The Place of Race in Hypertension:
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How Family Background and Neighborhood How Family Background and Neighborhood Conditions in Childhood Impact Later-Life Health
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 ¼ 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

Cum. Hazard: Hypertension, by Child Neighborhood Poverty Status


Cum. Hazard: Hypertension, by Child Health Insurance

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