Social networks, health and well-being: Evidence from SAGE

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Ageing and Health: from evidence to policy
Geneva, Switzerland, 2 - 4 June 2010
Social networks, health and well-being

- Evidence of the impact on health and health-related outcomes
  - mortality (Berkman 1979, House 1982)
  - physical and mental illness (Kawachi 2001, Kessler 1985, Mendes de Leon 2003)
  - functioning and independence (Seeman 1996)
  - happiness (Fowler 2008)
  - risk factors (Christakis 2007, 2008)
- Differential effects in younger and older populations (Antonucci 1990, Pillemer 2000)
Social networks - framework

– Structural characteristics
  • Size, location, density, homogeneity

– Functional characteristics
  • Social support (emotional, instrumental…)
  • Social connectedness (presence/absence of ties, appraisal of relationships)
    - Reporting loneliness, depression
  • Trust
Research Questions

Is poor social network associated with higher level of disability and poor quality of life in low-middle income countries?

What are the patterns of happiness and well-being in low-middle income populations?
The SAGE study

Results for 45,000 individual 18+ years old across 6 countries.

Assess health, well-being and quality of life using standardized instruments: WHODAS-12, WHOQoL-8.

Social network questions from multiple modules - covering structural and functional aspects, trust, safety, and political/community engagement.
<table>
<thead>
<tr>
<th>Characteristics</th>
<th>China</th>
<th>India</th>
<th>Mexico</th>
<th>Russia</th>
<th>South Africa</th>
<th>Ghana</th>
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<tbody>
<tr>
<td>Total subject (N)</td>
<td>13,265</td>
<td>7,527</td>
<td>2,734</td>
<td>3,163</td>
<td>3,842</td>
<td>4,768</td>
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<td>Sex (%)</td>
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<tr>
<td>Men</td>
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<td>38.7</td>
<td>38.3</td>
<td>37.1</td>
<td>42.5</td>
<td>52.8</td>
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<td>Women</td>
<td>53.0</td>
<td>61.3</td>
<td>61.7</td>
<td>62.9</td>
<td>57.5</td>
<td>47.3</td>
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<tr>
<td>Age Group (%)</td>
<td></td>
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<tr>
<td>18-49</td>
<td>11.0</td>
<td>41.6</td>
<td>15.6</td>
<td>8.5</td>
<td>9.1</td>
<td>15.8</td>
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<td>50-59</td>
<td>39.5</td>
<td>26.2</td>
<td>15.8</td>
<td>34.1</td>
<td>40.1</td>
<td>33.1</td>
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<td>60-69</td>
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<td>19.9</td>
<td>34.2</td>
<td>24.9</td>
<td>29.2</td>
<td>23.6</td>
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<td>70-79</td>
<td>18.5</td>
<td>9.4</td>
<td>22.6</td>
<td>23.7</td>
<td>15.7</td>
<td>19.3</td>
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<td>80+</td>
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<td>2.9</td>
<td>11.8</td>
<td>8.8</td>
<td>5.9</td>
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<td>Highest education level (%)</td>
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<td>Completed college/university</td>
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<td>6.4</td>
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<td>7.3</td>
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<td>10.7</td>
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<tr>
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<td>22.7</td>
<td>13.4</td>
<td>18.9</td>
<td>19.5</td>
<td>11.2</td>
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<tr>
<td>Completed primary</td>
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<td>27.9</td>
<td>28.6</td>
<td>7.8</td>
<td>31.1</td>
<td>25.2</td>
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<td>Less than primary</td>
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<td>19.1</td>
<td>46.8</td>
<td>1.9</td>
<td>31.4</td>
<td>21.6</td>
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<td>Current marital status (%)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Not married</td>
<td>15.8</td>
<td>22.4</td>
<td>36.5</td>
<td>42.5</td>
<td>47.0</td>
<td>40.0</td>
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<tr>
<td>Married</td>
<td>84.2</td>
<td>77.6</td>
<td>63.5</td>
<td>57.5</td>
<td>53.0</td>
<td>60.0</td>
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<tr>
<td>Always live in the area (%)</td>
<td>55.7</td>
<td>56.7</td>
<td>75.7</td>
<td>53.6</td>
<td>71.3</td>
<td>65.9</td>
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<td>Currently working (%)</td>
<td>50.6</td>
<td>64.2</td>
<td>53.5</td>
<td>36.8</td>
<td>32.3</td>
<td>73.2</td>
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</tbody>
</table>
Measuring Social Networks in SAGE

4 dichotomous Qs, mix of structural and functional characteristics
- Marital status
- Attend religious activities
- Participate in clubs
- Trust/confidant

Summation of scores

9 social network Qs and 5 trust Qs
Ordinal responses
- How often in the last year have you ....?
- How much trust do you have in different groups of people?

Exploratory Factor Analysis
2 Factor Solution ➔ Quintiles of Factor Score

Social Cohesion Index
(0=Worst, 4=Best)

Social Network Index
(Q1=Worst, Q4=Best)

Trust Index
(Q1=Worst, Q4=Best)
Analysis

Outcome variables:

- WHO DAS score (categorized into quartiles, 4\textsuperscript{th}/best as reference)
- WHO QOL score (categorized into quartiles, 4\textsuperscript{th}/best as reference)

Ordinal logistic regression to assess the association between different indices and outcome variables
Social Cohesion Index (Range 0 - 4)

- Ghana
- South Africa
- Russia
- Mexico
- India
- China

Legend:
- 0 (Worst)
- 1
- 2
- 3
- 4 (Best)
Social Network and Trust Indices

Network Index Quintiles

- Ghana
- South Africa
- Russia
- Mexico
- India
- China

Trust Index Quintiles

- Ghana
- South Africa
- Russia
- Mexico
- India
- China

Q1 (Worst) - Q2 - Q3 - Q4 - Q5 (Best)
Disability and Quality of Life

WHO DAS Quartiles

- Ghana
- South Africa
- Russia
- Mexico
- India
- China

WHO QOL Quartiles

- Ghana
- South Africa
- Russia
- Mexico
- India
- China

Legend:
- Q1 (Worst)
- Q2
- Q3
- Q4 (Best)
Adjusted for age, sex, highest education, marital status, country, lived continuously in the area, and currently working.
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Measuring Well-being and Happiness in SAGE

- SAGE – Evaluative and experienced well-being
  - WHOQoL-8
  - Day Reconstruction Method (Kahneman, Science 2004)

- "A snapshot…of psychological well-being…" Stone, PNAS 2010
  - Global WB = Evaluative
    - "Taking all things together, how satisfied are you with your life as a whole these days?"
  - Hedonic WB = Experienced
    - "Did you feel … for much of the day yesterday?"
    - Positive: enjoyment; smile/laugh
    - Negative: worry; anger; depression; stress
Adjusted for sex, highest education, marital status, country, lived continuously in the area, currently working
Experienced well-being (- and +)
Conclusions

- Social network indexes show promise
  - Basic model demonstrates clear patterns
  - Second model provides additional details which can be used for policy and planning purposes
  - Adjust for reporting loneliness and depression
  - In some groups, internet social networking
  - Next steps: further develop models

- Initial results indicate scope for interventions – particularly in those with high levels of disability