Overview of Disparities in Health among Children: Conceptualization and Evidence

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Production of Health (Grossman 1972)

- Ideas
  - The stock of “health capital” is a consequence of endowed health and health investments/expenditures
  - The stock of health capital ‘naturally’ depreciates over time and requires investments to maintain
  - Investments can take the form of market purchases (medical services) and time inputs
  
- Disparities in health are a consequence of differences in endowments (intergenerational/genetics), investment choices, accumulated exposure to insults
  - A source of intergenerational disparities in health and economic status
More concepts (Grossman 1972)

- Education (SES) can affect health through many pathways
  - Income
    - Ability to purchase health inputs/reduce harmful exposures
  - Occupation
    - Exposure to environment
  - “Allocative efficiency”
    - Individuals may choose different (better) health inputs
  - “Productive efficiency”
    - Individuals may get more out of a fixed amount of inputs
Absolute Income and Absolute Deprivation
Hypotheses

- The *absolute income hypothesis*: 
  - all that matters to health at the level of an individual is income,
  - Implication: a community with more equal income will tend to have the same average health than a community with more inequality when comparing two communities with equal average income.

- The *absolute deprivation or poverty hypothesis*: 
  - those with the lowest incomes face poorer health and a greater risk of mortality owing to a variety of factors associated with extreme poverty, such as inadequate nutrition, lack of quality health care, exposure to a variety of physical hazards, and heightened stress.
  - Implication: a dollar redistributed from rich to poor would improve the health of the poor and improve the average health of the entire population.
Typical analysis

• Focus on children
  • Reduces impact of reverse causality
    • Children do not typically contribute to family SES in developed countries

• Use of cross-sectional data

• Use of contemporaneous measures of SES
  • Race, education vs. income

$$health = \beta_0 + \beta_1 \log(\text{income}) + \beta_2 X + \varepsilon$$

• Issues
  • Measurement
    • Income (current, permanent, neighborhood)
    • Health (which measure(s)? Usually self (mother) reported health status
      (5=excellent, 1=poor)
  • Endogeneity
Additional Designs

- Income Support Policies as an exogenous source of variation in income
- Evidence from natural experiments as a source of variation in income
Stylized Facts

- Large SES gradient in child health status
  - Multiple measures of health
  - Multiple time periods
  - Multiple countries/settings
- The gradient appears to increase as children age
  - Low SES children are exposed to more health shocks?
  - Low SES children are less able to overcome a given health shock?
- Poor childhood health reduces a broad range of adult outcomes
  - Educational attainment, labor market outcomes, marital outcomes, etc.
Evidence 1: Large gradient

Source: Currie and Lin 2007
Conditional on Illness/Limitations

Source: Currie and Lin 2007
Self Perceived Health Status, Children <18, US 2006

FREQUENCY OF PERCEIVED HEALTH STATUS

Poor

1 EXCELLENT 5,416,131
2 VERY GOOD 4,004,785
3 GOOD 3,184,781
4 FAIR/Poor 446,327

NonPoor

FREQUENCY OF PERCEIVED HEALTH STATUS

XCELLENT 20,330,048
3 GOOD 17,350,085
4 FAIR/Poor 1,160,386
0 FAIR 0,098,130
Mental Health Status, Children <18
US 2006 MEPS Data

FREQUENCY OF PERCEIVED MENTAL HEALTH STATUS

Poor

Nonpoor

FREQUENCY OF PERCEIVED MENTAL HEALTH STATUS
Prevalence of Health Problems in Children

- Any limiting chronic condition
- Asthma prevalence
- Ear disease
- Injury
- Physical inactivity

Percentage

SES (lowest to highest)

Psych Bull. 2002;128:295-329
### Evidence 2: Gradient Increases

<table>
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<tr>
<th>Country</th>
<th>0 to 3</th>
<th>4 to 8</th>
<th>9 to 12</th>
<th>13 to 17 (15)</th>
</tr>
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<tbody>
<tr>
<td>United States</td>
<td>-0.183</td>
<td>-0.244</td>
<td>-0.268</td>
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<tr>
<td>Case, Lubotsky, and Paxson 2002</td>
<td>[0.008]</td>
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<td>National Health Interview Survey</td>
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<tr>
<td>Canada</td>
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<td>0.216</td>
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<tr>
<td>Currie and Stabile 2006</td>
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<td>[0.019]</td>
<td>[0.024]</td>
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<td>-0.212</td>
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<tr>
<td>Case, Lee, and Paxson 2007</td>
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<tr>
<td>Health Survey of England</td>
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</tbody>
</table>

*Notes: Standard errors in brackets. Regressions control for year effects, family size, sex, mother’s age at birth, father present, etc.*

Source: Currie 2009
Activity Limitations

Source: Currie and Lin 2007
Implications: The negative effects of low family income on children’s health tend to accumulate during childhood. Thus, children from lower income families may suffer from both lower SES and poorer health when they transition into adulthood.
Fletcher and Wolfe study

- Use ECLS data - The Early Childhood Longitudinal Study.
  - The kindergarten class of 1998-99 cohort is a sample of children followed from kindergarten through the eighth grade (long duration compared to other data)
  - Includes birth weight so have some data on initial health
  - Main outcome – self reported health (as used through out this literature)
- focuses on children's early school experiences beginning with kindergarten to middle school.
  - descriptive information on children's status at entry to school, their transition into school, and their progression through 8th grade
  - nationally representative sample of kindergartners, collecting information from parents, teachers and schools all across the United States. Includes 1277 schools of which 914 are public and 21,260 initially
Basic results
ECLS data, current income, ordered probit, weighted data
Does measure of income matter?
Permanent income based on current and prior years: Permanent b – based on all years.
Contributions

- Replicate much of the literature, but find some flattening of gradient by 8th grade
- No difference in results when controls for
  - Birth weight
  - Maternal health
  - Maternal mental health (contrary to a few papers)
- Some evidence of interactive effects with “neighborhood” income level
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