Korean Longitudinal Study of Ageing (KLoSA): A brief overview and selected research findings

Regional Workshop on Integrating Policy and Research on Ageing in ASEAN: Conversations Across the Policy and Research Divide
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Duke-NUS Medical School, Singapore

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Seoul National University College of Medicine
Korean Longitudinal Study of Aging (KLoSA)

- Korean equivalent of US HRS and SHARE in Europe
- Administered by Korea Employment Information Service
- Non-institutionalized South Korean adults 45yo or older (in 2006)
- First wave (2006): N=10,254, every even-numbered year afterwards (7th wave in 2018, currently available up to 6th wave in 2016)
- Off-year survey in odd-numbered years (e.g. Job history)
- Detailed information on respondents, their children, siblings and parents
- Survey on the deceased (based on their family members’ response)
- Replenished the original sample with younger new entrants (5th wave)
- Overall retention in 6th wave (2016): 79.6%
Retention, deceased, and replenishment

<table>
<thead>
<tr>
<th>Period</th>
<th>Panel Total</th>
<th>Panel B+C</th>
<th>Panel B</th>
<th>Panel C</th>
<th>Panel (B+C)/Panel A</th>
<th>Panel (B+C)</th>
<th>Panel (B)</th>
<th>Panel (C)</th>
<th>Panel (B+C)/Panel A</th>
</tr>
</thead>
<tbody>
<tr>
<td>기분 1차('06)</td>
<td>10,254</td>
<td>10,254</td>
<td>10,254</td>
<td>-</td>
<td>-</td>
<td>100.0</td>
<td>86.6</td>
<td>81.7</td>
<td>80.1</td>
</tr>
<tr>
<td>기분 2차('08)</td>
<td>10,254</td>
<td>8,875</td>
<td>8,688</td>
<td>187</td>
<td>67</td>
<td>86.6</td>
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<tr>
<td>기분 3차('10)</td>
<td>10,067</td>
<td>8,229</td>
<td>7,920</td>
<td>309</td>
<td>101</td>
<td>81.7</td>
<td></td>
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<tr>
<td>기분 4차('12)</td>
<td>9,758</td>
<td>7,813</td>
<td>7,486</td>
<td>327</td>
<td>112</td>
<td>80.1</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>기분 5차('14)</td>
<td>10,436</td>
<td>8,387</td>
<td>7,949</td>
<td>438</td>
<td>142</td>
<td>80.4</td>
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</tr>
<tr>
<td>기분</td>
<td>9,431</td>
<td>7,467</td>
<td>7,029</td>
<td>438</td>
<td>142</td>
<td>79.2</td>
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</tr>
<tr>
<td>신규</td>
<td>1,005</td>
<td>920</td>
<td>920</td>
<td>0</td>
<td>0</td>
<td>91.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>기분 6차('16)</td>
<td>9,913</td>
<td>7,893</td>
<td>7,490</td>
<td>403</td>
<td>138</td>
<td>79.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>기분</td>
<td>8,993</td>
<td>7,015</td>
<td>6,618</td>
<td>397</td>
<td>138</td>
<td>78.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>신규</td>
<td>920</td>
<td>878</td>
<td>872</td>
<td>6</td>
<td>0</td>
<td>95.4</td>
<td></td>
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</tr>
</tbody>
</table>

Success of survey on deceased

Replenishment with new sample
Information on intergenerational relations

Respondent (R) → Giving → Receiving

R’s parent

R’s child
Caregiving, health, and economic outcomes

- Care recipient
  - Care recipient health (+/-)
  - Economic behaviors

- Care
  - Caregiver health (+/-)
  - Health care financing (+/-)
  - Care recipients’ well-being (+/-)

- Caregiver
  - Labor force participation (+/-)
  - Hours of work, wage rate
  - Caregiver health (+/-)

- Time
  - Wealth (-): direct costs

- Labor market
  - Economic behaviors

- Health care
  - Use

- Health care financing (+/-)
  - Care recipients’ well-being (+/-)
Selected research findings

• Intergenerational issues
  – Living arrangements and health
  – Informal caregiving and caregiver health
  – Parental bequest and expectation of receiving care from adult children

• Elderly health
  – Housing and fall
  – Mental health and health care utilization
Living arrangements and health

*J Gerontology: Social Sciences* (2012)


The Effect of Coresidence With an Adult Child on Depressive Symptoms Among Older Widowed Women in South Korea: An Instrumental Variables Estimation

Young Kyung Do and Chetna Malhotra

Program in Health Services and Systems Research, Duke-NUS Graduate Medical School Singapore, Singapore.
Causal association between coresidence and depressive symptoms?

- Coresidence with an adult child
  - Instrumental variable (IV) → mimics the random assignment of coresidence
  - Number of sons
  - Whether eldest child is daughter
  : Statistical tests suggested these are good IVs
Results

• (Naïve) OLS estimate: $-0.700$ (95% CI: $-1.196$, $-0.204$): Close to group mean difference, $-0.097$

• (Unbiased) IV-2SLS estimate: $-7.749$ (95% CI: $-14.092$, $-1.407$)

• OLS underestimates the protective effect of coresidence on depressive symptoms.
Informal caregiving and caregiver health


INFORMAL CARE AND CAREGIVER’S HEALTH

YOUNG KYUNG DO\textsuperscript{a,*}, EDWARD C. NORTON\textsuperscript{b}, SALLY C. STEARNS\textsuperscript{c}
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\textsuperscript{d}Center for Health Services Research in Primary Care, Durham Veterans Affairs Medical Center, Department of Medicine, Duke University Medical Center, Durham, NC, USA
Daughter-in-law sample: negative health effects

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Obs</th>
<th>OLS or Probit</th>
<th>IV-2SLS or IV Probit</th>
<th>Test</th>
<th>Overid.</th>
<th>Exogeneity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Coeff. (S.E.)</td>
<td>Coeff. (S.E.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction with QOL (0–100)</td>
<td>1852</td>
<td>-4.95* (2.98)</td>
<td>-4.12 (3.42)</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>Satisfaction with health (0–100)</td>
<td>1848</td>
<td>-3.22 (3.37)</td>
<td>-8.09* (4.20)</td>
<td>NS</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>CES-D score (0–30)</td>
<td>1846</td>
<td>0.57 (0.49)</td>
<td>1.19* (0.71)</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>Prob (CES-D items checked ≥ 4)</td>
<td>1855</td>
<td>0.29 (0.21)</td>
<td>0.70*** (0.27)</td>
<td>NS</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>Prob (CES-D score ≥ 10)</td>
<td>1855</td>
<td>-0.08 (0.25)</td>
<td>-0.03 (0.32)</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>Prob (Pain affecting daily activities)</td>
<td>1855</td>
<td>0.39* (0.22)</td>
<td>0.53* (0.29)</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>Prob (Self-reported health Fair to poor)</td>
<td>1855</td>
<td>0.28 (0.21)</td>
<td>0.55** (0.27)</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>Prob (Any outpatient care use)</td>
<td>1855</td>
<td>0.13 (0.21)</td>
<td>0.26 (0.28)</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>Log(Out-of-pocket costs) if any</td>
<td>1181</td>
<td>0.36 (0.25)</td>
<td>0.80** (0.34)</td>
<td>NS</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Prob (Any regular prescription drug use)</td>
<td>1855</td>
<td>0.36* (0.21)</td>
<td>0.21 (0.28)</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>Log(Out-of-pocket costs) if any</td>
<td>495</td>
<td>0.42* (0.24)</td>
<td>0.60** (0.24)</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
</tbody>
</table>

Notes: *** p<0.01, ** p<0.05, * p<0.1. NS denotes 'not significant' at the 10% level.
Parent’s Bequest (giving) expectation → IC (receiving) expectation (%)?

Incremental probability when \( E(\text{bequest}) = 1 \)
Predicted probability when \( E(\text{bequest}) = 0 \)

<table>
<thead>
<tr>
<th>Gender, Coresiding</th>
<th>Incremental Probability</th>
<th>Predicted Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male, non-coresiding</td>
<td>9.3% *</td>
<td>27.8%</td>
</tr>
<tr>
<td>Male, coresiding</td>
<td>1.8%</td>
<td>32.5%</td>
</tr>
<tr>
<td>Female, non-coresiding</td>
<td>9.6% *</td>
<td>38.2%</td>
</tr>
<tr>
<td>Female, coresiding</td>
<td>3.3%</td>
<td>47.6%</td>
</tr>
</tbody>
</table>

Models control for number of children, age, marital status, education level, amount of assets, home ownership, residential area, year effect. * \( p < 0.05 \).
Housing and fall

*Geriatr and Gerontol Int* (2013)

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Geriatric and Gerontology International

**Geriatr Gerontol Int 2013; 13: 867-873**

**ORIGINAL ARTICLE: EPIDEMIOLOGY, CLINICAL PRACTICE AND HEALTH**

**Home ownership and fall-related outcomes among older adults in South Korea**

Young Kyung Do¹ and Cheong-Seok Kim²

¹Program in Health Services and Systems Research, Duke-NUS Graduate Medical School Singapore, Singapore, and ²Department of Sociology, Dongguk University-Seoul, Seoul, Korea
Home ownership and falls among older adults

- South Korea has one of the **highest rates of elderly poverty** among developed countries (approx. 50%)
- Three major types: own home, long-term & short-term rental
- A substantial number of **older adults live in short-term rental homes** with relatively small amounts of monthly rent
- **Short-term rental homes** can potentially influence fall-related outcomes:
  - Overall low quality of the home environment: risk factors
  - Occupants’ attitude and willingness to improve their housing conditions: risk factors are less likely to be addressed by occupants and owners
These risk factors for falls are less likely to be addressed in short-term rental homes

- Tripping or slipping hazards
- Absence of stair railings or grab poles
- Having unstable furniture
- Uneven flooring
- Poor lighting
Compared with owned home, short-term rental home predicted higher likelihood of reporting any falls in the past 2 years

Odds ratio of any falls in the past 2 years (Wave 2)

<table>
<thead>
<tr>
<th>Home ownership</th>
<th>Odds ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own home (ref.)</td>
<td>1</td>
</tr>
<tr>
<td>Lease on deposit basis</td>
<td>0.96</td>
</tr>
<tr>
<td>Monthly rent and other</td>
<td>2.24*</td>
</tr>
</tbody>
</table>

Note: *p < 0.05; logistic regression model controlled for age, gender, being currently married, coresidence with an adult child, education level, total household assets, residence area, self-reported health, grip strength and eyesight.
Mental health and health care utilization

Social Science and Medicine (2012)

Short report

Predictors of and health services utilization related to depressive symptoms among elderly Koreans

Jin Hee Shin\textsuperscript{a}, Young Kyung Do\textsuperscript{b}, Joanna Maselko\textsuperscript{c}, Rebecca J.N. Brouwer\textsuperscript{a}, Sang Wook Song\textsuperscript{d}, Truls Østbye\textsuperscript{a,b,*}

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\textsuperscript{b} Duke-NUS Graduate Medical School, Singapore
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\textsuperscript{d} Department of Family Medicine, Catholic University Medical Center, Korea
Policy agenda setting

Social problem

Policy problem
Kingdon’s multiple streams model

Kingdon's multiple streams model: The coupling of all three streams (Versluis et al, 2011, p. 116)