

The Fragile Families and Child Wellbeing Study changed its name to The Future of Families and Child Wellbeing Study (FFCWS). Due to the issue date of this document, FFCWS will be referenced by its former name. Any further reference to FFCWS should kindly observe this name change.

**Multiracial infants and low birth weight:
Evidence from the Fragile Families and Child Wellbeing Study**

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Abstract

Using data from the Fragile Families and Child Wellbeing Study, we examine how the birth outcomes of multiracial infants differ from those of their mono-racial counterparts and the extent to which disparities in birth outcomes are due to variation in socioeconomic background, prenatal health behaviors, and availability of social support. We find that (1) the birth outcomes of multiracial infants typically fall somewhere in between those of their mono-racial counterparts, (2) outcomes vary by mother's race/ethnicity for some multiracial combinations, and (3) socioeconomic disparities account for a significant portion of the difference in rates of low birthweight between multi- and mono-racial infants born to White parents, while masking differences between infants born to Hispanic parents. Finally, differences in prenatal health behaviors and social support from baby's father also play an important role in accounting for disparities in birth outcomes between multiracial infants and their mono-racial counterparts.

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Over the past four decades, the number of interracial marriages has increased substantially in the United States, with intermarriages comprising 15 percent of all new marriages in 2010 as compared to 7 percent in 1980 (Qian and Lichter 2007; Wang 2012). A rise in intermarriage rates signals that the barriers to social interaction and intimacy across race/ethnic groups have broken down and that individuals of different race/ethnic backgrounds have the opportunity to engage in frequent, equal status interactions (Alba 2009; Qian and Lichter 2007). More broadly, it signals a rise in multiracial individuals who are expected to reduce race/ethnic distinctions in future generations (Alba 2009; Sandefur et al. 2004).

Research on intermarriage is typically motivated in terms of the increasing demographic relevance of multiracial children born and their ability to blur race/ethnic boundaries. However, only a small number of studies have actually compared the outcomes of multiracial children with those of their mono-racial counterparts (e.g., Bratter and Damaske 2013; Bratter and Gorman 2011; Collins and David 1993; Parker 2000). Moreover, the small number of studies on maternal and infant health incorporating multiracial infants typically focuses on infants of Black and White heritage (e.g., Collins et al. 1993; Migone et al. 1991; Parker 2000). Multiracial infants of Hispanic heritage are largely missing in this body of work although Hispanics are more likely to intermarry and constitute a larger share of the US population than Blacks (Gullickson 2006; Landale and Oropesa 2007). Among newlyweds in 2008, 9 percent of whites, 16 percent of

blacks, and 26 percent of Hispanics married someone outside of their race/ethnic group¹ (Passel et al. 2010). Finally, we know very little about the protective and risk factors that contribute to disparities in birth outcomes between multiracial infants and their mono-racial counterparts.

Using data from the Fragile Families and Child Wellbeing Study (FFS), we compare the rates of low birthweight of multiracial infants with those of their mono-racial counterparts. We begin by comparing the birth outcomes at the household level (e.g., infants of White-Black heritage versus mono-racial Whites and Blacks). Next, we ask whether the birth outcomes of multiracial infants of the same race/ethnic heritage vary according to the mother's race/ethnicity (e.g., infants born to Hispanic mothers and Black fathers versus infants born to Black mothers and Hispanic fathers). Finally, we investigate how three risk or protective factors – socioeconomic conditions, prenatal health behaviors, and availability of social support from baby's father and extended kin – account for differences in birth outcomes between multiracial infants and their mono-racial peers. We focus on birth outcomes because low birthweight is a leading cause of infant mortality and subsequent morbidity among survivors (Brooks-Gunn et al. 1993; Reichman et al. 2008) and because race/ethnic disparities in low birthweight have been widely documented (Reichman et al. 2008). Together, these analyses allow us to assess where multiracial families fit within the race/ethnic stratification system in the United States and whether a rise in demographic salience of multiracial infants is associated with increases or decreases in race/ethnic disparities (Teitler et al. 2007).

¹ There are no gender differences in intermarriage rates among Whites and Hispanics; whereas, there is a stark gender contrast in intermarriage rates among blacks: 22 percent of black men as compared with 9 percent of black women (Passel et al. 2010).

Our analyses add to the small but growing literature on the wellbeing of multiracial infants in two important ways. First, we consider the birth outcomes of multiracial infants of Hispanic descent in addition to the birth outcomes of infants born to White and Black parents. Second, we rely on a unique data source that allows us to examine the extent to which group differences in mother's socioeconomic circumstances, prenatal health behaviors, and social support from baby's father and extended kin engender inequalities in birth outcomes between multiracial infants and their mono-racial counterparts.

BACKGROUND

Race/ethnic disparities in birth outcomes

Prior work in the United States has consistently found large disparities in birth outcomes by race/ethnicity, with White-Black differentials being particularly large. In 2010, 7.1 percent of infants born to non-Hispanic White mothers and 13.5 percent of infants born to non-Hispanic Black mothers were low birthweight (Hamilton 2012: Table 8). Infants born to Hispanic mothers had rates on par with those of non-Hispanic Whites: 7.0 percent (Hamilton et al. 2012: Table 8).

Most studies of low birthweight classify children according to mother's race/ethnicity, with very little attention given to the birth outcomes of multiracial infants. Furthermore, the small number of studies that have made efforts to integrate multiracial infants into their analysis have focused on infants of Black-White heritage (e.g., Collins and David 1993; Gold et al. 2010; Hessol et al. 1998; Ma 2008; Mangold and Powell-Grinell 1991). These studies show a gradient of risk in adverse birth outcomes according to parents' joint race/ethnicity (see Srinivasjois et al. 2012 for a review), with mono-racial White infants having the most favorable outcomes, mono-racial Black infants having the least favorable outcomes, and multiracial infants falling

somewhere in between. There is also evidence that among multiracial infants of White-Black descent, infants born to Black mothers and White fathers fare considerably worse than their counterparts born to White mothers and Black fathers (Parker 2000).

Although these studies provide valuable insights, the literature is somewhat limited in that studies do not consider multiracial infants of Hispanic descent. This omission is particularly problematic in today's US context where (1) Hispanics are the largest minority group in the country, and (2) Hispanics intermarry at considerably higher rates than Whites and Blacks (Landale and Oropesa 2007).

Explanations on Race/ethnic Differences in Low Birthweight

Past studies suggest that race/ethnic disparities in birth outcomes are due to differential exposure to protective/risk factors during pregnancy, including socioeconomic status, prenatal health behaviors, and the availability of social support (Lu et al. 2010). In this section, we review studies documenting how each protective and risk factor might generate disparities in birthweight among multiracial infants and their mono-racial counterparts.

Socioeconomic circumstances of multiracial infants and birth outcomes

Socioeconomic status is a powerful predictor of adverse birth outcomes (Almeda 2013; Hughes and Simpson 1995; Reichman et al. 2008) and thus scholars often attribute the unfavorable birth outcomes of infants born to minority mothers to their poor socioeconomic positions (Almeda et al. 2013; Hughes and Simpson 1995; Landale et al. 2000; Reichman et al. 2008; Teitler et al. 2007). We extend this framework and argue that differences in socioeconomic status are important for explaining differences in birth outcomes among multi- and mono-racial infants of Black-White heritage, but less important for differences in birth outcomes among infants of Hispanic heritage.

Based on the literature on interracial marriage, socioeconomic variation between parents of multiracial infants and their mono-racial counterparts may show three patterns of variation. First, assuming little significant barriers to social interaction between race/ethnic groups, we would expect that parents of multiracial infants are not a select group in terms of socioeconomic characteristics, in which case the socioeconomic circumstances of multiracial infants should fall in between those of their mono-racial counterparts.

Alternatively, parents who intermarry may have characteristics that make them less attractive on the marriage market and thus push them to broaden their pool of potential mates (Lewis and Oppenheimer 2000; Choi & Mare 2012). In this case, we might expect parents of multiracial infants to be more disadvantaged than their peers in terms of socioeconomic characteristics, implying that their children will have worse birth outcomes. Finally, parents of multiracial infants may be positively selected with respect to socioeconomic status. Colleges and universities provide propitious settings for interracial unions because they tend to bring together young men and women who are heterogeneous in terms of ascribed characteristics (Mare 1991; Kalmijn 1998). If college educated couples are more likely to intermarry than less educated couples, these families would be socioeconomically advantaged relative to their mono-racial peers, resulting in more advantageous birth outcomes among these multiracial infants.

Past empirical work generally supports the first scenario, indicating that the socioeconomic circumstances of multiracial racial infants fall somewhere in between those of their monoracial counterparts (Bratter and Kimbro 2013; Panico and Nazroo 2011). Bratter and Kimbro (2013) find that multiracial kindergarteners in the United States have poverty or near poverty rates that are in between those of their mono-racial counterparts, and Panico and Nazroo (2011) report similar results for British infants during the first year of life. Results describing the

socioeconomic characteristics of interracial couples echo these findings, with Blacks and Hispanics married to White spouses having higher levels of education, income, and likelihood of residing in more affluent neighborhoods than their counterparts in endogamous unions (Gullickson 2006; Qian and Lichter 2007).

Taken together, these findings suggest that the socioeconomic circumstances of multiracial infants will fall somewhere in-between those of their mono-racial counterparts. We may also expect that the birth outcomes of multiracial infants will also fall somewhere in between those of their mono-racial counterparts, given the strong positive association between socioeconomic status and birth outcomes.

Prenatal health behaviors and birth outcomes of multiracial infants

Socioeconomic explanations, however, have been called into question in light of mounting evidence that the birth outcomes of Hispanic infants, especially infants born to immigrant mothers, are as favorable as those of non-Hispanic Whites (Almeda et al. 2013; Landale et al. 2000; Reichman et al. 2008). This paradoxical pattern – favorable birth outcomes despite socioeconomic disadvantage – is often referred to as the “immigrant health paradox”. The immigrant health paradox is typically attributed to Hispanic mother’s adherence to culturally-informed, protective health behaviors (Landale et al. 2000; Mendoza 2009; Reichman et al. 2008). According to this view, Latin American culture puts an exceptionally high value on motherhood, which, in turn, leads Hispanic women to engage in fewer deleterious health behaviors during pregnancy than their US-born counterparts (Guendelman and English 1995; Landale et al. 2000).

Hispanic women’s adherence to culturally-based, protective norms is expected to decrease as immigrant women and their descendants assimilate to US values and behaviors

(Guendelman and English 1995; Landale et al. 2000). Indeed, empirical evidence consistently shows that Hispanic women's rates of drinking, smoking, use of illicit drugs, and poorer nutritional intake increase with assimilation (Lara et al. 2005; Zambrana et al. 1997). Because intermarriage is the quintessential marker of assimilation, (Gordon 1964; Qian and Lichter 2007), we would expect multiracial children from Hispanic backgrounds to have worse birth outcomes than mono-racial children from Hispanic backgrounds, all else being equal. We also would expect multiracial children with Hispanic mothers and non-Hispanic fathers to have better outcomes than multiracial children with non-Hispanic mothers and Hispanic fathers.

Social support from infant's father and extended kin and birth outcomes of multiracial infants

Differences in availability of social support from partners and extended kin may also be associated with race/ethnic disparities in birth outcomes. Prior work has consistently shown that expectant mothers who have a close relationship with their partners are considerably less likely to experience adverse birth outcomes than their counterparts in poorer quality unions (Feldman et al. 2000). Social support from extended kin may also have beneficial effects on the birth outcomes by providing expectant mothers access to emotional, informational, and material resources that may mitigate the physical and psychological stressors associated with pregnancy (Almeda et al. 2013; Feldman et al. 2000).

Differences in the availability of social support from partners and extended kin may also contribute to disparities in birth outcomes between multiracial infants and their mono-racial counterparts. Although social acceptance of interracial unions has increased in recent years, parents of multiracial infants may experience rejection from kin because they have violated enduring norms about whom they should marry (Killian 2001; Bratter and King 2008; Wang 2012). Opposition from family members and extended kin may adversely affect the relationship

quality between partners and result in the removal of emotional, monetary, and informational support from extended kin (Bratter and King 2008; Killian 2001). Lower levels of relationship quality between partners and less support from extended kin are expected to have deleterious consequences of the psychological and physical wellbeing of expectant mothers, which, in turn, may lower birth weight. To the best of our knowledge, no study has investigated the extent to which differential availability of social support from extended kin and poorer relationship quality account for disparities in birth outcomes between multiracial infants and their mono-racial counterparts.

DATA AND METHODS

Data

The Fragile Families and Child Wellbeing Study (FFS) is a longitudinal birth cohort study following 4,898 children born in large US cities between 1998 and 2000, including 3,712 children born to unwed mothers and 1,186 children born to married mothers (Reichman et al. 2001). Between the spring of 1998 and the fall of 2000, parents were interviewed in 75 hospitals shortly after the cohort baby was born. During these interviews, parents were asked to provide information about the conditions and capabilities of new parents as well as the cohort children's wellbeing. Follow-up interviews were conducted with both parents when the cohort child was 1, 3, 5, and 9 years of age. We focus on information collected in the baseline interview (i.e., within 48 hours of child birth).

FFS is ideally suited for the present analysis because of the several reasons. First, the study collected data on the race/ethnic characteristics of both parents, infant's birth weight, mother's socioeconomic circumstances during pregnancy, mother's health behaviors and medical care during pregnancy, including frequency of drinking and smoking as well as the timing of prenatal care. Second, to the best of our knowledge, FFS is the only study to collect detailed

accounts of social support from baby's father and extended kin available to mothers during pregnancy. And finally, FFS is particularly well-suited to capture mother's conditions and behaviors during pregnancy because the data were collected so close to the infant's birth (i.e., within 48 hours of child birth).

Sample

We restrict our analyses to singleton infants born to non-Hispanic White, Black, and Hispanic mothers and fathers. We further restrict our sample to infants whose mothers provided reports about birth weight (41 cases or 0.9%). We also include only those cases with non-missing data on mother's socioeconomic circumstances, health behaviors during pregnancy, and demographic characteristics (97 cases or 2.2%). Finally, to obtain reliable estimates, we restrict our sample to mixed-race parents with at least 50 cases, which means we exclude infants born to Black mothers and White fathers (18 cases or 0.4%). These restrictions yield an analytical sample consisting of 4,249 cohort children.

Measures

Dependent variable

Low birth weight is measured as a dichotomous variable distinguishing among low birth weight infants (<2500 g or <5.5 pounds) and their heavier counterparts.

Independent variable

Our study relies on two independent variables to categorize mono- and multi-racial infants into various categories depending on their race/ethnic heritage. The first variable counts the number of parents who possess certain race/ethnic profiles and does not pay attention to the gender of the parent. The second variable describes the parents' joint race/ethnicity, focusing on both the gender and race/ethnic profile of each parent.

Infant's race/ethnic heritage. We rely on mother's self reports about their own race/ethnicity to classify respondents into three categories: (1) non-Hispanic Whites, (2) non-Hispanic Blacks, and (3) Hispanics. Infants are classified in an analogous fashion by father's race/ethnicity. Once constructed, we cross-classify mother's and father's race/ethnicity and classify infants into the following six categories depending on their race/ethnic heritage : (1) mono-racial Whites; (2) mono-racial Blacks; (3) mono-racial Hispanics; (4) White – Black infants; (5) White-Hispanic infants; and (6) Hispanic-Black infants.

Infant's joint race/ethnic profiles. This variable is constructed in a similar fashion as infant's race/ethnic heritage, only this time we consider the gender of the parent belonging to the various race/ethnic groups. Using this criterion, we are able to classify infants into 8 categories: (1) mono-racial Whites; (2) mono-racial Blacks; (3) mono-racial Hispanics; (4) White mothers-Black fathers; (5) White mothers- Hispanic fathers; (6) Hispanic mothers – White fathers; (7) Hispanic mothers –Black fathers; and (8) Black mothers – Hispanic fathers. Recall, infants born to Black mothers-White fathers are excluded due to their small sample size (18 cases).

Mother's socioeconomic status. We use five measures to capture mother's socioeconomic circumstances during pregnancy: *mother's education* (<12, 12, 13-15, 16+), *father's education* (<12, 12, 13-15, 16+, missing), *father's employment status at birth* (unemployed, employed, missing), *mother's marital status* (married, cohabiting, other), *household income* (less than 50 % of median US income, 50 % or more of median US income); and *insurance status* (public, private, and other).

Mother's prenatal health behaviors. We use three measures to capture mother's prenatal health behaviors: *drank during pregnancy* (yes, no); *smoked during pregnancy* (yes, no); *drug*

use during pregnancy (yes, no); and *timing of initiation of prenatal care* (first trimester, second or higher trimester, and no care).

Social support from baby's father during pregnancy. To measure the amount of social support available to the expectant mother from the baby's father, we rely on two indicators of parents' relationship quality: couple joint activity index and couple disagreement index. *Couple activity index* is constructed using factor analysis and the answers to four questions regarding joint participation in activities that parents engaged in during pregnancy (i.e., went out to a movie or sporting event, visited friends, ate out in a restaurant, and solved problems). This index, which ranges from 0 (no interaction) to 1 (a lot of interaction), has a Cronbach α of 0.73. *Couple disagreement index* is constructed using factor analysis and the answers to six questions regarding subjects of disagreements between infant's parents (i.e., sex, faith, money, spending, pregnancy, and drug use). This index, which ranges from 0 (absence of conflict) to 1 (high conflict), has a Cronbach α of 0.66.

Social support from extended kin during pregnancy. We rely on three variables to capture the availability of social support from extended kin². *Whether extended kin gave mother a place to live during pregnancy* (yes; no); *whether extended kin gave financial help during pregnancy* (yes; no); and *whether extended kin provided help with child care during pregnancy* (yes; no). Extended kin are defined as mother's parents, baby's paternal grandparents, and other relatives.

² We also constructed an index to measure the amount of social support from extended kin using factor analysis, but the index had a Cronbach α of 0.53, which means that the error variance across the three measures is too high for them to be reliably integrated as a single measure. Our analysis, therefore, relies on three dichotomous variables capturing distinct dimensions of social support from extended kin.

Demographic characteristics. Our models also include five demographic controls identified by prior work as important determinants of low birthweight: *mother's age* (<20, 20-34, 35+), *father's age* (<20, 20-34, 35+), *mother's nativity status* (foreign-born, US-born), *children's sex* (girl, boy), and *parity* (first born, second or higher order parity).

Analytic strategy

Our analysis is comprised of two parts. The first part describes how the birth outcomes of multiracial infants differ from those of their mono-racial counterparts. We begin by documenting variations in birth outcomes according to the infant's race/ethnic heritage. We then investigate whether birth outcomes among multi-racial infants differ according to the mother's race/ethnicity. For example, among infants of Hispanic and Black descent, we ask whether infants born to Black mothers and Hispanic fathers (BMHF) have better or worse outcomes than infants born to Hispanic mothers and Black fathers (HMBF).

The second stage of our analysis assesses the extent to which three protective/risk factors – socioeconomic circumstances, prenatal health behaviors, and social support from infant's father and extended kin- account for disparities in birth outcomes between multiracial infants and their mono-racial counterparts. To do so, we first describe differences in the socioeconomic circumstances, prenatal health behaviors, and availability of social support by infant's joint race/ethnic profiles³. We then employ five additive logistic regression models to determine the extent to which the different protective/risk factors contribute to disparities in birth outcomes by

³ We conducted analogous analysis for disparities in birth outcomes by infant's race/ethnic heritage (i.e., does not also consider mother's race/ethnicity), but do not show them in the results section given results showing that birth outcomes differ according to the gender of the parent who belong to the various race/ethnic groups. These results are available upon request.

infant's joint race/ethnic profiles. Specifically, Model 1 includes parent's joint race/ethnicity and demographic controls (i.e., infant's gender, parity, mother's age, mother's nativity, and father's age). Model 2 adds parent's socioeconomic characteristics (i.e., mother's education, father's education, father's employment, poverty ratio, insurance status, and mother's marital status) to the existing model. Model 3 adds prenatal health behaviors⁴ (i.e., drinking, smoking, and timing of prenatal care) to Model 1. Model 4 adds availability of social support from baby's father and extended kin during pregnancy to Model 1 (i.e., couple activity index, couple disagreement index⁵, and whether extended kin gave them a place to live, financial help, and child care help). Model 5 include all the covariates. All models adjust for the clustering within cities using svy command in STATA.

Three analytical steps deserve particular mention. First, we report predicted percentages of low birthweight (<2500 grams) instead of odds ratios for two reasons: (1) we need to assess how the birth outcomes of multiracial infants compare with those of two reference groups: mono-racial infants with mother's and father's race/ethnicity, and (2) prior work has shown that coefficients capturing group differences should not be compared across models including distinct covariates because they provide invalid conclusions about the residual variation across groups (Allison 1999). Second, we do not focus solely on statistical significance. Rather, we look at the

⁴ We ran consistency checks using models that included mother's health status at birth under the assumption that mother's health status at birth serves as proxy for mother's health status at pregnancy. Our general results change little with (or without) the inclusion of this covariate. These results are available upon request.

⁵ We also ran models that included *duration of the relationship*. The results change little with the addition of this covariate. These results are available upon request.

direction and size of the disparities in birth outcomes in addition to statistical significance because cross-classifying mother's and father's race/ethnicity yields small sample sizes for certain multiracial groups. Table 3, however, shows which results are statistically significant⁶. Finally, our analyses are unweighted in part to maximize sample size and in part because sampling weights may distort estimates that rely on small Ns.

RESULTS

Disparities in birth outcomes between multiracial infants and their mono-racial counterparts

We begin by documenting variation in rates of low birth weight by infant's race/ethnic heritage. Our findings on the low birth weight of mono-racial infants are consistent with what is widely known in the literature about race/ethnic disparities in birth outcomes: (1) infants born to White parents have better birth outcomes than those born to Black parents, and (2) infants born to Hispanic parents have similar, if not better, birth outcomes than infants born to White parents (Landale et al. 2000; Palloni and Morenoff 2001; Teitler et al. 2012). Our comparisons of multiracial infants with their mono-racial counterparts reveal that the birth outcomes of multiracial infants fall somewhere in between those of their mono-racial counterparts. For

⁶ To the extent possible given the limited number of variables in the US vital statistics data, consistency checks were using pooled data from the 1998, 1999, and 2000 US vital statistics data. These supplementary analyses yield results that are consistent with those obtained from our unweighted analyses. Differences in birth outcomes that are not statistically in our study are statistically significant in these supplementary analyses, which suggest that the absence of statistical significance may be due to power issues arising due to the small number of multiracial infants in some groups. These results are available upon request.

instance, 10 percent of Black-Hispanic infants are born with low birth weight, as compared with 14 percent of mono-racial Blacks and 6 percent of mono-racial Hispanics.

Figure 1 goes here.

Next, we describe differences in birth outcomes among multiracial infants with the same race/ethnic heritage but different mothers' race/ethnicity (e.g., infants born to White mothers and Hispanic fathers vs. infants born to Hispanic mothers and White fathers). Figure 2 summarizes our results. Among White-Hispanic infants, mother's race/ethnicity appears to have little impact on birth outcomes. Specifically, 7 percent of infants born to White mothers and Hispanic fathers (WMHF) and 8 percent of infants born to Hispanic mothers and White fathers (HMWF) are born with low birth weight. In contrast, among Black-Hispanic infants, mother's race/ethnicity appears to be an important determinant of birth outcomes, with infants born to Black mothers faring considerably worse than those born to Hispanic mothers. In fact, the rates for infants born to Hispanic mothers and Black fathers (HMBF) mirror more closely those of mono-racial Hispanics; whereas, the rates for infants born to Black mothers and Hispanic fathers (BMHF) mirror more closely those of mono-racial Blacks. Specifically, 13 percent of BMHF and 8 percent of HMBF are born with low birthweight, as compared with 14 percent of mono-racial Blacks and 6 percent of mono-racial Hispanics. These results are consistent with past findings suggesting that maternal race/ethnicity is an important predictor of birth outcomes among multiracial infants with a Black parent (Parker 2000; Migone et al. 1991). We wish to note that cannot make these comparisons for infants of White-Black heritage due to the small number of cases of infants born to Black mothers and White fathers (BMWF)⁷.

⁷ Eleven percent of the 18 infants born to Black mothers and White fathers (BMWF) have low birth weight.

Figure 2 goes here.

All together, our results show that the birth outcomes of multiracial infants fall somewhere in between those of their mono-racial counterparts. They also show that in some instances, pattern of outcomes depends on mother's race/ethnicity. Specifically, among infants of Black and Hispanic descent, rates of low birthweight are considerably higher among infants born to Black mothers and Hispanic fathers (BMHF) than infants born to Hispanic mothers and Black fathers (HMBF) whereas among infants born to White-Hispanic couples, mother's race/ethnicity is not associated with birth outcomes. The remainder of the paper focuses on differences by infant's race/ethnic heritage as well as differences in mother's race/ethnic profile in lieu of differences in birth outcomes among infants of the same race/ethnic heritages with varying mother's race/ethnic profiles.

Socioeconomic disparities between multiracial infants and their mono-racial counterparts

Table 1 describes variations in infant's socioeconomic background by infant's joint race/ethnic profiles. Our findings for mono-racial infants confirm what is widely known in the literature: (1) White parents are more socioeconomic advantaged than minority parents; (2) Hispanic parents have considerably lower levels of schooling than non-Hispanic parents; (3) Black fathers have lower rates of employment than non-Black fathers; and (4) Black mothers are less likely to be in a co-residential relationship with the baby's father than White and Hispanic mothers (Hummer and Hamilton 2010; Landale et al. 2006; Telles and Ortiz 2008).

Table 1 goes here.

Next, we assess how the socioeconomic background of multiracial infants differs from those of their mono-racial counterparts. Consistent with prior findings, the socioeconomic background of multiracial infants typically falls somewhere in between that of their mono-racial

counterparts (Bratter and Damaske 2013; Panico and Nazroo 2011). For example, 12 percent of infants born to White mothers and Black fathers (WMBF) live below the poverty line, as compared with 5 percent of mono-racial Whites and 21 percent of mono-racial Blacks. In-depth comparison of the socioeconomic circumstances of multiracial infants with those of their mono-racial counterparts reveals that father's race/ethnicity seems to be a particularly important determinant of the socioeconomic circumstances of White-Hispanic infants. For example, 7 percent of infants born to Hispanic mothers and White fathers (HMWF) and 16 percent of infants born to White mothers and Hispanic fathers (WMHF) live below the poverty line, as compared with 5 percent of mono-racial Whites and 21 percent of mono-racial Hispanics. Exceptions to this pattern, however, can be observed among infants of Black-Hispanic heritage whose parents are a positively selected group of individuals with respect to socioeconomic circumstances. For instance, 17 percent of infants born to Black mothers and Hispanic fathers (BMHF), and 19 percent of infants born to Hispanic mothers and Black mothers (HMBF) live below the poverty line, as compared to 24 percent of mono-racial Blacks and 21 percent of mono-racial Hispanics.

All together, these findings suggest that the socioeconomic circumstances of children born to multiracial parents typically fall somewhere in between those of their mono-racial counterparts, with exceptions observed among infants of Black-Hispanic descent.

Disparities in prenatal care between multiracial infants and their mono-racial counterparts

Panel A in Table 2 describes how prenatal health behaviors vary by infant's joint race/ethnicity. As expected, our results for mono-racial infants confirm what is widely known in the literature with respect to race/ethnic differences in mother's prenatal health behaviors: (1) Hispanic mothers are less like to engage in deleterious health behaviors during pregnancy than women in other race/ethnic groups; (2) White mothers have greater access to prenatal care than

their minority counterparts; and (3) Hispanic mothers have limited access to prenatal health care as compared with other race/ethnic groups (Hummer and Hamilton 2010; Landale et al. 2000).

Table 2 goes here.

Next, we assess whether mothers of multiracial infants are more likely to engage in deleterious health behaviors than mothers of mono-racial infants. Our findings for White and Black mothers of multiracial infants suggest that they are. For example, 40 percent of infants born to White mothers and Black fathers (WMBF) smoked during pregnancy, as compared with 27 percent of mono-racial Whites and 21 percent of mono-racial Blacks. Unlike their White and Black counterparts, the likelihood that Hispanic mothers of multiracial infants engage in deleterious health behaviors during pregnancy typically fall somewhere in-between that of the mothers of their infant's mono-racial counterparts. For instance, 13 percent of Hispanic mothers and White fathers (HMWF) smoke during pregnancy, as compared with 27 percent of White mothers and 8 percent of Hispanic mothers of mono-racial infants. The fact that Hispanic mothers of multiracial infants are more likely to engage in deleterious behaviors than Hispanic mothers of mono-racial infants is consistent with the idea that interracial unions signal assimilation to mainstream US culture, which is expected to have adverse effects on the health behaviors of Hispanic women, especially immigrants (Gordon 1964; Zambrana et al. 1997).

The evidence is more mixed with respect to the timing of prenatal care. White and Black mothers of multiracial infants are less likely to receive prenatal care than their peers who give birth to mono-racial infants. For example, 79 percent of White mothers whose infants have Black fathers (WMBF) and 86 percent of White mothers whose infants have Hispanic fathers (WMHF) receive prenatal care during the first trimester, as compared with 91 percent of White mothers who gave birth to mono-racial infants. In contrast, Hispanic mothers of multiracial

infants are more likely to receive prenatal care during the first trimester of their pregnancy than their counterparts who gave birth to mono-racial infants. For example, just over 90 percent of Hispanic mothers of multiracial infants receive prenatal care during the first trimester, as compared with 79 percent of Hispanic mothers of mono-racial infants. This result is consistent with prior findings by Zambrana et al. (1997), which shows that Hispanic women's access to prenatal care improves with assimilation.

Taken together, our findings suggest that White and Black mothers of multiracial infants engage in more deleterious prenatal behaviors and are less likely to receive prenatal care during the first trimester of their pregnancy than their counterparts who give birth to mono-racial infants. The story appears to be somewhat more complicated for Hispanic mothers: Hispanic mothers of multiracial infants are more likely to engage in deleterious health behaviors than their peers who give birth to mono-racial infants. They are, however, more likely to have access to medical care during pregnancy than their less acculturated peers, which suggests that assimilation has both negative and positive consequences.

Differences in availability of social support during pregnancy between multiracial infants and their mono-racial counterparts

Panel B in Table 2 describes group differences in the availability of social support from baby's father, measured as the level of parental conflict and the amount of joint activity between parents. Our results for mono-racial infants reveal that minority mothers receive less support from their baby's father during pregnancy, experience more conflict with the baby's father, and engage in fewer joint activities with the baby's father during pregnancy. Mothers of mono-racial Blacks and Hispanics scored 0.67 and 0.70 respectively in the couple activities scale, as compared with a mean score of 0.84 for mothers of mono-racial Whites. In analyses not reported

here, we found that this pattern was due in part to higher levels of socioeconomically disadvantaged among minority couples.

We now document differences in the availability of social support from the baby's father between multiracial infants and their mono-racial counterparts. Mothers of multiracial infants are more likely to be in high conflict unions than the mothers of mono-racial infants. For example, infants born to Black mothers and Hispanic fathers (BMHF) average 0.25 points, as compared with 0.23 points for mono-racial Blacks and 0.20 points for mono-racial Hispanics. This finding is consistent with prior findings showing that interracial unions tend to experience more conflict than mono-racial couples (Bratter and King 2008; Zhang and Van Hook 2009). Unlike conflict between partners, the likelihood that mothers of multiracial infants engage in joint activities with the baby's father during pregnancy falls somewhere in between that of their counterparts who give birth to mono-racial infants. For instance, BMHF infants average 0.69 points in the couple activities index, as compared with 0.67 points for mono-racial Blacks and 0.70 points for mono-racial Hispanics.

Panel C in Table 2 documents group differences in availability of social support from extended kin. We begin by comparing the amount of social support available to mothers of mono-racial infants and find that minority mothers, especially Blacks, receive more support from extended kin than White mothers; 47 percent of Black mothers and 34 percent of Hispanic mothers report receiving financial support from extended kin, as compare with 29 percent of White mothers. In analyses not reported here, we found that, again, higher levels of kin support among minority mothers were due in part to differences in socioeconomic status. Additionally, Black mothers appear to rely more on support from their families because they are no longer in a romantic relationship with the infant's father.

We now turn our attention to differences in the availability of social support from extended kin to mothers of multi- and mono-racial infants. Our analyses yield mixed results; but they reveal that mother's race/ethnicity is the most important determinant of differences in the amount of social support from extended available to mothers during pregnancy. Contrary to our expectations, White mothers of multiracial infants report more social support from extended kin during pregnancy than White mothers of mono-racial infants. For example, 33 percent of White mothers with Black fathers (WMBF) and 27 percent of White mothers with Hispanic fathers (WMHF) resided with their extended kin during pregnancy, as compared with 21 percent of White mothers who gave birth to mono-racial infants. In analyses not reported here, we find that this pattern arises partly because White mothers of multiracial infants reside in more socioeconomically disadvantageous families than their peers who gave birth to mono-racial infants; and as such, they may greater needs for their kin's help. Conversely and consistent with our expectations, Hispanic mothers of multiracial infants report less social support from extended kin than mothers of mono-racial Hispanics. For example, 20 percent of Hispanic mothers who gave birth to infants with White fathers (HMWF) and 29 percent of Hispanic mothers who gave birth to infants with Black fathers (HMBF) report support from extended kin as compared with 33 percent of their counterparts who gave birth to mono-racial Hispanic infants. In analyses unreported here, we find that this pattern of variation likely arises because multiracial infants of Hispanic descent are more socioeconomically advantaged than their mono-racial counterparts and their mothers may have less of need for support from extended kin. Yet, the fact that this pattern of variation persists net of socioeconomic controls is also partly consistent with the view that Hispanic mothers of multiracial children are more acculturated; and

as such, they may subscribe less to familism and may not have available the strong family networks willing to provide them support (Zambrana 1997).

All together, our results reveal a complicated pattern of variation in the amount of social support available to mothers of multiracial infants and how they compare with that of their counterparts who gave birth to mono-racial infants. Mothers of multiracial infants are more likely to be in high conflict unions than mothers of mono-racial infants, but their likelihood of engaging in joint activities with the baby's father falls somewhere in between that of their mono-racial counterparts. White mothers of multiracial infants are more likely to receive support from extended kin than the mothers of mono-racial Whites, while the opposite is true for Hispanic mothers. This finding may reflect the fact that whether or not an expectant mother receives social support is the product of both - their need for help as well as the availability of help. Given the contrasting findings, it is unclear what role family opposition plays in the availability of social support from extended kin. We address this question with multivariate analyses.

Multivariate results

Disparities in Low Birth Weight in the United States

Table 3 displays variations in predicted rates of low birthweight, disaggregated by infant's joint race/ethnicity. As noted in the methods section, our results are presented in the form of predicted percentages instead of odds ratios because we wish to compare the birth outcomes of multiracial infants to those of both mono-racial groups.

Table 3 goes here.

We begin by ascertaining whether the observed group differences persist, net of demographic controls. Our results show that most of the differences observed in the previous analyses do persist. Consistent with our descriptive results, low birthweight among multiracial

infants falls somewhere in between that of their mono-racial counterparts, with (1) the birth outcomes of White-Black infants closely mirroring those of mono-racial Blacks, and (2) the birth outcomes of White-Hispanic and Black-Hispanic infants falling in the middle of their mono-racial counterparts.

Model 2 adds socioeconomic controls into Model 1. Several findings are noteworthy. First, socioeconomic disadvantage is the key factor accounting for the disparity between infants with one White parent and infants with two White parents. Income accounts for about a third $[(2.09-1.41)/2.09 = 0.32]$ of the disparities in birthweight between infants born to White mothers and Black fathers (WMBF) and mono-racial Whites. Second, socioeconomic differences account for very little of the disparity in birth outcomes between multiracial infants with one black parent and infants with two Black parents. Third, socioeconomic disadvantage appears to suppress disparities in birth outcomes between multiracial infants with Hispanic parents and mono-racial Hispanics. Net of socioeconomic controls, rates of low birthweight of infants born to Black mothers and Hispanic mothers (BMHF) are 2.05 times higher than those of mono-racial Hispanics. This compares with 1.85 times in the absence of socioeconomic controls.

Model 3 adds prenatal health behaviors into Model 1. Multiracial infants born to White mothers and Black fathers (WMBF) have less favorable birth outcomes than mono-racial Whites partly because White mothers of multiracial infants are more likely to engage in deleterious health behaviors during pregnancy than White mothers of mono-racial infants. The inclusion of controls for prenatal health behaviors explains about 15 percent $[100*(2.09-1.79)/2.09=15]$ of the disparities in rates of low birthweight between multiracial infants born to White mothers and Black fathers (WMBF) and mono-racial Whites. They also explain about 13 percent $[100*(1.07-0.93)/1.07=13]$ of the disparities in birth outcomes between multiracial infants born to White

mothers and Black fathers (WMBF) and infants born to mono-racial Blacks. Surprisingly and contrary to our expectations, differences in maternal health behaviors play a limited role in accounting for disparities in birth outcomes between multiracial and mono-racial infants of Hispanic descent. Supplementary analyses not reported here indicate that this pattern arises partly because Hispanic mothers of multiracial infants are more likely to engage in deleterious behaviors during pregnancy and more likely to receive prenatal care than mothers of mono-racial children. The negative effect of unhealthier maternal behaviors during pregnancy offsets the positive effect of greater access to prenatal care, limiting the overall effect of differences in prenatal health behaviors.

Model 4 adds controls for the availability of social support from baby's father and extended kin. Recall that White mothers partnered with Black fathers (WMBF) report less support from fathers than mothers in mono-racial unions. The inclusion of controls for social support diminishes the gap in rates of low birthweight between WMBF and mono-racial Whites by 7 percent [$100 \times (2.09 - 1.95) / 2.09 = 7$]. Supplementary analyses not reported here reveal that two dimensions of social support – conflict with infant's father and joint activities with father – contribute to group differences in low birthweight. Social support from extended kin plays a limited role in generating disparities in birth outcomes between multiracial infants and their mono-racial counterparts.

Together, these findings suggest that (1) socioeconomic differences explain a significant portion of disparities in birth outcomes between multiracial infants with White parents and mono-racial White counterparts; (2) socioeconomic differences suppress disparities in birth outcomes between multi- and mono-racial infants with Hispanic parents; (3) infants born to White mothers and Black fathers (WMBF) have unfavorable birth outcomes not only because of

socio-economic differences but also because their mothers engage in more deleterious health behaviors during pregnancy; and (4) some multiracial infants have worse birth outcomes than mono-racial infants because their mothers receive less support from fathers during pregnancy.

Conclusion

Although multiracial individuals are a growing segment of the US population, very little research has examined the wellbeing of multiracial infants and how it compares with that of their mono-racial counterparts. Furthermore, the few studies that do examine differences in maternal and infant health have focused on infants of White-Black descent, excluding multiracial infants of Hispanic descent. We fill this gap in the literature by comparing the birth outcomes of multiracial infants with those of mono-racial infants and by investigating the mechanisms that give rise to these disparities. These analyses add to the small but growing body of work aimed at understanding where multiracial individuals fit in the race/ethnic stratification system and whether the increase in multiracial individuals is blurring or exacerbating race/ethnic differences in the United States. Our results yield several notable findings.

First, we find that in most cases, the birth outcomes of multiracial infants fall somewhere in between those of their mono-racial counterparts. Whereas the outcomes of infants born to White mothers and Black fathers (WMBF) mirror closely those of mono-racial Blacks, the outcomes of multiracial infants of White-Hispanic and Black-Hispanic descent fall closer to the middle of birth outcomes of their mono-racial counterparts.

Second, when comparing differences among multiracial children, we find that mother's race/ethnicity is a more important determinant of birth outcomes than father's race/ethnicity for some groups. Among infants of Black and Hispanic descent, the birth outcomes of infants born to Black mothers and Hispanic fathers (BMHF) mirror more closely those of mono-racial

Blacks; whereas, the birth outcomes of those born to Hispanic mothers and Black fathers (HMBF) mirror more closely those of mono-racial Hispanics. This finding highlights the importance of considering the race/ethnicity of the mother when examining birth outcomes of multiracial infants. More research is needed to determine whether this pattern extends to outcomes less strongly associated with maternal health.

Third, our results suggest that whereas socioeconomic disparities explain a significant portion of the disparities in birth outcomes between Whites and Blacks, they actually suppress differences between multi- and mono-racial infants of Hispanic descent.

Fourth, multiracial infants born to White mothers have more unfavorable birth outcomes than mono-racial Whites because their mothers are more likely to engage in deleterious behaviors during pregnancy. Contrary to our expectations, prenatal health behaviors play a limited role in accounting for disparities in birth outcomes between multiracial and mono-racial infants with Hispanic parents. This pattern arises because Hispanic mothers of multiracial infants are more likely to engage in deleterious behaviors during pregnancy than the mothers of mono-racial infants but more likely to have access to prenatal care than their peers. The negative effect of engaging in more deleterious behaviors cancels the positive effect of having greater access to prenatal care. This finding suggests that the initiation of prenatal care may reflect both mothers' willingness to engage in healthy behaviors during pregnancy as well as her access to medical care.

Finally, our results suggest that parents of multiracial infants are typically in lower quality relationships than the parents of mono-racial infants, and that relationship quality accounts for some of the differences in birth outcomes.

This paper also has several limitations. First, and most important, our analysis is based on the first wave of data from the Fragile Families Study, and therefore our analyses are cross-sectional. This design makes it difficult to determine whether the ‘risk factors’ associated with multiracial families are a cause or a consequence of interracial marriage patterns. For the SES measures, we can be pretty confident that the differences reflect selection into interracial partnerships. For parent relationship quality and access to social support, the role of selection versus social causation is less clear. For example, it is possible that intermarriage causes more conflict among parents, but it is also possible that couples with more interpersonal problems are more likely to enter multi-racial marriages. These issues merit further attention from researchers. Second, our results cannot be generalized beyond the 20 cities where data for the Fragile Families and Child Wellbeing Study was collected. Third, our small sample sizes preclude us from focusing exclusively on statistically significant results and also prevent us from examining additional race/ethnic groups (e.g. Asians) and disaggregating Hispanics by national origin. Finally, due to their small sample size, we are unable to include infants born to Black mothers and White fathers (BMWF) into our analyses; and as such, we are unable to examine whether the birth outcomes of White-Black infants differs according to mother’s race/ethnicity. We recommend that studies with larger samples make efforts to document differences in birth outcomes between BMWF and WMBF infants to ascertain the extent to which mother’s race/ethnicity is a more important determinant of birth outcomes than father’s race/ethnicity.

Despite these limitations, this study makes important contributions to the literature by examining the health outcomes of a diverse group of multiracial infants, including those of Hispanic descent. Our findings suggest that multiracial infants are blurring race/ethnic boundaries and reducing race/ethnic inequalities in health and socioeconomic status. They also

join the small but growing body of work that suggests that studies of race/ethnic disparities that classify multiracial individuals into a single race category may bias our understanding of the magnitude of race/ethnic disparities in health outcomes (Bratter and Damascus 2013). We recommend that future studies create a separate category for multiracial infants because their experiences may differ vastly from those of their mono-racial peers. Such analyses will further enrich our understanding of health disparities by race/ethnicity and will represent an adaptation to the changes in race/ethnic stratification system of today's society.

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Tables

Table 1. Disparities in socioeconomic status by infant's joint race/ethnicity

	Multiracial infants							
	Mono-racial infants			White-Black	White-Hispanic		Black-Hispanic	
	White (743)	Black (2,014)	Hispanic (1,056)	WMBF (89)	WMHF (106)	HMWF (60)	BMHF (76)	HMBF (105)
Mother's education								
Less than HS	20	39	60	36	42	18	30	39
HS graduate	20	31	20	27	24	13	39	25
Some college	28	25	17	29	25	48	25	31
College graduate	<u>33</u>	<u>6</u>	<u>3</u>	<u>8</u>	<u>9</u>	<u>20</u>	<u>5</u>	<u>5</u>
Total	100	100	100	100	100	100	100	100
Father's education								
Less than HS	16	26	50	20	32	13	20	21
HS graduate	26	41	24	39	33	30	43	37
Some college	26	20	12	22	24	25	20	31
College graduate	30	4	3	8	7	22	8	4
Missing	<u>2</u>	<u>9</u>	<u>11</u>	<u>10</u>	<u>5</u>	<u>10</u>	<u>9</u>	<u>7</u>
Total	100	100	100	100	100	100	100	100
Father's employment								
Unemployed	8	25	13	25	12	7	28	26
Employed	88	66	79	69	82	87	63	69
Missing	<u>4</u>	<u>9</u>	<u>8</u>	<u>7</u>	<u>6</u>	<u>7</u>	<u>9</u>	<u>6</u>
Total	100	100	100	100	100	100	100	100
Marital status								
Married	56	13	22	13	28	40	8	14
Cohabited	29	35	48	42	43	37	38	39
Other	<u>15</u>	<u>52</u>	<u>30</u>	<u>45</u>	<u>28</u>	<u>23</u>	<u>54</u>	<u>47</u>
Total	100	100	100	100	100	100	100	100
Poverty								
Unpoor	95	76	79	88	84	93	83	81
Poor	<u>5</u>	<u>24</u>	<u>21</u>	<u>12</u>	<u>16</u>	<u>7</u>	<u>17</u>	<u>19</u>
Total	100	100	100	100	100	100	100	100
Insurance status								
Private	64	25	20	28	44	50	29	24
Public	32	71	76	66	54	47	68	74
Other	<u>4</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>2</u>
Total	100	100	100	100	100	100	100	100

Table 2. Disparities in prenatal health behaviors and availability of social support by infant's joint race/ethnicity

	Mono-racial infants			Multiracial infants				
	White	Black	Hispanic	White-Black	White-Hispanic		Black-Hispanic	
	(743)	(2,014)	(1,056)	WMBF (89)	WMHF (106)	HMWF (60)	BMHF (76)	HMBF (105)
Panel A. Prenatal health behaviors								
Health behaviors								
% who smoked	27	21	8	40	33	13	25	18
% who used drugs	3	8	2	8	4	5	5	6
% who drank	13	9	5	32	15	26	10	4
Prenatal care								
First	91	83	79	79	86	92	82	91
Second or third	8	15	20	7	14	6	14	9
None	1	1	1	15	0	0	4	0
Missing	0	0	0	0	0	1	0	0
Total	100	100	100	100	100	100	100	100
Panel B. Social support from baby's father during pregnancy								
Joint activity as a couple								
Mean	0.84	0.67	0.70	0.70	0.79	0.84	0.69	0.65
SD	0.25	0.35	0.33	0.34	0.28	0.25	0.35	0.36
Couple disagreement								
Mean	0.18	0.23	0.20	0.22	0.24	0.23	0.25	0.26
SD	0.17	0.20	0.21	0.21	0.20	0.24	0.21	0.19
Panel C. Support from kin during pregnancy								
% who lived with kin	21	36	33	33	27	20	39	29
% who received financial help	29	47	34	36	41	35	45	35
% who received child care help	19	27	24	15	20	20	17	27

Table 3. Predicted rates of low birthweight by infant's joint race/ethnicity

	Predicted percentages of LBW							
	Mono		Multi					
A. White and Black heritage	WW	BB	WMBF	-	WB/WW	WB/BB	-	-
Model 1: Dem controls only	6.5	12.7	13.5	-	2.09	^a 1.07	-	-
Model 2: Model 1 + SES	8.3	11.2	11.8	-	1.41	1.05	-	-
Model 3: Model 1 + Prenatal	6.0	11.6	10.8	-	1.79	^b 0.93	-	-
Model 4: Model 1 + Support	6.8	12.3	13.3	-	1.95	^a 1.08	-	-
Model 5: Full model	7.0	10.7	10.2	-	1.45	0.95	-	-
B. White and Hispanic heritage	WW	HH	WMHF	HMWF	WMHF/WW	WMHF/HH	HMWF/WW	HMWF/HH
Model 1: Dem controls only	6.5	6.7	6.0	7.9	0.93	0.90	1.21	1.17
Model 2: Model 1 + SES	8.3	5.5	6.0	8.9	0.72	1.09	1.07	1.62
Model 3: Model 1 + Prenatal	6.0	6.7	5.4	7.1	0.89	0.80	1.18	1.06
Model 4: Model 1 + Support	6.8	6.6	6.0	8.3	0.88	0.92	1.22	1.26
Model 5: Full model	7.0	5.8	5.4	7.4	0.77	0.93	1.06	1.27
C. Black and White heritage	BB	HH	BMHF	HMBF	BMHF/BB	BMHF/HH	HMBF/BB	HMBF/HH
Model 1: Dem controls only	12.7	6.7	12.4	7.4	0.98	1.85	^a 0.58	1.10
Model 2: Model 1 + SES	11.2	5.5	11.3	6.7	1.00	2.05	^a 0.60	1.22
Model 3: Model 1 + Prenatal	11.6	6.7	11.4	7.2	0.99	1.70	^a 0.63	1.08
Model 4: Model 1 + Support	12.3	6.6	12.0	7.0	0.97	1.81	^a 0.57	1.06
Model 5: Full model	10.7	5.8	10.6	6.7	0.99	1.83	^a 0.63	1.15

Notes: Predicted percentages computed from models in Table A1.

^a Differences in low birthweight between the two groups to the left are statistically different at the 5% level.

^b Differences in low birthweight between the two groups to the left are statistically different at the 10% level.

WW refers to mono-racial Whites; **BB** refers to mono-racial Blacks; **HH** refers to mono-racial Hispanics; **WMBF** refers to infants born to White mothers and Black fathers; **WMHF** refers to infants born to White mothers and Hispanic fathers; **HMWF** refers to infants born to Hispanic mothers and White fathers; **BMHF** refers to infants born to Black mothers and Hispanic fathers; and **HMBF** refers to infants born to Hispanic mothers and Black fathers.

FIGURE

FIGURE 1. Percentage of Low Birth Weight by Infant's Race/Ethnicity Heritage

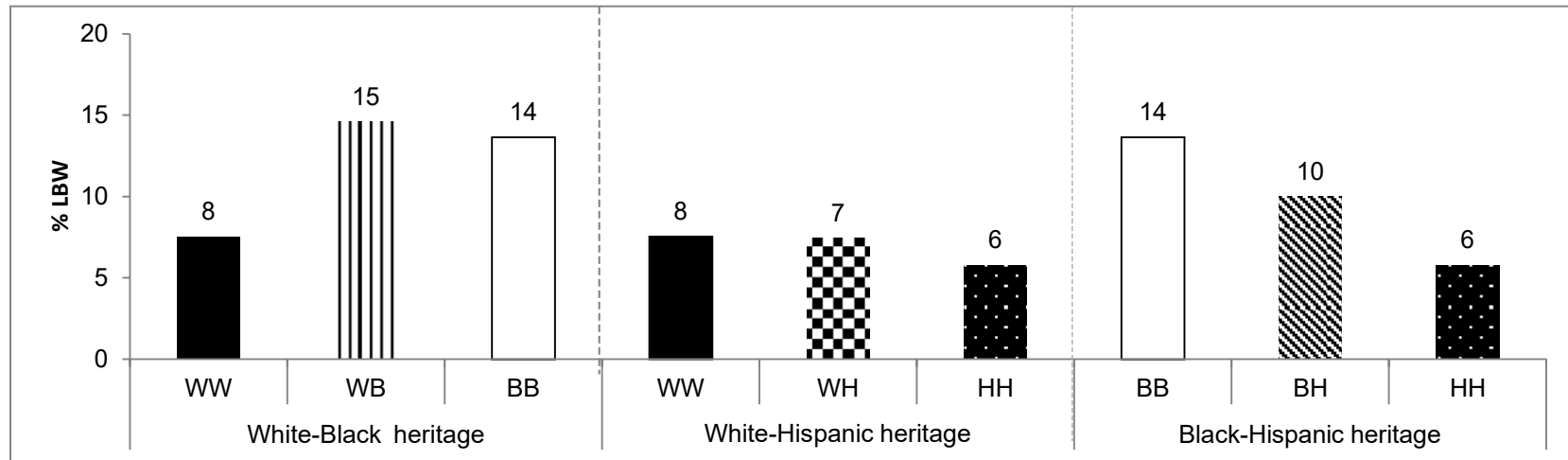
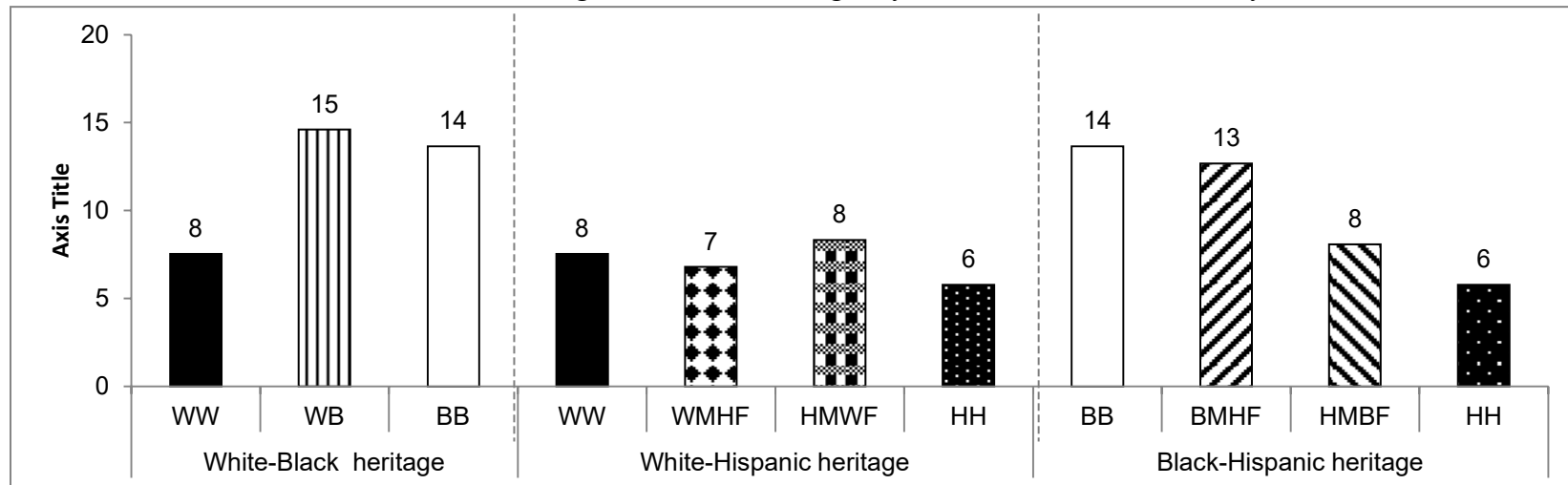


FIGURE 2. Percentage of Low Birth Weight by Infant's Joint Race/Ethnicity



APPENDIX**Table A1. Logistic Regression Models Predicting Low Birth Weight**

	<u>Model 1:</u>		<u>Model 2:</u>	
	<u>Dem. only</u>		<u>M1+SES</u>	
	exp(β)	β /se	exp(β)	β /se
Parent's joint race/ethnicity (Both White)				
Both Black	2.10	4.35	1.39	1.54
Both Hisp	1.04	0.14	0.64	-1.62
White mother- Black father	2.27	2.63	1.47	1.18
White mother- Hisp father	0.92	-0.14	0.70	-0.59
Hisp mother - White father	1.23	0.44	1.08	0.17
Black mother -Hisp father	2.05	1.80	1.39	0.86
Hisp mother - Black father	1.16	0.33	0.79	-0.51
Infant's gender (Male)				
Female	1.23	2.34	1.22	2.14
Parity (Higher order)				
First	1.11	0.83	1.21	1.53
Father's age (<20)				
20-34	1.45	2.74	1.63	3.31
35+	2.37	3.86	3.01	4.62
Mother's age (<20)				
20-34	0.73	-2.55	0.89	-0.91
35+	0.81	-0.96	1.15	0.63
Mother's nativity (US-born)				
Immigrant	0.54	-2.91	0.54	-2.72
Mother's marital status (Married)				
Cohabiting			1.29	1.23
Visting			1.39	2.05
Poverty (Unpoor)				
Poor			0.72	-2.92
Mother's education (Less than HS)				
HS graduate			0.93	-0.70
Some college			0.82	-2.06
BA or more			1.12	0.45
Father's education (Less than HS)				
HS graduate			0.90	-0.78
Some college			0.73	-1.87
BA or more			0.39	-3.64
Missing			0.94	-0.35
Insurance (Uninsured)				
Insured			1.87	5.47
Missing			2.11	1.98
Father's employment status				
Employed			0.96	-0.33
Missing			1.21	0.99
Intercept	0.06	-10.70	0.04	-8.74

Table A1 (Continued)

	<u>Model 3:</u>		<u>Model 4:</u>		<u>Model 5:</u>	
	<u>M1+ Behaviors</u>	<u>M1+ Support</u>	<u>M1+ Support</u>	<u>M1+ Support</u>	<u>Full model</u>	<u>Full model</u>
	-exp(β)	β /se	-exp(β)	β /se	-exp(β)	β /se
Parent's joint race/ethnicity (Both White)						
Both Black	2.04	4.38	1.92	3.64	1.59	2.20
Both Hisp	1.12	0.45	0.96	-0.14	0.82	-0.79
White mother- Black father	1.88	2.11	2.10	2.44	1.50	1.34
White mother- Hisp father	0.88	-0.22	0.88	-0.22	0.75	-0.48
Hisp mother - White father	1.19	0.42	1.23	0.46	1.06	0.14
Black mother -Hisp father	2.00	1.75	1.86	1.55	1.57	1.15
Hisp mother - Black father	1.21	0.42	1.03	0.08	0.95	-0.12
Mother's marital status (Married)						
Cohabiting					1.14	0.70
Visiting					1.23	1.21
Poverty (Unpoor)						
Poor					0.69	-3.32
Mother's education (Less than HS)						
HS graduate					1.10	0.93
Some college					0.99	-0.11
BA or more					1.44	1.36
Father's education (Less than HS)						
HS graduate					0.92	-0.64
Some college					0.75	-1.73
BA or more					0.42	-3.19
Insurance (Uninsured)						
Insured					1.74	4.99
Father's employment status						
Employed					1.03	0.21
Smoked during pregnancy (Smoked)						
Did not	0.46	-7.03			0.52	-6.68
Used drugs during pregnancy (Used drugs)						
Did not	0.53	-4.48			0.55	-4.00
Drank during pregnancy (Drank)						
Did not	0.89	-0.75			0.88	-0.77
Prenatal (First)						
Second	1.16	1.14			1.09	0.64
Never	2.45	3.39			2.23	3.08
Missing	4.92	4.67			5.36	4.79
Support from baby's father						
Joint couple activities			0.72	-1.76	0.99	-0.04
Disagreement index			1.89	2.40	1.01	0.04
Support from extended kin during pregnancy						
Provided place to live (vs. did not)			1.23	1.64	1.06	0.41
Helped with finances (vs. did not)			0.89	-1.12	0.83	-1.64
Helped with childcare (vs. did not)			1.06	0.47	1.07	0.54
Intercept	0.17	-5.56	0.06	-12.23	0.11	-6.04

Notes: Models 3 to 5 also include demographic controls. Reference categories are reported in parentheses. Hisp denotes Hispanics.