Children's Hospital of Philadelphia PolicyLab

# Racial Residential Segregation and Hypertensive Disorder of Pregnancy Among Women in Chicago: Analysis of Electronic Health Record Data

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Racial residential segregation is associated with higher rates of chronic hypertension, as well as greater risk of preterm birth and low birthweight. However, few studies have examined associations between segregation and hypertensive disorder of pregnancy (HDP). Electronic health records from 4,748 singleton births among non-Hispanic black women at Prentice Women's Hospital in Chicago, IL (2009-2013) were geocoded to the census tract level. Residential segregation was measured using the Gi* statistic, a z-score measuring the extent to which each individual's neighborhood composition deviates from the composition of the larger surrounding area. Segregation was categorized as low ($z < 0$), medium ($z = 0$-1.96) or high ($z > 1.96$). We estimated cross-sectional associations of segregation with HDP using multilevel logistic regression models with census tract random intercepts. Models adjusted for neighborhood poverty and maternal characteristics. We also examined effect modification by neighborhood poverty. Overall, 27.2% of women lived in high segregation, high-poverty neighborhoods. Racial residential segregation was not associated as a main effect with HDP in models adjusting for neighborhood poverty and maternal characteristics. However, at higher levels of neighborhood poverty (>20%), women living in high- and medium-segregated neighborhoods had greater odds of HDP relative to those in low-segregation neighborhoods (P interaction: 0.002). In this sample of non-Hispanic black women in Chicago, racial residential segregation was associated with greater prevalence of HDP among those living in higher poverty neighborhoods. Understanding sources of heterogeneity in the relationship between segregation and health will help refine targeted intervention efforts to reduce disparities.

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Authors: Stephanie Mayne