (McCubbin, 1993; McCubbin & McCubbin, 1989; Friedman 1998; Fomby et al. 2010). Given the cumulative number of socioeconomic stressors that minority children face, and the extent to which the pervasiveness of these stressors is more normative, one might expect that the independent effect of an event like parental divorce to be smaller for this group. On the other hand, for children of a racial/ethnic group who on average benefit from greater access to socioeconomic resources (i.e., white children), one might expect that the effect of familial disruption may be more pronounced.

Extended family embeddedness hypothesis. Several studies suggest that minority children are more deeply embedded in extended family networks compared to white children (Burton, 1992; Hunter, 1997; Margolis, Fosco, & Stormshak, 2014; Sarkisian & Gerstel, 2012; Stack 1974; Taylor, 1986). Indeed, research on the extended family networks of Black Americans finds that this group is engaged in ongoing and reciprocal exchanges of practical, emotional, and financial support, and black families are more involved in practical support (e.g., help with household chores, transportation, and child care) than white families (Jayakody, Chatters, & Taylor, 1993; Sarkisian & Gerstel, 2004; Stack & Burton, 1993; Taylor, Chae, Lincoln, & Chatters, 2015). They also tend to live in closer proximity to extended relatives than whites (Farber, Miller-Cribbs, & Reitmeier, 2005). Although limited, extant research on Hispanic extended family networks suggest that they are more integrated and may offer higher levels of support than white extended

family networks (Baca Zinn & Wells, 2000; Kamo, 2000). Greater involvement in these extended family networks may reduce of some the negative psychosocial effects associated with parental conflict or separation (Lamborn & Nguyen, 2004; Pittman, 2007; McLoyd et al., 2000; Smith, 1997). This is known as the extended family embeddedness hypothesis.

This hypothesis is grounded in social capital theory, which asserts that social capital within the family, that is supportive relations between parents and children, is crucial for children's intellectual growth (Coleman, 1988). Social capital within the family gives children access to other forms of parental capital that help facilitate children's educational performance (i.e., economic, cultural, and human capital) (Coleman, 1988). The absence of a parent from the household may diminish the availability of these resources to children, and thus undermine their academic success. Extended family networks, however, may increase the number of nurturant and supportive adults available in the child's life to provide such resources (McLoyd, et al. 2000). Thus, to the extent that extended family networks contribute additional resources such as monitoring and supervision and familial involvement in education, one would expect that embeddedness in these networks may weaken or even countervail the negative effects of parental absence. However, if demands for support exchanges increase stress and diminish household resources, one would anticipate that greater embeddedness in extended family networks would adversely affect children's educational attainment (Pilkauskas, Campbell, & Wimer, 2017; Dominguez & Watkins, 2003).

The Current Study

While plausible, the relative importance of these mechanisms in explaining racial differences in the effects of family structure has yet to be examined (but see Fomby et al., 2010 for an investigation of racial/ethnic differences in the effects of family instability on children's risk behaviors and see Sun & Li, 2007 for a test of the socioeconomic stress hypothesis on parental divorce/separation during late adolescence). This study seeks to overcome this limitation by using nationally representative longitudinal data to assess whether racial/ethnic differences in socioeconomic stress and extended family embeddedness account for group differences in the association between family structure and children's educational attainment. I begin by investigating whether children's lifetime experience of family structure influences their on-time high school completion and college enrollment. I then determine if any observed associations between family structure and these two measures of educational attainment differ by race/ethnicity. Finally, I evaluate the extent to which factors associated with socioeconomic stress and extended family embeddedness explain any group differences in associations by family structure.

Method

Data

This study draws on data from the Panel Study of Income Dynamics (1985-2015) and its two youth-centered supplements, the Child Development Supplement (CDS) (1997-2007) and the Transition into Adulthood Supplement (TAS) (2005-2015). The PSID began in 1968 as a nationally-representative sample of nearly 5,000 U.S. households. Original sample members and their descendants were followed annually until 1997 and have been followed biennially since then. To maintain population

representativeness, in 1997, a sample refresher added approximately 500 households headed by immigrants who had entered the United States since 1968. At each wave, the household head or the spouse or cohabiting partner of the head reports on household composition, and household members' employment, income, educational attainment, and health status. In 2015, the study collected information on nearly 25,000 individuals in approximately 9,000 households.

While the PSID has always collected some information about children, in 1997, the PSID supplemented its main data collection with the CDS, which provides additional information on up to two children aged 0 to 12 years per household. Information is obtained through interviews with primary and secondary caregivers and with older children, and through assessments and interviewer observations. Children and their caregivers were re-interviewed in 2002 and 2007, or until children reached age 18. In 2005, the Transition to Adulthood Supplement (TAS) was developed to continue following the original CDS cohort when they aged out of CDS or left high school. TAS has continued to follow respondents biennially as they complete their educations and enter the labor force. In 2015, TAS respondents were between 18 and 28 years old. My analytic sample includes children who were present in at least 50% of the waves in which they could have been observed in the PSID core data and lived with mothers with a known union history, who responded to at least one wave of the Transition to Adulthood Supplement between 2005 and 2015, and who provided information on their educational status and attainment (N=2,589). This includes 86% of the age-eligible original CDS sample. Young adults who were not included in this analytic sample were typically younger, Hispanic, and from families with lower household incomes and wealth at birth.

Weighted statistics are representative of young adults born between 1985 and 1997 who were residing in the United States in 1997.

Measures

Dependent variables. Two dependent variables are used as indicators of children's educational attainment: on-time high school completion and college-enrollment. On-time high school completion is a binary variable based on whether the child (1) completed high school, and (2) graduated without repeating a grade in school. This information is gathered from CDS and TAS. In CDS, individuals are asked whether they ever repeated a grade in school, and in TAS, respondents are asked whether they completed high school, and in which month and year they did so. If participants responded affirmatively to having repeated a grade, they are assigned a value of 0, regardless of completion status. If participants did not repeat a grade, but also did not finish high school, they are also assigned a value of 0. Only respondents who did not repeat a grade and finished high school are assigned a value of 1. I have chosen this measure over any-time high school completion because high school graduation rates are universally high in the U.S. (Chapman, Laird, Ifill, KewalRamani, 2011), but on-time completion rates are significantly lower, and youth who do not graduate high school on-time are more likely to never graduate, not pursue higher education, and be unemployed (National Center for Education Statistics, 2014). College enrollment is also a binary variable. Respondents are coded as 1 if they reported attending a two-year or four-year college in at least one wave of the TAS in which they were observed. They are coded as 0 if they did not finish high school and/or if they did not report attending college in any of the TAS waves in which they were observed. About one-quarter of college enrollees did

not report an initial enrollment date, so the analysis considers ever having been enrolled, rather than enrollment immediately after high school.

Independent variable. Children's lifetime experience of family structure (from birth to age 17) is based on mother's union status: (1) the proportion of childhood spent living with two biological parents, (2) the proportion of childhood spent living with a mother and a non-biological parent, and (3) the proportion of childhood spent with a single mother. Following the example of Carlson & Corcoran (2001), this categorization of single-mother families includes never married, divorced, widowed, and separated mothers. Although these categories of single-parenthood are not identical, I combined them due to sample-size limitations and to be consistent with prior research. Additionally, a child's non-biological parent may include either the married or cohabiting partner of the child's mother.

I used the PSID's marriage and birth history files to construct the family structure variable. Based on the child's reported birth month and year and his or her mother's reported start and end date for each of her unions (also reported by month and year), I determined the union status of each child's mother when he or she was born, and in each subsequent year of his or her life until age 17. This approach is an improvement upon measurements that rely solely on PSID relationship status variables and/or household roster information, as mother's union status information is not available in non-interview years after 1997 or in years in which she did not participate in the survey. If a child's mother was unobserved in one year, but she reports information on her union status in a subsequent year of the marriage history file, I used the reported union status start and end dates to recover information about her union status for missing years, retrospectively. To

obtain the proportion of childhood spent in each family structure type, I totaled the number of waves a child is observed living in a given family structure and divided this value by the total number of waves a child is observed before age 18.

Socioeconomic stress. To test the socioeconomic stress hypothesis, I used several measures that have been previously identified as indicators of children's socioeconomic circumstances: (Conley, 2009; Fomby et al. 2010): parents' education, self-reported measures of neighborhood quality, safety, and homeownership, mother's age at child's birth, and lifetime measures of family wealth and parents' employment and health status. Mothers' education is specified as the highest level of education completed by the child's mother: less than high school, high school, some college, and bachelor's degree or higher (reference). Education was used instead of family income in this analysis due to high levels of collinearity between the two variables and because income is likely to be endogenous (affected by mother's union status). For neighborhood quality, I used the child's primary caregiver's (PCG) self-reported rating of their neighborhood as a place to raise children (1=excellent/very good, 2=good, 3=fair/poor). Neighborhood safety was measured based on the PCG's report of how safe they perceived their neighborhood to be to walk around alone after dark (0=neighborhood is somewhat or extremely dangerous, 1=neighborhood is completely or fairly safe). Homeownership is a binary variable that is based on the PCG's report of the percentage of their neighbors who owned their home (0=less than 50%, 1=more than 50%). Mother's age at birth is a categorical variable: 19 and under (reference), 20-29, and 30+. Average family wealth and parents' employment and health statuses are all lifetime measures that I created by summing the values for each of these variables across all the waves that a child was observed and dividing them

by the total number of waves that a child was observed. For family wealth, I included the inverse hyperbolic sine of wealth excluding home equity to account for the highly skewed distribution of wealth in the sample. Mothers' employment and health status are both dichotomous variables indicating whether the child's mother is employed and in good health (0=no, 1=yes).

Extended family embeddedness. I included five indicators to test the extended family embeddedness hypothesis: (1) coresidence with extended relatives, (2) geographic proximity to extended relatives, (3) frequency of contact with extended relatives, and (4) the PCG's reported satisfaction with the level of practical support and (5) emotional support he or she received from extended family members. Coresidence with extended relatives was determined based on information from the household roster and from the Family Identification Mapping System (FIMS). A child was identified as living with an extended relative if he or she resided with an adult relative (by birth, adoption, or marriage) who is not his or her parent or sibling. This includes grandparents, aunts, uncles, and adult cousins; it does not include nonrelatives such as friends or boarders or underage extended family members. Following Fomby et al. (2010), I distinguish between short-term and long-term extended family coresidence with a three-category variable: 1=never lived with an extended relative (reference), 2=lived with an extended relative for less than a quarter of childhood, and 3=lived with an extended relative for at least a quarter of childhood. Geographic proximity to extended relatives is measured based on the PCG's report of the number of family members (besides the child's other parent if they are not present in the household) who live in the same neighborhood. Due to the highly positively skewed distribution of responses, I constructed a categorical

variable that collapsed responses into quartiles. Frequency of contact with extended relatives is based on how often the PCG reports that the nuclear family “gets together with relatives or friends”: less than once a month (reference), one to three times a month, or once a week or more. Measures of practical and emotional support from extended family is based on the PCG’s report of how satisfied he or she is with the level of support that he or she is receiving from family members besides the child’s other parent. Responses are based on a 7-point Likert scale with 1 indicating complete dissatisfaction and 7 indicating complete satisfaction. Higher values on these scales signify higher levels of satisfaction with practical and emotional support received by the primary caregiver.

Moderator. Race/ethnicity is coded into four categories based on the PCG’s report of the child’s race: (1) non-Hispanic white (reference); (2) non-Hispanic black; (3) Hispanic; and (4) other race.

Control variables. In addition to these variables, I also control for several demographic characteristics of the child: gender, region where the child grew up, and the average number of children living in the child’s household. Gender is measured as male (reference) or female. Region (South vs non-South) measures the proportion of all observed waves that a child lived in a state in the US South. Average number of children in the household was constructed in a similar fashion. At each wave that a child was observed, he or she was assigned a value indicating the total number of children living in his or her household. These values were then totaled and averaged across the total number of waves that a child was observed.

All covariates except child's race, gender, age, region, family income, and number of children present in the household included missing data on at least some observations. To restore missing cases and improve the generalizability of my findings, I used multiple imputation with chained equations in Stata 15. The imputation model included all dependent, independent, and control variables with missing values, as well as child's race, gender, and age, a family-level identifier shared by all related individuals in the sample, and stratum and clustering indicators. My multivariate regressions used multiply imputed datasets where covariates include imputed values but dependent variables are not imputed (von Hippel 2007).

Analytic Strategy

I use logistic regression analysis to examine the relationship between children's lifetime experience of family structure and their educational attainment. I begin with baseline models that estimate the strength of the association between the main effects of family structure and on-time high school completion and college enrollment, taking into account the aforementioned control variables (Model 1), before including interaction terms for white, black, and Hispanic children (Model 2). I then separately add in indicators of the socioeconomic stress (Model 3) and extended family embeddedness (Model 4) hypotheses, before jointly including all covariates (Model 5) to assess the extent to which these mechanisms help explain group differences in the association of family structure between family structure and educational attainment. Next, I conduct Wald tests to determine whether the family structure-race/ethnicity interactions are jointly significant. Then, I calculate predicted probabilities to show how, if at all, the effects of family structure on high school completion and college enrollment vary by

race/ethnicity. To appropriately compare changes in coefficients across logistic regression models and to quantify the amount of variance in the two dependent variables that is explained by socioeconomic stress and extended family embeddedness, I calculate the average partial effects of these two sets of factors using the Karlson, Hohm and Breen (KHB) method for decomposing total effects (Kohler, Karlson and Holm 2011).

Results

Descriptive Results

Table 1 displays the distribution of the dependent variables and sample characteristics by race/ethnicity. Statistically significant group differences (black vs. Hispanic, black vs. white, and Hispanic vs. white) are indicated with footnotes. Starting with outcome variables, I found that there were significant differences by race/ethnicity in educational attainment. White youths had the highest rates of on-time high school completion (85%) and college enrollment (81%) among the three groups. Hispanic youths followed with 74% for both outcomes, and black youths with 61% and 70%, respectively.

Consistent with findings from cross-sectional research (U.S. Department of Health and Human Services, Health Resources and Services Administration, 2014), the longitudinal estimates of exposure to various family structures indicate that black children less of their childhood living in a two-biological-parent and more time living with a single mother, compared to white and Hispanic children. Black children also spent more time living with their mothers and her partner who is not their biological parent (both married and cohabiting), relative to their white peers, whereas Hispanic youths and white youths spent similar amounts of time with their mother's non-biological partner.

Turning to socioeconomic stress, black and Hispanic children had significantly less access to socioeconomic resources during childhood than their white peers. For instance, the average family wealth for white children was roughly 1.5 to two times higher than that of Hispanic and black children, respectively. Similarly, white parents were approximately 1.5 times more likely to rate their neighborhood as “excellent” or “very good”, relative to black and Hispanic parents. Black and Hispanic children were, however, more likely to live with or in close proximity to extended relatives, and their parents expressed higher levels of satisfaction with the amount of practical support received from extended family members. Eighty percent of white children never lived in an extended family, compared to approximately 40% of black children and 60% of Hispanic children. Further, white parents reported significantly lower levels of satisfaction with the amount of practical support received from extended family members than black and Hispanic parents.

In sum, descriptive results generally support findings from prior research indicating racial/ethnic differences in levels of educational attainment and family structure. They also show that on average, black and Hispanic children are confronted with more socioeconomic hardship than their white peers. Moreover, they lend some evidence to support the assertion that minority children are more deeply embedded in their extended family networks than white children. The multivariate analyses in the following section assess the extent to which racial/ethnic differences in these family resources account for group differences in the effects of family structure.

Multivariate Results

On-time high school completion. In the baseline model (Model 1) for Table 2, the variables indicating the main effects of family structure show that more time spent living with a single-mother or with a mother and a non-biological parent are associated with a lower likelihood of finishing high-school on-time, compared with more time spent with two biological parents. The main effects of race/ethnicity are statistically significant, indicating that black and Hispanic youth are less likely to complete high school on-time, relative to white youth. The interaction term between single-mother family and race/ethnicity (Model 2) is highly significant and *positive* for black youth (OR 3.049), signifying a weaker negative association between family structure and on-time high school completion for black youth, compared to white youth. The association between family structure and this outcome was not different between white and Hispanic youth.

Model 3 accounts for indicators of socioeconomic stress. Children who spent more time not living in a two-biological-parent family remained less likely to graduate high school on-time (though the coefficient for time spent living with mother and a non-biological parent is only marginally significant). The interaction term for single-mother family and black children is no longer statistically significant, signifying that socioeconomic stressors help explain the differential association between family structure and on-time high-school completion between blacks and whites. Indicators of socioeconomic stress, namely parents' education, age, and health status are positively related to high school completion and appear to be explaining much of the variation in this outcome. Children whose parents earned a bachelor's degree or higher and those whose mother was older at childbirth and whose mother spent more time in good health during their childhood were more likely to graduate on-time.

Model 4 includes indicators of extended family embeddedness. Here, we see no change in the significance of the association between family structure and on-time high completion or the family structure-race/ethnicity interaction term for black youth and high school completion. This suggests that indicators of extended family embeddedness explained little of the main interaction effects of family structure on high school graduation between blacks and whites. When both sets of factors are taken into account in the full model (model 5), the main effects for family structure are no longer statistically significant, and neither is the interaction term for blacks. Thus, combined, indicators of socioeconomic stress and extended family embeddedness help explain the relationship between family structure and high school completion, as well as the differential effect of family structure for black youth. Wald tests indicate that the family structure-race/ethnicity interactions are statistically significant in models 2 through 5 (Table 2), providing evidence that the association between family structure and on-time high school completion differs for at least one group (in this case, black children).

To better understand the interaction terms for race/ethnicity and family structure, I calculated and graphed the predicted probabilities for each family structure-race/ethnicity combination from Table 2 model 2 that had statistically significant differences by race/ethnicity, setting all other values to their mean or modal values. Figure 1 displays these values for on-time high school completion. This graph shows that as black children spend longer periods of time in a single-mother family, the change in slope for the effect of living in a single-mother family declines less sharply than the change in slope for whites. This pattern indicates that more time spent in this family structure is less negatively consequential for black youth. This pattern is consistent for Hispanic children,

though as demonstrated in Table 2, this differential effect is not statistically significant at $p < .05$. Summarizing Table 2 and Figure 1, the results show that living in a single-mother family for the majority of childhood is less detrimental for black children's on-time high school completion, compared to white children.

College enrollment. In the baseline model for college enrollment (Table 3), the main effect of family structure indicates that children who spent some time in a single-mother family or with a mother and a non-biological parent are less likely to enroll in college, relative to those who spent a greater proportion of childhood living in a two-biological-parent family. The main family structure-race/ethnicity interaction terms for blacks and Hispanics, however, are not significant (Model 2). This suggests that the effect of family structure on college enrollment does not differ by race/ethnicity.

Model 3 adds in factors related to socioeconomic stress. Unlike the baseline model, the main effect of family structure is no longer statistically significant, indicating that socioeconomic factors help explain the association between the main effect of family structure and college enrollment. In particular, parents' education, family wealth, and mother's age at childbirth are positively related to college enrollment. On the contrary, when indicators of extended family embeddedness are taken into account (Model 4), the main effect of family structure remains similar to that in the baseline model. This suggests that the extended family embeddedness hypothesis does little to explain the association between family structure and college enrollment. Extended family embeddedness does appear to be independently associated with college enrollment, however. Specifically, children who spent some time living with an extended relative had

a roughly 40% lower odds of attending college than those who never lived with an extended relative during childhood.

In the full model, when I account for factors related to both socioeconomic stress and extended family embeddedness, the main effects of family structure are nonsignificant. Similar to Model 3, the coefficients for parents' education, family wealth, and mother's age are highly and positively related to college enrollment. Coresidence with extended family members is no longer related to college-enrollment. This finding suggests that socioeconomic factors are more predictive of college enrollment than family structure itself or extended family embeddedness. Wald tests show that the family structure-race/ethnicity interactions are not statistically significant in each model (see Table 3), providing further evidence that the association between family structure and college enrollment does not differ by race/ethnicity.

Table 4 displays the average partial effect of family structure in the baseline and full models estimated using the Karlson, Hohm and Breen (KHB) method for decomposing total effects (Kohler, Karlson and Holm 2011). The average partial effect indicates the difference in the predicted probability that a child experienced an outcome of interest (in this case, on-time high school completion and college enrollment), given the time he or she spent in a single-mother family or with a mother and a non-biological parent, relative to time spent in a two-biological-parent family. The percentage change in the average partial effect between the baseline and full models demonstrates the difference in how much of the variance is explained by family structure for each outcome before and after taking into account indicators of socioeconomic stress and extended family embeddedness and controlling for sociodemographic characteristics.

Average partial effects from the KHB decomposition method reveal that indicators of both socioeconomic stress and extended family embeddedness significantly attenuated the relationship between family structure and children's educational attainment, though the latter did so to a much lesser degree. The reduced model estimated that on average, the probability of on-time high school completion for each additional year a child spent living with his or her mother and a non-biological parent was 17.6 percentage points lower than for each additional year spent in a two-biological-parent family. In the full model, once indicators of socioeconomic stress are taken into account, the average partial effect decreased to 10.2 percentage points. Thus, the difference in the size of average partial effects in the reduced and full models indicates that 42% of the gap in on-time high school completion between children who spend an additional year living with a mother and a non-biological parent compared to with two biological parents is explained by socioeconomic factors included in the full model. Extended family embeddedness, on the other hand, explained 15% of the gap. When we compare differences between the amount of time spent living with a single mother compared to two biological parents, we see that socioeconomic factors explained 22% and extended family embeddedness explained 13% of the gap in on-time high school completion. The results for college enrollment echo those of on-time high school completion. For each additional year a child spent with his or her mother and a non-biological parent compared to with both biological parents, socioeconomic factors accounted for 48% of the variance in college enrollment, whereas extended family embeddedness accounted for 19% of the variance in this outcome. Socioeconomic factors explained 36% and extended family embeddedness explained 13% of the gap in college enrollment between children who

spent more time living with a single mother, compared to those who spent more time living with both parents.

Sensitivity Analysis

I assess the robustness of my findings in several ways. First, research suggests that children who experience multiple transitions in family structure face worse educational outcomes than children raised in stable families, independent of the type of stable family structure (Fomby & Cherlin, 2007). In a supplemental analysis, I controlled for whether a child experienced one or more changes in family structure during childhood. Children who spent more time outside of a two-biological-parent family were still less likely to complete high school on-time and enroll in college, and black children in single-mother families remained marginally more likely to finish high school on-time, relative to white children who spent similar periods of time in this family structure.

Second, I considered an alternative approach to measuring family structure that captures both mother's relationship type and transitions (but not biological parental status): (1) stable two-parent family, (2) stable one-parent family, (3) two-parent to one-parent family (4), one-parent to two-parent family, and (5) two or more family transitions. Consistent with my main findings, children who grew up in a stable two-parent family were more likely to graduate high school on-time, compared to children raised in any other family type. Black children raised in a stable one-parent family were more likely to complete high school on-time than white children raised in a stable one-parent family.

Third, my analytic sample includes children who were present in at least half of the waves in which they could have been observed in the PSID. I also ran my analysis on

children who were present in all waves of the study. Results from this more restricted sample are representative of the results that I obtained when I included individuals who were missing in up to 50% of waves. Further, my analytic sample also contains 326 sibling pairs. Given that observations between siblings are non-independent, I ran all models clustering on family unit identifiers rather than on the indicators of the PSID's multistage sampling design and observed similar results.

Finally, research has suggested that there is negative selection into extended families; that is, children who live with extended relatives may do so because their parents lack the resources to live independently (Chase-Lansdale, Brooks-Gunn, & Zamsky, 1994; Pilkauskas & Dunifon, 2016). If this is the case, then the observed negative association between extended family coresidence and on-time high school completion and college enrollment may be attributable, in part to, to the fact that children raised in these households are less well-off to begin with.

To account for factors related to the selection into an extended family, I used propensity score matching (PSM) methods to estimate the average treatment effect of extended family coresidence. This was accomplished by comparing the on-time high school completion and college enrollment of children who spent time in an extended family during childhood with children who never spent time in an extended family but are otherwise similar in terms of family background characteristics. Measures in the matching model included the extended family coresidence status (treatment), child's gender, race, sex, and region, number of children in the household at birth, mother's education, and mother's age, union, and health status at birth. In a sample balanced on these characteristics, children who lived in an extended family for less than or a quarter

or more of their childhood were *not* significantly less likely to finish high school on-time or enroll in college, compared to those who never lived in an extended family. These findings suggest that the negative association between extended family coresidence and children's educational attainment is largely explained by the negative selection into this living arrangement. Findings from PSM methods may differ from those of the logistic regression analyses, which regress toward the mean, if the treatment group (i.e., those likely to experience extended family coresidence) and the control group do not have substantial overlap on characteristics that distinguish the two groups. All in all, however, the results of the sensitivity checks considered here lend confidence to the robustness of my main findings.

Discussion

This study used nationally representative, longitudinal data to examine the association between children's lifetime experience of family structure and their educational attainment, the extent to which this association varied by race/ethnicity, and the relative importance of two hypothesized mechanisms in explaining any observed group differences. More specifically, I assessed the relationship between childhood family structure and on-time high school completion and college enrollment and tested whether racial/ethnic differences in socioeconomic stress and extended family embeddedness mediate these relationships for white, black, and Hispanic children. Results from this study confirm findings from prior research demonstrating that children raised outside of a two-biological-parent family are at an elevated risk of experiencing lower educational attainment than those raised in this family type. They are also consistent with previous studies showing that the consequences of living in a single-

mother family are less negatively impactful for black children, relative to white children who spend similar amounts of time in this family structure (e.g., McLanahan & Sandefur, 1994). This suggests that the experience of single-parenthood for white children has limited generalizability to black children, as the two groups may adjust differently to life in a single-parent family.

I did not, however, observe racial differences in the link between family structure and college enrollment. This indicates that the differential association between family structure and educational attainment, or child wellbeing more generally, may depend on the outcome of interest. Indeed, prior research has identified stronger family structure effects for more proximate outcomes such as behavioral and psychological wellbeing, than more distal ones such as educational attainment (Amato, 2005), and only in some instances have researchers observed racial/differences in these outcomes (Dunifon & Kowaleski-Jones, 2002; Manning & Brown, 2006; McLanahan & Sandefur, 1994). Overall, findings on racial differences suggest that our examination of the impact of family structure on children's educational attainment, and wellbeing broadly speaking, is best approached from a pluralistic perspective, one that does not privilege one family type over another, since family structure does not always have the same social consequences for all groups.

There were no observed differences between whites and Hispanics in the effects of family structure on either measure of educational attainment. While this finding is consistent with Fomby et al. (2010)'s work on racial differences in the effect of family instability on adolescent's risk behavior, it does not preclude the possibility of group differences for other dimensions of child wellbeing. Given the limited number of studies

that focus on Hispanic children, more work is needed to investigate potential differential effects of family structure on child wellbeing for this group.

What accounts for racial/ethnic variation in the association between family structure and educational attainment? Findings from this study suggest that both socioeconomic stress and extended family embeddedness attenuate the effect of family structure on on-time high school completion and college enrollment. Socioeconomic stress, however, appears to have greater relative influence. Differences in socioeconomic resources accounted for 22-48% of the gap in on-time high school completion and college enrollment between amount of time spent in a two-biological-parent family and those living with a mother and nonbiological parent or single mother. Extended family embeddedness factors helped explain roughly 15-20% of the variance in these outcomes. These findings lend support for the socioeconomic stress hypothesis, which posits that the negative effect of familial disruption may be less independently impactful for children of racial/ethnic groups facing a large number of socioeconomic disadvantages to begin with. In contrast, they provide little evidence to support the hypothesis that racial/ethnic minority children's deeper embeddedness in their extended family network protects against the negative effects of familial disruption.

In interpreting these findings, it is important to acknowledge that exposure to socioeconomic hardship is harmful to children, irrespective of race/ethnicity and that black children are not uniquely impervious to the negative consequences of familial disruption. Rather, they may have developed adaptive strategies derived from their structural position in society that aids them in coping with this stressor. Indeed, research suggests that while exposure to racially and economically problematic life circumstances

is detrimental to child wellbeing, black children may develop competencies that help them respond to major life events such as parental separation (Smith and Carlson, 1997). Future work should explore racial/ethnic variation in children's responses to familial disruption and its link to child outcomes.

Given the key role that socioeconomic factors play in explaining the relationship between family structure and children's educational attainment, these results call into question whether welfare funds should be diverted to encourage the formation and maintenance of two-parent nuclear families and discourage nonmarital childbearing (U.S. House of Representatives, 1996), rather than being spent directly on alleviating financial hardships for disadvantaged groups. They also suggest that expectations for the extended family to compensate for family hardship may be misplaced. Extended family embeddedness does not appear to fully protect against the negative impact of living outside of a two-biological-parent family. Therefore, efforts aimed at improving child wellbeing for disadvantaged groups may be more effective by focusing on reducing socioeconomic hardships for low-income families and adopting reasonable expectations for the extended family to meet the needs of its disadvantaged members.

Results should be interpreted within the context of the study's limitations. First, while I included a robust set of indicators of socioeconomic stress and extended family embeddedness, the factors used in this study are not exhaustive. I would have liked to include direct measures of the amount and frequency of practical and emotional support that mothers received from extended family members, as well as measures of relationship quality among extended family members, but was unable to do so due to limitations of the data. This would allow me to more accurately assess the levels of extended family

support available to mothers in various family types, as well the amount of extended family cohesion they experience. Second, the relatively small sample size for Hispanic children diminishes my statistical power, making it difficult to observe statistically significant differences and to generalize to the broader U.S. population for this group. Third, although my use of the birth and marriage history files allows me to retrospectively identify mothers' union status between waves and during skipped waves, I miss children whose mothers attrited. As noted earlier, individuals who attrited were more likely to be economically disadvantaged. To the extent that children of disadvantaged mothers are more likely to have lower levels of educational attainment, attrition is likely to have underestimated the influence of socioeconomic stress on children's on-time completion and college enrollment. Lastly, while the two hypotheses that I tested help partially account for racial/ethnic differences in the association between family structure and children's educational attainment, neither of them fully explain this phenomenon. Future research should investigate how other factors related to children's familial and community context may account for these differences.

Despite its limitations, this study takes important steps towards understanding why black children are less affected by family structure with regard to educational attainment than their white peers. Using nationally representative longitudinal data, this research shows that group differences in access to socioeconomic resources are an important mechanism for explaining this gap. Combined, study findings highlight the importance of examining racial/ethnic differences in the consequences of family structure for children's educational attainment and their wellbeing more generally.

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Table 1. Sample characteristics by race/ethnicity, Panel Study of Income Dynamics, Child Development Supplement, Transition into Adulthood Study, (1985-2015)

Variables	Full Sample	Black	White	Hispanic	Other
Proportion of childhood with two biological parents ^{abc}	0.68	0.33	0.78	0.73	0.62
Proportion of childhood with mother and non-biological partner ^{ab}	0.09	0.12	0.09	0.08	0.10
Proportion of childhood with single mother ^{abc}	0.22	0.55	0.13	0.19	0.28
On-time high school completion ^{abc}	0.79	0.63	0.85	0.74	0.83
College enrollment ^{ab}	0.77	0.61	0.81	0.74	0.76
Female ^a	0.48	0.42	0.49	0.48	0.53
Child's age ^{ab}	24.6	25.1	24.6	24.0	24.0
(SD)	0.09	0.16	0.12	0.31	0.34
Proportion of childhood spent living in the South ^{abc}	0.33	0.59	0.30	0.22	0.24
No. of children ^{abc}	2.33	2.52	2.18	2.80	2.39
(SD)	0.02	0.06	0.02	0.09	0.13
<i>Parents' education</i>					
<HS ^{abc}	0.13	0.15	0.05	0.47	0.17
HS	0.34	0.38	0.32	0.25	0.27
Some college ^{bc}	0.29	0.33	0.27	0.15	0.25
BA or higher ^{abc}	0.25	0.14	0.37	0.13	0.31
Family wealth without home equity ^{abc}	7.24	4.54	8.33	5.97	6.30
(SD)	0.14	0.23	0.17	0.41	0.71
Proportion of childhood mom is employed ^{abc}	0.65	0.60	0.69	0.53	0.57
<i>Neighborhood quality</i>					
Excellent/very good ^{ac}	0.56	0.44	0.71	0.43	0.49
Good ^{ab}	0.26	0.30	0.21	0.32	0.25
Fair/poor ^{ac}	0.18	0.26	0.08	0.25	0.26
>50% of neighbors own their home ^{abc}	0.68	0.43	0.80	0.59	0.45
Neighborhood is completely or fairly safe ^{ac}	0.88	0.74	0.94	0.74	0.90
<i>Mother's age at child's birth</i>					
19 and below ^a	0.12	0.17	0.07	0.13	0.11
20-29 ^c	0.55	0.54	0.54	0.56	0.51
30 and above ^{ac}	0.33	0.27	0.39	0.29	0.36
Proportion of childhood mom is in good health ^{ac}	0.90	0.84	0.93	0.85	0.82
<i>Extended family coresidence</i>					
Never lived with an extended relative ^{ac}	0.60	0.39	0.80	0.62	0.61
Lived with an extended relative for <1/4 of childhood ^{ab}	0.18	0.24	0.13	0.14	0.21
Lived with an extended relative for >=1/4 of childhood ^{ac}	0.22	0.37	0.07	0.24	0.18
<i>No. of extended relatives living in R's neighborhood by quartile</i>					
Bottom 25th percentile ^{ac}	0.45	0.35	0.53	0.45	0.53
25th-50th percentile	0.07	0.07	0.07	0.04	0.08
50th-75th percentile ^{ac}	0.23	0.27	0.19	0.27	0.16
75th-99th percentile ^{ac}	0.25	0.31	0.20	0.25	0.23
<i>Frequency of contact with extended relatives and friends</i>					
Less than once a month	0.24	0.28	0.19	0.30	0.25
One to three times a month ^a	0.16	0.13	0.18	0.15	0.19
Greater than or equal to once a week ^{bc}	0.60	0.59	0.62	0.55	0.55

PCG satisfaction with the level of practical support received from extended family members ^{abc}	5.13	5.32	4.89	5.83	5.53
(SD)	0.04	0.10	0.05	0.12	0.17
PCG satisfaction with the level of emotional support received from extended family members ^{bc}	5.47	5.28	5.41	5.76	5.86
(SD)	0.04	0.10	0.05	0.14	0.15
No. of Observations	2,589	1,105	1,163	183	137

Notes: Values are percentages unless otherwise noted. Values are weighted to account for the complex multistage clustered design of the PSID. Total for the time-varying characteristics is the child-year average. ^aBlack-White difference significant at $p < 0.05$. ^bBlack-Hispanic difference significant at $p < 0.05$. ^cHispanic-White difference significant at $p < 0.05$. No.=Number. SD=Standard deviation. PCG=Primary caregiver.

Table 2: Odds ratios from logistic regression models predicting on-time high school completion, Panel Study of Income Dynamics, Child Development Supplement (CDS), Transition into Adulthood Supplement (TAS), 1985-2015

	Model 1	Model 2	Model 3	Model 4	Model 5
	OR	OR	OR	OR	OR
Proportion of childhood with single mother	0.466*** (-3.141)	0.231*** (-3.858)	0.428** (-2.055)	0.294*** (-3.220)	0.462* (-1.837)
Single mother X Black		3.049** (2.219)	2.254 (1.557)	2.896** (2.119)	2.239 (1.547)
Single mother X Hispanic		1.750 (0.667)	1.473 (0.449)	1.673 (0.619)	1.388 (0.376)
Proportion of childhood with mother and non-biological partner	0.233*** (-4.309)	0.271*** (-3.118)	0.446* (-1.752)	0.312*** (-2.795)	0.459* (-1.695)
Mother and non-biological partner X Black		3.822* (1.723)	2.889 (1.325)	5.264** (2.157)	3.596 (1.621)
Mother and non-biological partner X Hispanic		0.726 (-0.267)	0.374 (-0.763)	0.698 (-0.289)	0.362 (-0.795)
<i>Race/ethnicity (vs. White)</i>					
Black	0.473*** (-3.701)	0.280*** (-4.614)	0.412*** (-3.114)	0.310*** (-4.319)	0.424*** (-3.074)
Hispanic	0.600** (-2.179)	0.578* (-1.797)	0.927 (-0.209)	0.688 (-1.174)	1.016 (-0.044)
Female	1.676*** (3.774)	1.652*** (3.686)	1.728*** (3.856)	1.675*** (3.687)	1.738*** (3.836)
Child's age	0.938*** (-3.163)	0.943*** (-2.924)	0.935*** (-3.055)	0.946*** (-2.687)	0.937*** (-2.927)
Proportion of childhood spent living in the South	0.790 (-1.564)	0.807 (-1.414)	0.839 (-1.142)	0.831 (-1.236)	0.855 (-1.027)
No. of children	0.798*** (-3.034)	0.783*** (-3.329)	0.854** (-2.018)	0.792*** (-3.131)	0.856** (-1.996)
<i>Parents' education (vs. BA or higher)</i>					
Less than high school			0.495** (-2.522)		0.509** (-2.416)
High school			0.366*** (-4.737)		0.384*** (-4.488)
Some college			0.522*** (-2.958)		0.520*** (-2.955)
Family wealth without home equity			1.001 (0.095)		1.000 (-0.022)
Proportion of childhood mom is employed			1.099 (0.393)		1.060 (0.245)
<i>Neighborhood quality (vs. excellent/very good)</i>					
Good			0.796 (-1.243)		0.784 (-1.320)
Poor			0.781 (-1.146)		0.784 (-1.121)
>50% of neighbors own their home ^{abc}			1.153 (0.713)		1.189 (0.872)
Neighborhood is completely or fairly safe			1.357		1.295

				(1.456)	(1.244)
<i>Mother's age at child's birth</i>					
20-29				2.201***	2.109***
				(3.598)	(3.325)
30 and above				2.108***	2.000***
				(3.008)	(2.737)
Proportion of childhood mom is in good health				3.526***	3.501***
				(3.691)	(3.707)
<i>Extended family coresidence (vs. never lived with an extended relative)</i>					
Lived with an extended relative for <1/4 of childhood				0.705*	0.839
				(-1.822)	(-0.911)
Lived with an extended relative for >=1/4 of childhood				0.613**	0.820
				(-2.456)	(-0.972)
<i>No. of extended relatives living in R's neighborhood by quartile (vs. below 25th percentile)</i>					
25th-50th percentile				1.025	1.172
				(0.074)	(0.456)
50th-75th percentile				0.689*	0.715
				(-1.848)	(-1.614)
75th-99th percentile				1.071	1.067
				(0.329)	(0.300)
<i>Frequency of contact with extended relatives (vs. less than once a month)</i>					
One to three times a month				1.458*	1.425
				(1.721)	(1.590)
Greater than or equal to once a week				1.387**	1.280
				(2.006)	(1.503)
PCG satisfaction with practical support received from extended family members				0.954	0.970
				(-0.707)	(-0.444)
PCG satisfaction with practical support received from extended family members				1.088	1.048
				(1.286)	(0.680)
Wald Test <i>p</i> -value		0.003***	0.002***	0.002***	0.001***
Constant	50.663***	51.588***	8.333***	31.266***	6.847**
	(7.009)	(7.187)	(2.886)	(5.140)	(2.380)
Observations	2,589	2,589	2,589	2,589	2,589

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: "Other" race category omitted. Analyses use sample weights to account for the complex multistage clustered design of the PSID.

The Wald test provides evidence for whether the family structure-race/ethnicity interactions are jointly significant. No.=Number.

OR=Odds ratios.

Table 3: Odds ratios from logistic regression models predicting college enrollment, Panel Study of Income Dynamics, Child Development Supplement (CDS), and Transition into Adulthood Supplement (TAS), 1985-2015

	Model 1	Model 2	Model 3	Model 4	Model 5
	OR	OR	OR	OR	OR
Proportion of childhood with single mother	0.429*** (-3.302)	0.348*** (-2.853)	0.915 (-0.213)	0.450** (-2.048)	1.007 (0.016)
Single mother X Black		1.663 (0.974)	0.928 (-0.131)	1.631 (0.921)	0.906 (-0.173)
Single mother X Hispanic		0.510 (-0.803)	0.264 (-1.416)	0.470 (-0.845)	0.239 (-1.498)
Proportion of childhood with mother and non-biological partner	0.228*** (-4.497)	0.208*** (-3.845)	0.435* (-1.762)	0.241*** (-3.492)	0.445* (-1.727)
Mother and non-biological partner X Black		1.811 (0.680)	1.044 (0.043)	2.489 (1.061)	1.215 (0.198)
Mother and non-biological partner X Hispanic		6.623* (1.800)	3.404 (1.028)	7.594* (1.806)	3.812 (1.084)
<i>Race/ethnicity (vs. White)</i>					
Black	0.740 (-1.363)	0.552* (-1.841)	0.975 (-0.073)	0.638 (-1.389)	1.052 (0.146)
Hispanic	1.009 (0.035)	0.991 (-0.028)	1.966* (1.739)	1.180 (0.487)	2.160* (1.924)
Female	1.737*** (3.884)	1.739*** (3.878)	1.841*** (4.077)	1.803*** (3.985)	1.867*** (4.056)
Child's age	1.020 (0.989)	1.023 (1.127)	1.022 (0.941)	1.025 (1.224)	1.019 (0.844)
Proportion of childhood spent living in the South	0.834 (-1.090)	0.862 (-0.893)	0.902 (-0.597)	0.861 (-0.903)	0.889 (-0.683)
No. of children	0.782*** (-3.207)	0.777*** (-3.331)	0.888 (-1.363)	0.778*** (-3.292)	0.882 (-1.447)
Proportion of childhood mom is in good health			1.410 (0.898)		1.407 (0.897)
<i>Parents' education (vs. BA or higher)</i>					
Less than high school			0.270*** (-3.903)		0.280*** (-3.823)
High school			0.214*** (-6.413)		0.223*** (-6.221)
Some college			0.373*** (-3.948)		0.374*** (-3.952)
Family wealth without home equity			1.046*** (2.965)		1.047*** (3.056)
Proportion of childhood mom is employed			1.087 (0.303)		1.050 (0.176)
<i>Neighborhood quality (vs. excellent/very good)</i>					
Good			0.890 (-0.605)		0.888 (-0.613)
Poor			0.837 (-0.731)		0.826 (-0.781)
>50% of neighbors own their home ^{abc}			1.323 (1.322)		1.364 (1.456)
Neighborhood is completely or fairly safe			1.381 (1.411)		1.405 (1.477)
<i>Mother's age at child's birth</i>					
20-29			1.820** (2.463)		1.780** (2.325)
30 and above			1.870**		1.756**

				(2.230)	(1.988)
<i>Extended family coresidence (vs. never lived with an extended relative)</i>					
Lived with an extended relative for <1/4 of childhood				0.572***	0.738
				(-2.891)	(-1.545)
Lived with an extended relative for >=1/4 of childhood				0.581**	0.834
				(-2.550)	(-0.798)
 <i>No. of extended relatives living in R's neighborhood by quartile (vs. below 25th percentile)</i>					
25th-50th percentile				0.963	1.254
				(-0.102)	(0.570)
50th-75th percentile				0.767	0.846
				(-1.140)	(-0.705)
75th-99th percentile				1.155	1.253
				(0.690)	(1.056)
 <i>Frequency of contact with extended relatives (vs. less than once a month)</i>					
One to three times a month				1.227	1.135
				(0.851)	(0.513)
Greater than or equal to once a week				1.134	1.015
				(0.736)	(0.083)
 PCG satisfaction with practical support received from extended family members					
				0.928	0.940
				(-1.108)	(-0.844)
 PCG satisfaction with practical support received from extended family members					
				1.085	1.026
				(1.211)	(0.344)
Wald Test <i>p</i> -value		0.209	0.501	0.191	0.451
Constant	5.891***	5.820***	1.540	4.951**	1.921
	(3.226)	(3.287)	(0.546)	(2.473)	(0.747)
Observations	2,436	2,436	2,436	2,436	2,436

t-statistics in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Notes: "Other" race category omitted. Analyses use sample weights to account for the complex multistage clustered design of the PSID. The Wald test provides evidence for whether the family structure-race/ethnicity interactions are jointly significant. No.=Number. OR=Odds ratios.

Table 4. Average partial effects of socioeconomic stress and extended family embeddedness on children's educational attainment, Panel Study of Income Dynamics, Child Development Supplement (CDS), and Transition into Adulthood Supplement (TAS), 1985-2015

Family structure	Socioeconomic stress		Extended family embeddedness	
	Mother and non-biological partner	Single mother	Mother and non-biological partner	Single mother
<i>On-time high school completion</i>				
Reduced model	-0.176*** (0.024)	-0.221*** (0.039)	-0.177*** (0.025)	-0.220*** (0.039)
Full model	-0.102*** (0.027)	-0.173*** (0.040)	-0.151*** (0.026)	-0.192*** (0.041)
Percentage change	42.0%	21.7%	14.7%	12.7%
Observations	2,589	2,589	2,589	2,589
Family structure	Socioeconomic stress		Extended family embeddedness	
	Mother and non-biological partner	Single mother	Mother and non-biological partner	Single mother
<i>College enrollment</i>				
Reduced model	-0.155*** (0.025)	-0.169*** (0.039)	-0.157*** (0.026)	-0.170*** (0.040)
Full model	-0.082*** (0.027)	-0.109*** (0.041)	-0.128*** (0.027)	-0.148*** (0.040)
Percentage change	48.4%	35.5%	18.5%	12.9%
Observations	2,436	2,436	2,436	2,436

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Table 4 describes the average partial effect of family structure on on-time high school completion and college enrollment in the reduced (baseline) and full models, estimated using the Karlson, Hohm and Breen (KHB) method for decomposing total effects (Kohler, Karlson and Holm 2011).