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Long-term Socioeconomic Status and the Experience of Preventable Disease: A Comparative Analysis of Fundamental Cause Theory

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Long-term Socioeconomic Status and the Experience of Preventable Disease: A Comparative Analysis of Fundamental Cause Theory

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Funded by SSHRC
Two Main Objectives:

1) Investigate changes in the relationship between health and SES as Canadians and Americans age.

2) Examine whether social contexts related to policy and economic inequality are effective in buffering the negative health effects of low socioeconomic status.
Fundamental Cause Theory

- Why do SES disparities in health persist when proximal risk factors are eliminated?

(Phelan et al., 2004; Phelan and Link, 2005)
Fundamental Cause Theory

- Resources are used in a purposeful way to influence health, regardless of risk factors
- Creates within-country health inequality
- Less competition for resources $\rightarrow$ fewer health disparities

(Phelan and Link, 1995; Phelan et al., 2004; Phelan and Link, 2005)
Health Disparities: Canada & the U.S.

- Health status more polarized in U.S.
- More Americans in lowest income quintile report poor health and other health problems
- Access to care less influenced by income in Canada
The Role of Economic Inequality

- U.S. has higher inequality than Canada
- Evidence of negative effect on health
- Differences in access to care by disadvantaged groups
- U.S. lags behind in many policy areas that affect health and well-being
Less preventable causes of death have a weaker association with SES than more preventable causes of death (Phelan et al. 2004)
Research Questions


- Is low SES more strongly associated with the incidence of diseases for which preventability is high compared to diseases that are less preventable?

- If so, is the relationship weaker in Canada than the U.S.?
Analysis

- Canadian data: National Population Health Survey (1998/1999)
  - N = 10,747

  - N = 9,911

- Sample: 25+ years old
Outcomes

- High preventability disease:
  - Cardiovascular disease

- Low preventability disease:
  - Cancer
Variables

• Independent variables
  ▪ Education: at most a high school degree
  ▪ Household income quintile: lowest compared to all higher (adjusted for hh size)

• Control variables
  ▪ White (vs. nonwhite)
  ▪ Smokes
  ▪ Age (continuous)
  ▪ Male (vs. female)
Fair/Poor Health by Household Income Quintile, U.S. & Canada, 1998-1999
Multivariate Analysis

- Sample: respondents reporting one of the diseases of interest
  - NPHS: $N = 807$
  - PSID: $N = 971$

- Selection bias
  - Propensity scores
Multivariate Analysis

- Logistic regression
  - Odds of experiencing cardiovascular disease vs. cancer
  - Comparison of effects in U.S. and Canada
Multivariate Results

**U.S.**
- Low educ increases odds of cardiovascular disease compared to cancer (O.R. = 1.59)
- Lowest income quintile increases the odds of cardiovascular disease compared with cancer (O.R. = 1.52)

**Canada**
- Educ not significant
- Income quintile not significant
Conclusions

- Support for fundamental cause theory in the U.S., but not Canadian, case
- Social policies and level of inequality may buffer the association between SES and the incidence of highly preventable diseases
- Canadian social policies more effective at mitigating social determinants of disease
Socioeconomic History & Preventable Disease: A Comparative Analysis of Fundamental Cause Theory

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Funded by SSHRC
Research Questions

- Is a long-term pattern of low SES more strongly associated with highly preventable diseases compared to less preventable disease in Canada and the U.S.?

- Does the relationship occur in both Canada and the U.S. in similar magnitudes?
Analysis

  - N = 16,617

- **Canadian data:** National Population Health Survey
  - N = 10,159

- **Sample:** 25+ years old
Dependent Variable

- High preventability disease:
  - Cardiovascular disease

  vs.

- Low preventability disease:
  - Cancer
Variables

- **Independent variables**
  - **Income History:**
    - Household income quintile measured in each cycle
    - Bottom 2 and top 2 quintiles combined
  - Latent class analysis: Four clusters
    - Stably high income
    - Stably low income
    - Increasing
    - Decreasing
Income History Clusters: NPHS
Income History Clusters: PSID

- Stably High
- Stably Low
- Decreasing
- Increasing


- 30%
- 21%
- 14%
- 35%
Variables

- Independent variables (continued)
  - Education
    - < high school
    - High school
    - University
Variables

- Control variables
  - White (vs. nonwhite)
  - Age
    - Young (25-44)
    - Middle (45-64)
    - Old (65+)
  - Female (vs. male)
Variables

- Control variables
  - Marital History:
    - Marital status measured in each cycle
    - Latent class analysis:
      - Stably married
      - Never married
      - Marital transitions
  - Smoking History
    - Smoking measured in each cycle
    - Latent class analysis:
      - Smoker (2+ cycles)
      - Non-smoker (< 2 cycles)
Multivariate Analysis

- Sample: respondents reporting one of the diseases of interest
- NPHS: \( N = 726 \)
- PSID: \( N = 1,737 \)
- Selection Bias
Multivariate Analysis

- Logistic regression (weighted)
  - Odds of experiencing cardiovascular disease vs. cancer
  - Comparison of effects in U.S. and Canada
## Multivariate Results

<table>
<thead>
<tr>
<th></th>
<th>U.S.</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>History of low income increases the odds of cardio vs. cancer (O.R.=1.39)</td>
<td>Income history not significant</td>
</tr>
<tr>
<td></td>
<td>Low educ increases the odds of cardio vs. cancer (O.R.=1.88)</td>
<td>Low educ increases the odds of cardio vs. cancer (O.R.=1.95)</td>
</tr>
</tbody>
</table>
Conclusions

- Support for fundamental cause theory
- Canadian social policies are more effective than U.S. in altering the social conditions related to low income that affect the determinants of disease
Conclusions

- Support for fundamental cause theory
- Canadian social policies are more effective than U.S. in altering the social conditions related to low income that affect the determinants of disease
- Social policies may buffer income inequality to a greater extent than inequality in education
Conclusions

- Fundamental cause theory emphasizes focus on social conditions

- Relationship between health disparities and economic disparities reflects policy choices