Social stratification, health belief and health-prevention screenings among older adults in China

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Disclosure

• Co-authors
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• Learner objectives:
  – Better understanding of barriers to health-prevention screenings among Chinese older adults.
  – Better knowledge on designing culturally appropriate interventions to promote preventive care practices
Outline

• Introduction
• Methods
• Findings
• Conclusion
Introduction

• Increasing older adults population in China
• Preventive care:
  – Crucial for secondary and tertiary prevention of diseases
  – Low awareness in China
• Healthy People 2020 also recommends regular health-prevention screenings
Introduction (cont’d)

• Well established relationship between social stratification and health care utilization
• Health belief may influence performance of health-prevention screenings
• Little is know about how social stratification, health belief, and health-prevention screenings are related
Specific Aims

• To explore direct and indirect relationships between social stratification and health-prevention screenings,
• To test the mediating effect of health belief on the relationship between social stratification and health-prevention screenings.
Health Belief Model (HBM)

Socioeconomic factors:
- Age
- Gender
- Education
- Insurance

Perceived benefits
Perceived barriers

Perceived susceptibility
Perceived Severity

Perceived threats of diseases

Cues of action

Action
Methods

• The study used data from 2013 Survey of the Shanghai Elderly Life and Opinion (SELO).
Source of SELO

- Cross-sectional study
- 10 districts in Shanghai (5 urban, 5 suburban and rural)
- 3418 individuals aged 60+
Health-prevention Screenings

• Categories:
  – Complete blood count (CBC)
  – Urinalysis
  – Stool analysis

• Variables:
  – Summary score
  – Three binary variables
Modified Attitudinal Index (AI)

- Measures Chinese older adults’ health belief about health-prevention screenings
- Originally tested in Singapore
- 4 dimensions (16 items):
  - Barriers
  - Fatalism
  - Detects
  - Necessity
- Range: 16-64, higher score indicates more negative health belief
Social stratification

- Education
- Financial status: (5 point Likert scale: 1=very poor, 5=very good)
- Location: urban/rural
- Medical Insurance (Yes/No):
  - Rural Cooperative Medical Insurance
  - Urban Resident Medical Insurance
  - Urban Employee Medical Insurance
  - Government Medical Insurance
Covariates

• Gender
• Age
• Marital status
• Self-rated health status: (5 point Likert scale: 1=very poor, 5=very good)
• Number of chronic conditions: 0-6
Data analysis

- Structural equation modeling (Stata 14)
- Goodness of fit
  - The Chi-square statistic tests: >0.05
  - The root mean square error of approximation (RMSEA) :<0.08
  - The standardized root mean square residual (SRMR) :<0.05
  - The Comparative Fit Index (CFI) :>0.90
### Table 1 Characteristics of the Participants

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Total sample (n=3418)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-reported health status</strong></td>
<td></td>
</tr>
<tr>
<td>Very good</td>
<td>9.1</td>
</tr>
<tr>
<td>Good</td>
<td>28.7</td>
</tr>
<tr>
<td>Fair</td>
<td>49.9</td>
</tr>
<tr>
<td>Poor</td>
<td>10.9</td>
</tr>
<tr>
<td>Very poor</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Financial status</strong></td>
<td></td>
</tr>
<tr>
<td>Very good</td>
<td>1.2</td>
</tr>
<tr>
<td>Good</td>
<td>17.4</td>
</tr>
<tr>
<td>Fair</td>
<td>69.7</td>
</tr>
<tr>
<td>Poor</td>
<td>9.4</td>
</tr>
<tr>
<td><strong>Number of chronic diseases (mean±SD)</strong></td>
<td>1.0±0.9</td>
</tr>
<tr>
<td><strong>Health belief (mean±SD)</strong></td>
<td>28.7±4.9</td>
</tr>
<tr>
<td><strong>Health-prevention screenings</strong></td>
<td></td>
</tr>
<tr>
<td>CPC</td>
<td>64.2</td>
</tr>
<tr>
<td>Urinalysis</td>
<td>54.2</td>
</tr>
<tr>
<td>Stool analysis</td>
<td>23.1</td>
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## Direct, indirect effects

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Direct effect</th>
<th>Indirect effect</th>
<th>Total effect</th>
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<tbody>
<tr>
<td><strong>Health belief</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Edu → belief</td>
<td>-0.23***</td>
<td>-</td>
<td>-0.23***</td>
</tr>
<tr>
<td>Insurance → belief</td>
<td>-1.84***</td>
<td>-</td>
<td>-1.84***</td>
</tr>
<tr>
<td>Finance → belief</td>
<td>-0.72***</td>
<td>-</td>
<td>-0.72***</td>
</tr>
<tr>
<td>Urban → belief</td>
<td>2.46***</td>
<td>-</td>
<td>2.46***</td>
</tr>
<tr>
<td><strong>Health-prevention screenings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Edu → screenings</td>
<td>0.04***</td>
<td>0.01**</td>
<td>0.05***</td>
</tr>
<tr>
<td>Insurance → screenings</td>
<td>0.57***</td>
<td>0.02***</td>
<td>0.59***</td>
</tr>
<tr>
<td>Finance → screenings</td>
<td>0.05**</td>
<td>0.01***</td>
<td>0.06***</td>
</tr>
<tr>
<td>Urban → screenings</td>
<td>-0.12***</td>
<td>-0.03***</td>
<td>-0.15***</td>
</tr>
<tr>
<td>Belief → screenings</td>
<td>-0.01***</td>
<td>-</td>
<td>-0.01***</td>
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</table>
## Goodness of fit

<table>
<thead>
<tr>
<th>Model Fit Index</th>
<th></th>
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<tbody>
<tr>
<td>chi2_ms</td>
<td>127.469</td>
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<tr>
<td>chi2_bs</td>
<td>3995.238</td>
</tr>
<tr>
<td>RMSEA (90%CI)</td>
<td>0.045 (0.037-0.052)</td>
</tr>
<tr>
<td>CFI</td>
<td>0.973</td>
</tr>
<tr>
<td>SRMR</td>
<td>0.014</td>
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</tbody>
</table>
Conclusion

• Confirm the direct and indirect relationships between social stratification and health-prevention screenings,

• health belief mediates the relationships between social stratification and health-prevention screenings
Implications for Nursing Practice

• Empirical evidence on how health belief mediates the effects of social stratification on performance of health-prevention screenings among Chinese elderly

• Culturally appropriate preventive care interventions are urgently needed
Limitations

- Urban population in Shanghai
- Cross-sectional data
Thank you

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