Do Neighborhood Poverty and Racial Composition Affect Black Birthweight?

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There are large disparities in low birthweight by race in the United States. In 2000, 13% of babies born to black mothers and 6.5% of those born to white mothers were low birthweight. This two-to-one disparity has persisted for more than forty years and cannot be explained by socioeconomic status alone. Even infants born to college-educated black women are at much greater risk than infants born to college-educated white women of being low birthweight.

The fact that the black-white difference in low birthweight cannot be explained entirely by individual-level factors has led to increased interest in the role of neighborhoods. Theories posit that neighborhood poverty and racial composition may affect birth outcomes through various mechanisms, including crime, violence, and stress; social networks; availability of health care; availability of amenities such as transportation, nutritious food, and opportunities for exercise; and quality of housing stock and other buildings.

A limitation in testing whether neighborhoods affect birth outcomes is that it is difficult to disentangle the effects of race, racial composition, socioeconomic status, and concentrated poverty. Additionally, there are issues of selection into neighborhoods. In this paper, we redress the first limitation by investigating the extent to which neighborhood poverty and racial composition are associated with birth weight within a homogeneous high-risk sample—unmarried black mothers living in urban areas—and by jointly estimating effects of

neighborhood poverty and racial composition. To address the second issue, we include detailed covariates and compare our neighborhood-level results to those from city-level models that may be less sensitive to neighborhood selection.

Data and methods

Our analyses are based on the Fragile Families and Child Wellbeing birth cohort survey. A total of 3,712 unmarried mothers (87% of those eligible) were interviewed between the spring of 1998 and the fall of 2000. The sample is representative of non-marital births in U.S. cities with at least 200,000 people. Sociodemographic and racial composition of mothers' census tracts were obtained from the 2000 U.S. Census using the mothers' baseline addresses. Neighborhood racial composition and poverty level are of course correlated, but there is considerable variation between the two in our data. We limit the sample to non-Hispanic black mothers who were unmarried at the time of the birth and did not have multiple births.

We estimate the effects of census tract-level poverty and racial composition on birth weight (in grams) and low birth weight (< 2500 grams), as reported by the mother in a post-partum interview. In all models, we control for the infant's sex, maternal age, maternal education, paternal age, paternal education, parity, maternal nativity, parents' living arrangement, whether the birth was paid for by Medicaid, and whether the father was employed at the time of the birth. We estimate models that include the percent of families in the mother's census tract that are poor, that include the percent of individuals in the tract that are black, and that include both neighborhood characteristics. We also describe the distribution of black birth outcomes by neighborhood racial composition and poverty. Finally, we estimate multilevel models of the effects of city-level poverty and racial composition, controlling for individual level

factors. The analyses provide a strict test of whether neighborhood poverty and racial composition are associated with birthweight.