

The Place of Race in Hypertension:

How Family Background and Neighborhood
Conditions in Childhood Impact Later-Life Health

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Background & Objective

Background

Traditionally, interventions aimed to improve health have focused on the individual

More recently, family & neighborhood factors have been considered

Objective

Assess relative contributions of individual, family & neighborhood factors over the life course

- *Do family & neighborhood factors in childhood influence health status in adulthood?*
- *How important is the neighborhood you grew up in vs. contemporaneous adult neighborhood environment on later-life health?*



Families & Neighborhoods May Influence Health in Various Ways

Families, especially parents

- Hereditary factors

- Quantity & quality of health care

- Promotion & practice of health behaviors

- Socio-economic status

Neighborhoods

- Environmental factors

 - Stress, crime, toxins, pollutants, housing quality, noise

- Built environment & community services

 - Schools, health care providers, parks, social services

- Behavioral spillovers

 - Peer groups, role models, & social complementarities

All factors may work within a life course framework



Neighborhood Effects over Life Course

- Relationship between current neighborhood and current health may say little about overall influence of neighborhood over life course
 - (health outcomes = product of past & current neighborhood exposures)
- Duration of neighborhood poverty over the life course:
 - High rates of immobility from poor neighborhoods over life course (esp. blacks).



Black-white differences in duration of exposure to poor neighborhoods

Results indicate (using PSID, Johnson (2008))...

Avg black child:

- spent $\frac{1}{4}$ of childhood years in high poverty neighborhoods
- 1/3 of early-to-mid adulthood years in high poverty neighborhoods
- 15% of adulthood years lived in low poverty neighborhoods

Avg white child:

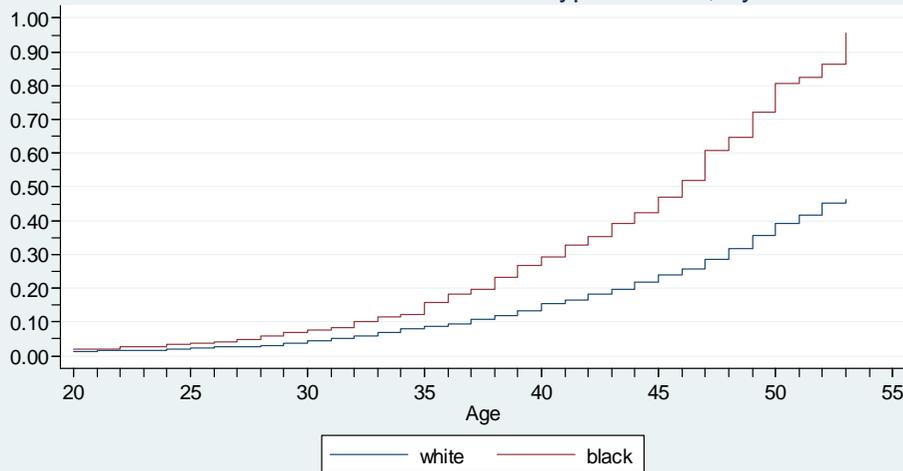
- 3% of childhood and adulthood years spent in high poverty neighborhoods,
- 80% of childhood years in low poverty neighborhoods
- >50% of early-to-mid adulthood years in low poverty neighborhoods.

Why focus on Hypertension

- Major risk factor for heart disease and stroke, leading causes of death in US
- Blacks' higher prevalence of cardiovascular disease-related risk factors account for more than half of racial disparity in life expectancy

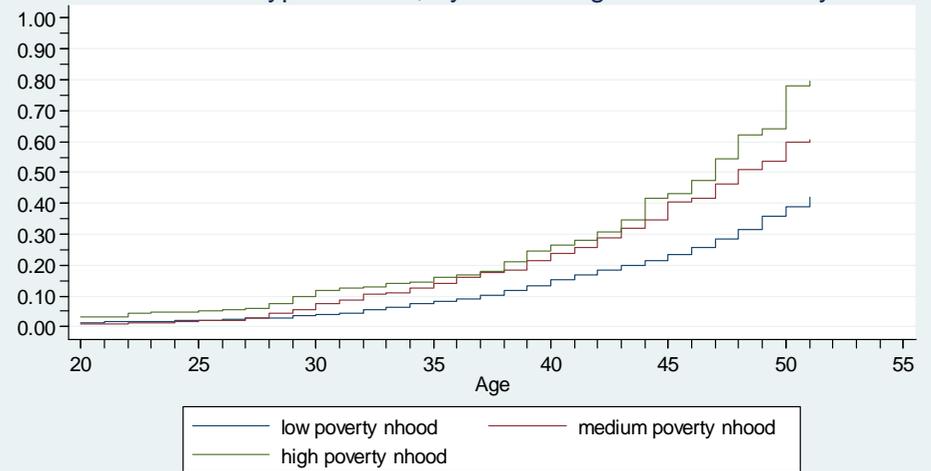
Cumulative Hazard: Onset of Hypertension

Cumulative Hazard of Onset of Hypertension, by Race



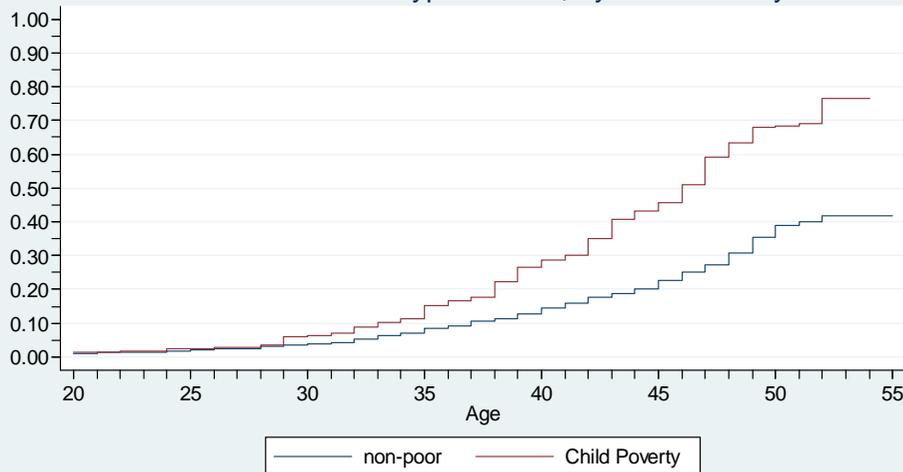
Data: PSID, 1968-2005
(Individuals born b/w 1950-1968)

Cum. Hazard: Hypertension, by Child Neighborhood Poverty Status



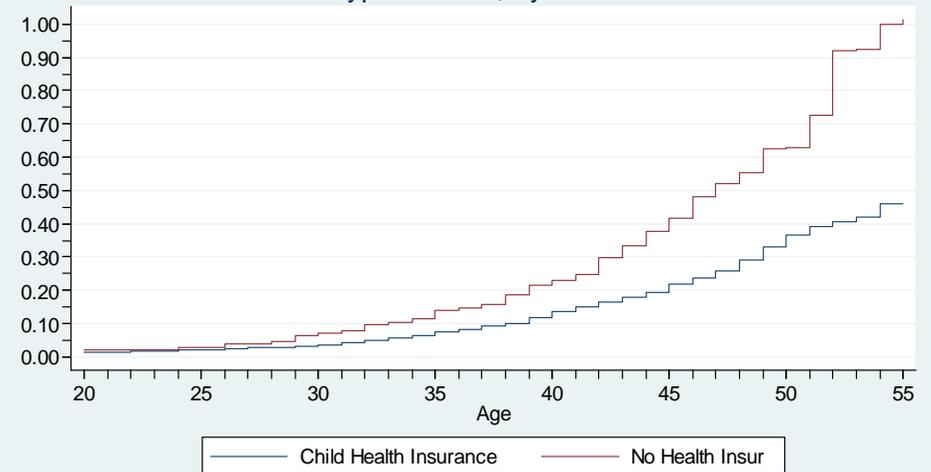
Data: PSID, 1968-2005
(Individuals born b/w 1950-1968)

Cum. Hazard: Onset of Hypertension, by Child Poverty Status



Data: PSID, 1968-2005
(Individuals born b/w 1950-1968)

Cum. Hazard: Hypertension, by Child Health Insurance



Data: PSID, 1968-2005
(Individuals born b/w 1950-1968)

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Challenges in Estimating Neighborhood Effects

- Neighborhood variables may capture unmeasured aspects of family background
- Residential location patterns reflect, in part, sorting of preferences for neighborhood amenities
- Neighborhood quality is difficult to measure
 - Choice of factors often driven by available data, which are limited
 - Data limitations require “neighborhood” to be defined as a large, diverse area

Approach – General Description

How much of the differences in **early-to-mid adulthood** health are attributable to...

- Neighborhood in childhood
- Parental & family factors
- Individual factors

Unique design of the Panel Study of Income Dynamics (PSID) allows comparisons in adult health status among....

- Siblings who grew up together
- Un-related children who grew up in same neighborhood

Data – Specifics

Nationally representative longitudinal sample
of 5,000 families from 1968 to 2005

Families were highly clustered in 1968

Most families have 3 other PSID families in the same
block

All children in PSID families are followed when
they leave parental home

Implication

*For children in 1968, data are available on health
status in adulthood for themselves, their siblings, and
their childhood neighbors*

Methods

- Factors influencing Onset of Hypertension
 - Four levels
 - Individual, time, family, neighborhood, county
- Childhood family background factors
 - Parental family income, education, race, family structure, parental health insurance coverage, parental health behaviors (smoking, alcohol use)
- Childhood neighborhood factors
 - Neighborhood poverty; crime; per-pupil school spending; residential segregation, housing quality; crowding; # of neighbors known; connectedness to informal sources of support
- Adulthood socioeconomic status and neighborhood factors

Results

- Concentrated neighborhood poverty during childhood
 - Increases odds of onset of hypertension thru mid-life (age 55) by 26%
- Substantial persistence in health status across generations partly attributable to *low intergenerational economic mobility*
- Racial gap in hypertension explained by disparities in early life factors –
 - Neighborhood factors matter: poverty, crime, school spending
 - Child/Family factors matter: parental socioeconomic status, child health insurance coverage, low birth weight

Implications

- Childhood neighborhood factors play important role in intergenerational transmission of health status -- influence both contemporaneous & future health
- Feedbacks between disparities in health & disparities in socioeconomic status over the life cycle
- Racial gap in hypertension accounted for by disparities in early life factors