Do Rising Tides Lift All Boats Equally? Lifetime Socioeconomic Status and Health Outcomes among Blacks and Whites in the U.S.

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A. SPECIFIC AIMS

Social scientists have turned toward the lifecourse approach as a conceptual lens through which adult disease risk may be understood with greater insight and clarity (Davey Smith 2003; Kuh and Ben-Shlomo 1997; Kuh and Hardy 2002). A rapidly accumulating body of research highlights the importance of both childhood and adult factors, many of which stem from an individual's place within the socioeconomic hierarchy, in the production of health and wellbeing in later life. However, the utility and applicability of this perspective, especially for minority populations, is limited by its failure to carefully consider (1) how exposure to childhood risk factors may *interact* with socioeconomic conditions during adulthood to maintain or strengthen existing health disparities; (2) the *dynamic processes* that contribute to the production of wellbeing over time and (3) how *contextual factors* influence the probability that an individual's risk of disease or death will decline due to improvements in SES.

Inquiries designed to investigate the relationship between cumulative disadvantage and health outcomes in adulthood among minority populations are especially pertinent given evidence that suggests racial inequalities in health persist even after accounting for socioeconomic status (SES) (Lillie-Blanton et al. 1996; Otten et al. 1990; Sorlie et al. 1995; Williams 1999; Williams and Collins 1995). African Americans, even those who occupy moderate or relatively high positions on the social class ladder, face excess rates of morbidity and mortality throughout the lifecourse (Geronimus et al. 2001; Hayward and Heron 1999). For example, Blacks living in middle-class communities on the periphery of cities like Detroit, Chicago, and Los Angeles face similar life expectancies as Whites who are residents of high-poverty, inner-city neighborhoods (Geronimus et al. 1999). While nonpoor African Americans are likely to live longer than their poor counterparts, they do not enjoy similar reductions in rates of disability (Geronimus et al. 2001). Therefore, the additional years of life they gain as a result of their more secure socioeconomic status are not accompanied by concomitant improvements in health-related quality of life. Similarly, Black/White disparities in birth outcomes are typically greater among *nonpoor* women. College educated Black women appear to have a two- to three-fold increased risk of giving birth to a low birthweight (LBW), very low birthweight (VLBW), or small for gestational age (SGA) baby compared to college educated White women (Collins and Butler 1997; Foster et al. 2000; McGrady et al. 1992; Schoendorf et al. 1992).

Motivated primarily by a desire to better understand how lifecourse processes impact health and wellbeing in adulthood among minority populations in the United States, I am analyzing data from the Panel Study of Income Dynamics (PSID) to estimate the extent to which African Americans are able to benefit, with respect to their health status, from intergeneration upward socioeconomic mobility. I am augmenting these data with information from the U.S. Censuses of Population and Housing. The specific aims of this study are:

1. To estimate separately for Blacks and Whites, changes in self-reported health and disability that occur as a result of intragenerational fluctuations in SES.

2. To determine whether endogenous factors account for the association between intragenerational mobility and subsequent adult health outcomes.

3. To estimate the extent to which structural level racial inequalities, such as residential segregation, differential wealth accumulation, and labor market segmentation, account for Black/White disparities in the relationship between socioeconomic mobility and adult health outcomes.

B. BACKGROUND & SIGNIFICANCE

Previous research suggests three mechanisms through which early life conditions may influence subsequent physical health status (Hertzman and Power 2003). First, the critical period or latency model proposes that excessive rates of adult chronic disease and/or death are strongly and independently influenced by exposure to risk factors during specific periods of biological development which result in the disregulation of physiological functioning. For example, the fetal origins hypothesis predicts that individuals who are exposed to unfavorable intrauterine environments during certain stages of fetal development, which are primarily thought to be the result of inadequate maternal nutritional intake, face an increased probability of experiencing both infant and adult morbidity (Barker 1998, 2003).

Second, the accumulation of risk or cumulative class approach hypothesizes that chronically poor individuals (ie. those who have restricted access to resources throughout the lifecourse) will experience the highest rates of morbidity and mortality, while their consistently nonpoor counterparts (ie. those who have maintained moderate or high levels of resources over time) will have the lowest rates of morbidity and mortality. To the extent that investigators have considered the impact of socioeconomic mobility on adult health, individuals experiencing upward or downward mobility are expected to encounter rates of disease and disability that fall somewhere in between these two socially stable groups. Furthermore, a simple model where upward mobility is unambiguously beneficial to physical wellbeing, even if it may not completely eliminate the adverse health impact of socioeconomic disadvantage in early life, has been proposed (Davey Smith and Hart 2002; Lawlor et al. 2005).

The third model put forth to explain the association between lifetime SES and adult health is the pathways or chains of risk model which highlights the probabilistic linkages between exposure to risk factors during childhood and repeated insults to health encountered throughout the lifecourse (Mare 1990). This model characterizes individual physical wellbeing as heavily influenced by socioeconomic trajectories, which are envisioned as a series of discrete circumstances that unfold in a successive manner with each event affecting the likelihood that the next event will occur. For example, individuals with limited socioeconomic resources during early life tend to exhibit lower rates of educational preparedness which may, in turn, negatively influence the probability of achieving high school completion, occupational success, positive income trajectories, home ownership and wealth accumulation, and thus physical wellbeing during adulthood.

A glaring shortcoming of the lifecourse literature stems from its failure to critically investigate the degree to which the association between lifetime SES and adult health varies by race/ethnicity. The limited number of studies that have included African Americans in their samples have produced contradictory findings and require replication before definitive conclusions can be drawn (Farmer and Ferraro 2005; James et al. 2006a; James et al. 2006b; McDonough et al. 1997; Preston et al. 1998). For example, McDonough et al. (1997) do not find evidence of significant interactions by race when the risk of all-cause mortality is regressed on a multi-year measure of income in a nationally representative sample of U.S. adults. However, Farmer and Ferraro (2005) report differential health returns to increases in SES over time, specifically education and employment status, for Blacks as opposed to Whites. Using data from a sample of African Americans residing in Pitt County, North Carolina, James and colleagues

(2006a; 2006b) provide evidence in support of the accumulation of risk hypothesis among both men and women. Interestingly, adult SES appears to be a more salient indicator of hypertension risk for Black men, while childhood SES seems to matter more for the subsequent development of obesity for Black women.

Both cumulative and pathway models assume that upwardly mobile individuals will be able to transform their newfound SES into improvements in individual health status. This may be accomplished through a number of different mechanisms, such as increased access to healthcare services, reduced environmental stressors, and the adoption of protective health behaviors such as improved nutritional intake, increased levels of physical activity, and smoking cessation. However, due to a convergence of social, economic, and political factors that are unique to the experiences of African Americans in the United States, upward mobility may actually come at a cost to their individual physical wellbeing and that of their children.

It has been argued that the processes involved in ascending the socioeconomic hierarchy *qualitatively* differ for African Americans compared to Whites due to three overarching factors: (1) the extent to which macro level racial inequalities restrict African Americans' access to social and economic resources; (2) the unique set of psychosocial stressors Black men and women are likely to face during their attempts to improve their social class status; (3) the likelihood that upwardly mobile African Americans will postpone childbearing in order to pursue educational or occupational goals (Colen 2006; Colen et al. 2006). In order to gain a more thorough understanding of the ways in which lifecourse processes shape health outcomes in later life among minority populations, the proposed study seeks to investigate whether structural level racial inequalities prevent African American men and women from translating their successful attempts at upward mobility into subsequent gains in health and wellbeing.

C. METHODOLOGY

Description of the Data

The primary source of data for this project is the Panel Study of Income Dynamics (PSID). The PSID is a longitudinal survey, begun in 1968, designed to investigate economic and demographic trends among a representative sample of individuals residing within the United States and the households to which they belong. A primary feature of this data is the preservation and maintenance of linkages among nuclear and extended family members. The original PSID included two independent subsamples: (1) a cross-sectional, equal probability sample drawn from households in the continental United States and (2) a nationally representative sample of low-income families whose household head was under 60 years of age drawn from respondents identified as part of the Survey of Economic Opportunity. In 1968, the SRC and SEO subsamples (otherwise known as the PSID core sample) contained 2,930 and 1,872 completed interviews, respectively. In 1997, the SEO subsample was reduced by 66% to ensure that the overall core sample remained representative of the United States population. By 2001, the Panel Study of Income Dynamics contained data from over 7,000 families. For a more complete discussion of the sampling design and data collection procedures, please see "The Panel Study of Income Dynamics: A User's Guide" (Hill 1992).

The unique structure and content of the PSID make it one of the best secondary data sources with which to study the effects of intergenerational mobility on health among minority populations in the United States. This survey has a relatively low rate of attrition and oversamples African American as well as low-income respondents. Adolescents and young adults in the core sample have been followed over an extended period of time during which they have established their own

households, completed their educations, and pursued occupational goals. Moreover, this dataset contains detailed information along several dimensions of SES including but not limited to education, occupation, income, poverty status, as well as wealth accumulation and transfers.

In order to ascertain an accurate picture of neighborhood sociodemographic characteristics, data from the restricted version of the PSID, which is geocoded at the census tract level, is being combined with data from the Neighborhood Change Database. The Neighborhood Change Database provides measures of the neighborhood environment at the census tract level over a thirty-year time span by incorporating data from the 1970, 1980, 1990, and 2000 U.S. Censuses of Population and Housing. It is the only source of census data that contains variables as well as tract boundaries defined using consistent methodological approaches over the period of time to be studied. Using the geocoded PSID file in conjunction with the Neighborhood Change Database, I am able to link respondents to their corresponding census tracts, obtain detailed information regarding the racial composition of the neighborhoods in which individuals resided, and construct measures of racial residential segregation.

Measures

For the purpose of the proposed study, intragenerational socioeconomic mobility is captured by a continuous measure of family income which is adjusted for inflation and reported in 2005 dollars. Because this indicator captures both wages and transfers obtained by every adult member of the household, it most accurately reflects the socioeconomic resources available to the respondent in a given year.

Analyses focus on two commonly measured dimensions of overall health and wellbeing – self-rated health and functional disability – as outcomes of interest. The first dimension is captured by a five-point likert scale question that asks the respondent to rate his/her overall health status. The second dimension is captured using Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs) indexes.

Three sets of variables are being included in a subset of the analyses to estimate the mediating effects of structural level racial inequalities on the association between socioeconomic mobility and adult health. Racial residential segregation is being captured by the index of dissimilarity which reflects the percent of African Americans in a given neighborhood who would have to move to achieve the racial composition of the larger city or county. Differential wealth accumulation is being summarized by two variables: an indicator of home ownership and a composite measure of net financial assets which is defined an individual's net worth minus the value of one's car and home. Lastly, labor market segmentation is being depicted by two variables that reflect the number of years the respondent spent in both the primary and secondary labor markets.

Analytical Strategy

Consistent with the aims and theoretical underpinnings of the proposed study, I am estimating causal models, testing hypotheses, and producing summary measures of risk conditioned on specified explanatory variables. I am using growth curve analyses with both fixed and random effects to estimate the effects of socioeconomic mobility on subsequent health status within individuals over the lifecourse. Fixed-effects models allow me to control for potential unobserved confounders that vary from one respondent to the next but are consistent over time, while random-effects models allow the impact of lifetime SES on health to vary from one individual to the next. Since all outcome variables of interest are based on five-item likert scale measures,

ordered logit models are being fit to the data. These techniques are grounded firmly in statistical theory, enabling tests of multivariate hypotheses which result in findings that are easily interpretable in terms of the relative risks of an outcome observed in different populations. Multivariate analyses will be stratified by race and limited to nonHispanic Blacks and nonHispanic Whites for whom information regarding parental educational attainment is available.

In order to control for potential sources of endogeneity, I am adhering to two additional modeling strategies. First, childhood health status, as reflected by a retrospective measure of self-rated health from birth to age 16, is being included in a subset of analyses. Second, I am repeating the analyses using a subsample of respondents who indicated that their childhood health status was either good or excellent.

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