



北京大学国家发展研究院
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Health in China: Evidence from CHARLS

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China Health and Retirement Longitudinal Study

中国健康养老追踪调查

Biennial survey representative of the residents of China aged 45 and older



Significance

- China is one of the most rapidly aging countries in the world
- Economy is rapidly growing from a low level, so elderly in China face different challenges and opportunities than elderly in higher income countries
- China is revamping many policies affecting the elderly and evaluating their impacts is important



Aims

- Provide a high quality HRS-type data for behavioural and policy research
 - Multi-disciplinary
 - Survey methodology
- Harmonize survey instruments with other HRS-type surveys to enable cross-country comparative studies



Timeline

- 2008: pilot – Gansu & Zhejiang
- 2011-12: National baseline



Questionnaire

- Cover screen
- Household roster
- Demographics
- Family structure/transfer
- Health status and functioning
- Biomarkers
- Health care and insurance
- Work, retirement and pension
- Income and consumption
- Assets
- Housing conditions

- Community survey

- Policy survey



2008 Data

- Gansu and Zhejiang provinces
- July-September 2008
- 1569 households, 2685 individuals
- Response rate 85%
- Public release within 7 months, complete with weights, coding, documentations
- ~1900 registered users, 1/3 from abroad



Funding Sources

- NIA
- World Bank
- Natural Science Foundation of China
- Peking University



International Advisors

- [James Smith](#), Director of the Center for Chinese Aging Studies, RAND Corporation
- [David Wise](#), Harvard University and Director of Aging Studies, NBER
- [Robert Wills](#), University of Michigan
- [David Weir](#), University of Michigan
- [Axel Borsch Supan](#), University of Mannheim
- [James Banks](#), University College London
- [Lisa Berkman](#), Harvard University
- [Arie Kapteyn](#), Director of Labor and Population Studies, Rand Corporation
- [David Bloom](#), Harvard University

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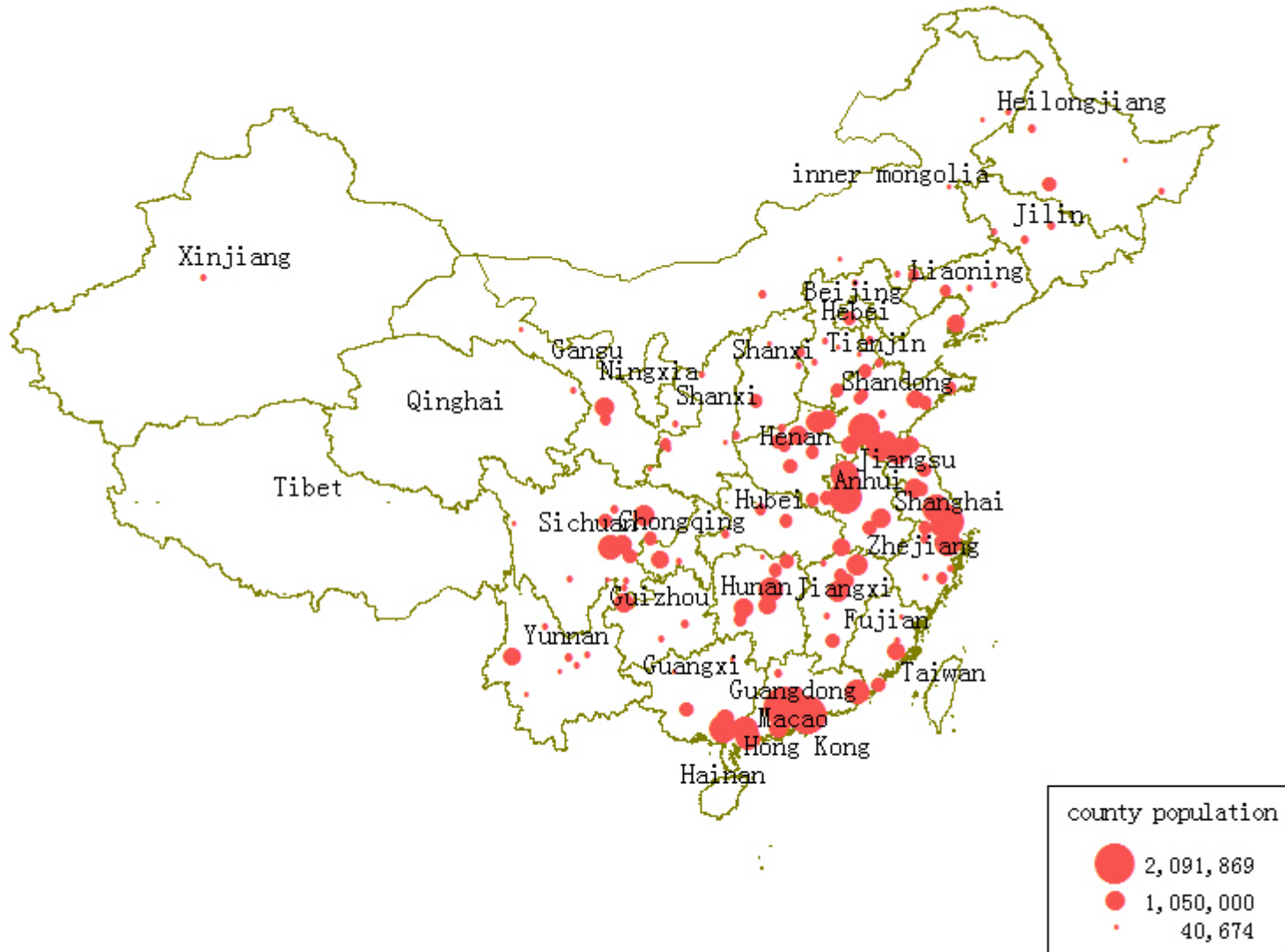


National Baseline

- Multi-stage PPS random sampling
 - Counties (stratification: by regions, urban/rural, pc GDP): 150
 - Villages/communities: 450
 - Household sampling frame created out of the mapping/listing operation
 - One household member 45 and older randomly chosen, plus the spouse
- Sample size:
 - Households: 10,281; Persons: 17,705
- Field work: May 2011-March 2012



County distribution



CHARLS Results

Results are preliminary and unweighted. Please do not cite.

Table 1. 2011-2012 Baseline Sample size and Response Rate

| | Total | Rural | Urban |
|------------------------------------|--------|--------|--------|
| Assigned households | 23,590 | 10,675 | 12,915 |
| Age eligible rate(%) | 62.17 | 72.03 | 53.49 |
| Response rate(%) (cv complete) | 88.65 | 93.34 | 84.20 |
| Sample Households | 10,703 | 6,206 | 4,497 |
| Response rate(%) (roster complete) | 85.16 | 91.08 | 79.11 |
| Sample Households | 10,281 | 6,056 | 4,225 |

Table 2 Refresher Sample (39-44)

| | # |
|----------------------|------|
| Total issued sampled | 2164 |
| Male | 970 |
| Female | 1193 |
| Urban | 1029 |
| Rural | 1135 |

Table 3 Age & Sex Composition

| Age Group | Total | | Male | | Female | | Percent of Male (%) |
|-----------|-------|--------|------|--------|--------|--------|---------------------|
| | N | % | N | % | N | % | |
| <50 | 3849 | 21.74 | 1610 | 18.99 | 2236 | 24.26 | 41.83 |
| 50-54 | 2592 | 14.64 | 1261 | 14.87 | 1329 | 14.42 | 48.65 |
| 55-59 | 3528 | 19.93 | 1730 | 20.41 | 1795 | 19.48 | 49.04 |
| 60-64 | 2907 | 16.42 | 1449 | 17.09 | 1455 | 15.79 | 49.85 |
| 65-69 | 1865 | 10.53 | 956 | 11.28 | 909 | 9.86 | 51.26 |
| 70-74 | 1387 | 7.83 | 732 | 8.63 | 655 | 7.11 | 52.78 |
| 75-79 | 903 | 5.10 | 445 | 5.25 | 457 | 4.96 | 49.28 |
| 80+ | 674 | 3.81 | 295 | 3.48 | 379 | 4.11 | 43.77 |
| Total | 17705 | 100.00 | 8478 | 100.00 | 9215 | 100.00 | 47.88 |

Table 3 Age & Sex Composition

| Age Group | Urban | | Rural | | Urban Hukou | | Rural Hukou | |
|-----------|-------|--------|-------|--------|-------------|--------|-------------|--------|
| | N | % | N | % | N | % | N | % |
| <50 | 1621 | 22.65 | 2228 | 21.12 | 799 | 20.06 | 3046 | 22.23 |
| 50-54 | 1068 | 14.92 | 1524 | 14.45 | 546 | 13.71 | 2044 | 14.92 |
| 55-59 | 1399 | 19.55 | 2129 | 20.18 | 757 | 19.01 | 2767 | 20.20 |
| 60-64 | 1151 | 16.08 | 1756 | 16.65 | 638 | 16.02 | 2266 | 16.54 |
| 65-69 | 679 | 9.49 | 1186 | 11.24 | 454 | 11.40 | 1408 | 10.28 |
| 70-74 | 568 | 7.94 | 819 | 7.76 | 379 | 9.52 | 1007 | 7.35 |
| 75-79 | 398 | 5.56 | 505 | 4.79 | 244 | 6.13 | 657 | 4.80 |
| 80+ | 272 | 3.80 | 402 | 3.81 | 166 | 4.17 | 506 | 3.69 |
| Total | 7156 | 100.00 | 10549 | 100.00 | 3983 | 100.00 | 13701 | 100.00 |

Comparison of age distribution between Census 2010 and CHARLS 2011 (main respondents)

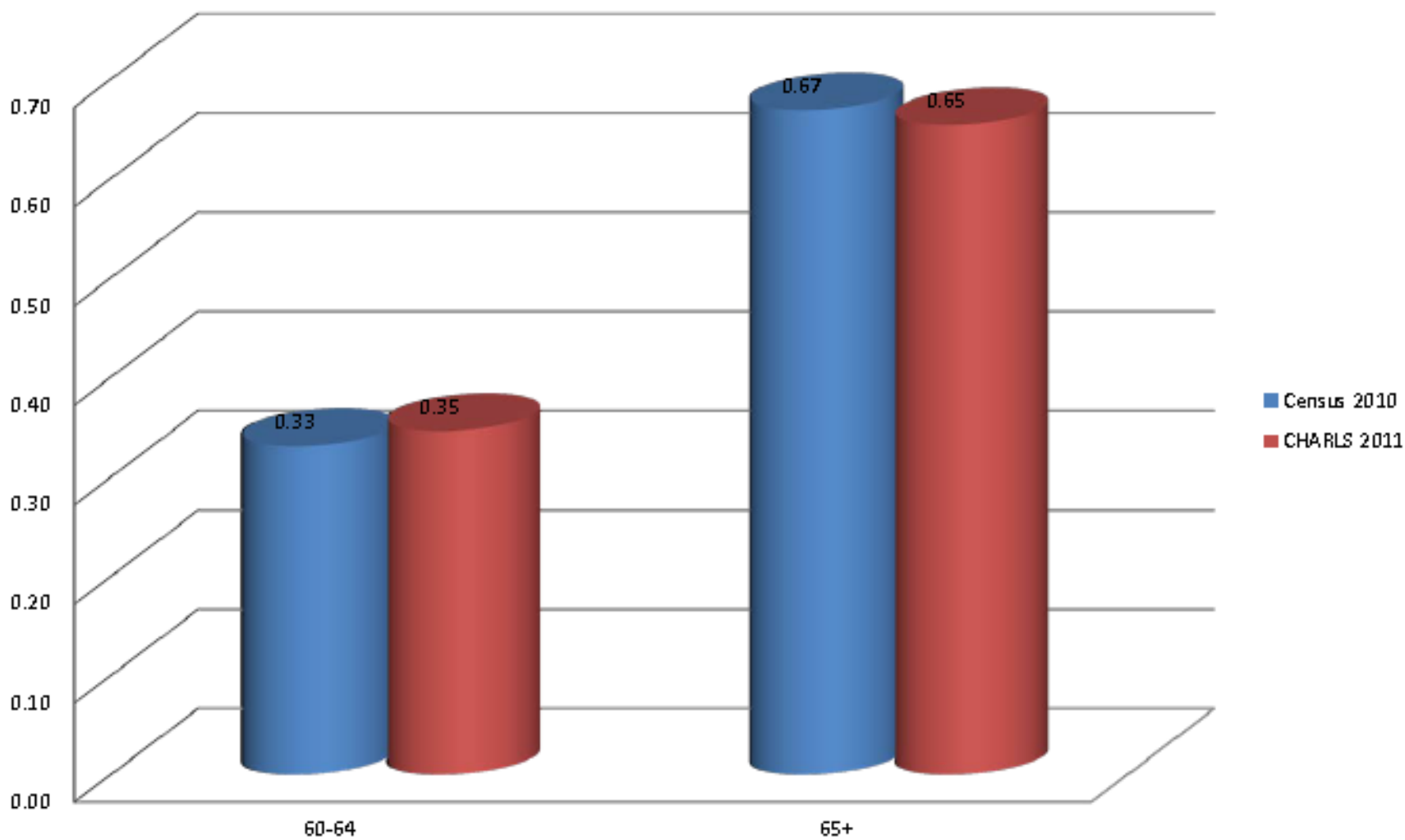


Table 4 Education Composition

| Age Group | Total | | Male | | Female | | Percent of Male (%) |
|----------------------|-------|--------|------|--------|--------|--------|---------------------|
| | N. | % | N. | % | N. | % | |
| Illiterate | 4795 | 27.13 | 1091 | 12.89 | 3701 | 40.24 | 22.75 |
| Able to read & write | 3066 | 17.34 | 1463 | 17.28 | 1599 | 17.38 | 47.72 |
| Sishu | 85 | 0.48 | 68 | 0.80 | 17 | 0.18 | 80.00 |
| Primary school | 3815 | 21.58 | 2201 | 26.00 | 1609 | 17.49 | 57.69 |
| Middle school | 3657 | 20.69 | 2227 | 26.31 | 1430 | 15.55 | 60.90 |
| High school | 1394 | 7.89 | 834 | 9.85 | 559 | 6.08 | 59.83 |
| Vocational school | 433 | 2.45 | 290 | 3.43 | 143 | 1.55 | 66.97 |
| 2-3 year college | 281 | 1.59 | 193 | 2.28 | 88 | 0.96 | 68.68 |
| 4-year college | 144 | 0.81 | 94 | 1.11 | 50 | 0.54 | 65.28 |
| Post-graduate | 7 | 0.04 | 5 | 0.06 | 2 | 0.02 | 71.43 |
| Total | 17677 | 100.00 | 8466 | 100.00 | 9198 | 100.00 | 47.89 |

Table 4 Education Composition

| Age Group | Urban | | Rural | | Urban Hukou | | Rural Hukou | |
|----------------------|-------|--------|-------|--------|-------------|--------|-------------|--------|
| | N | % | N | % | N | % | N | % |
| Illiterate | 1229 | 17.22 | 3566 | 33.83 | 372 | 9.36 | 4418 | 32.28 |
| Able to read & write | 1041 | 14.59 | 2025 | 19.21 | 364 | 9.16 | 2700 | 19.73 |
| Sishu | 29 | 0.41 | 56 | 0.53 | 17 | 0.43 | 67 | 0.49 |
| Primary school | 1462 | 20.48 | 2353 | 22.32 | 685 | 17.24 | 3125 | 22.83 |
| Middle school | 1785 | 25.01 | 1872 | 17.76 | 1101 | 27.71 | 2553 | 18.65 |
| High school | 856 | 11.99 | 538 | 5.10 | 665 | 16.73 | 729 | 5.33 |
| Vocational school | 339 | 4.75 | 94 | 0.89 | 372 | 9.36 | 61 | 0.45 |
| 2-3 year college | 249 | 3.49 | 32 | 0.30 | 250 | 6.29 | 31 | 0.23 |
| 4-year college | 140 | 1.96 | 4 | 0.04 | 141 | 3.55 | 3 | 0.02 |
| Post-graduate | 7 | 0.10 | | | 7 | 0.18 | | |
| Total | 7137 | 100.00 | 10540 | 100.00 | 3974 | 100.00 | 13687 | 100.00 |

Table 5. Non-blood Biomarker Response Rates (%)

| Age | Total Eligible | Total Responded | | Male | | Female | |
|-------|----------------|-----------------|---------------|------|---------------|--------|---------------|
| | | N | Complete Rate | N | Complete Rate | N | Complete Rate |
| <50 | 3849 | 2884 | 74.9 | 1121 | 69.6 | 1760 | 78.7 |
| 50-54 | 2592 | 1973 | 76.1 | 930 | 73.8 | 1042 | 78.4 |
| 55-59 | 3528 | 2816 | 79.8 | 1343 | 77.6 | 1470 | 81.9 |
| 60-64 | 2907 | 2384 | 82.0 | 1165 | 80.4 | 1217 | 83.6 |
| 65-69 | 1865 | 1578 | 84.6 | 809 | 84.6 | 769 | 84.6 |
| 70-74 | 1387 | 1141 | 82.3 | 602 | 82.2 | 539 | 82.3 |
| 75-79 | 903 | 738 | 81.7 | 361 | 81.1 | 376 | 82.3 |
| 80+ | 674 | 476 | 70.6 | 207 | 70.2 | 269 | 71.0 |
| Total | 17705 | 13990 | 79.0 | 6538 | 77.1 | 7442 | 80.8 |

Table 5. Non-blood Biomarker Response Rates (%)

| Age | Urban | | Rural | | Urban Hukou | | Rural Hukou | |
|-------|-------|---------------|-------|---------------|-------------|---------------|-------------|---------------|
| | N | Complete Rate | N | Complete Rate | N | Complete Rate | N | Complete Rate |
| <50 | 1130 | 69.7 | 1754 | 78.7 | 497 | 62.2 | 2383 | 78.2 |
| 50-54 | 742 | 69.5 | 1231 | 80.8 | 348 | 63.7 | 1624 | 79.5 |
| 55-59 | 1015 | 72.6 | 1801 | 84.6 | 513 | 67.8 | 2302 | 83.2 |
| 60-64 | 868 | 75.4 | 1516 | 86.3 | 461 | 72.3 | 1921 | 84.8 |
| 65-69 | 529 | 77.9 | 1049 | 88.4 | 347 | 76.4 | 1231 | 87.4 |
| 70-74 | 423 | 74.5 | 718 | 87.7 | 260 | 68.6 | 881 | 87.5 |
| 75-79 | 304 | 76.4 | 434 | 85.9 | 179 | 73.4 | 559 | 85.1 |
| 80+ | 168 | 61.8 | 308 | 76.6 | 102 | 61.4 | 373 | 73.7 |
| Total | 5179 | 72.4 | 8811 | 83.5 | 2707 | 68.0 | 11274 | 82.3 |

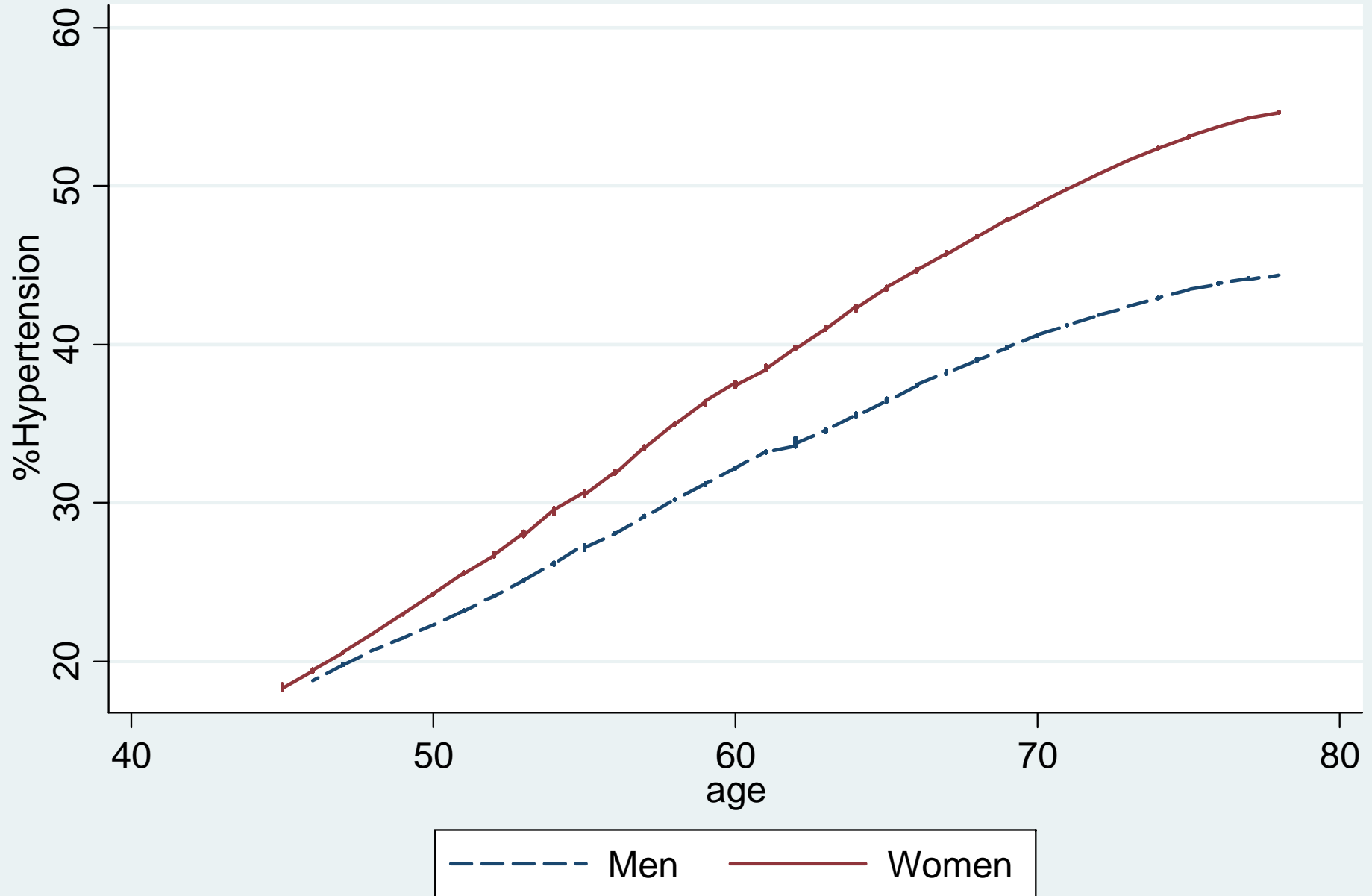
Table 6 Proxy Rates by Age

| Age Group | Total | | | Male | | | Female | | |
|-----------|-------|------|-------|------|-----|-------|--------|-----|-------|
| | Base | N | % | Base | N | % | Base | N | % |
| <50 | 3849 | 362 | 9.41 | 1610 | 234 | 14.53 | 2236 | 128 | 5.72 |
| 50-54 | 2592 | 236 | 9.10 | 1261 | 167 | 13.24 | 1329 | 69 | 5.19 |
| 55-59 | 3528 | 275 | 7.79 | 1730 | 185 | 10.69 | 1795 | 90 | 5.01 |
| 60-64 | 2907 | 181 | 6.22 | 1449 | 102 | 7.04 | 1455 | 77 | 5.29 |
| 65-69 | 1865 | 91 | 4.88 | 956 | 56 | 5.86 | 909 | 35 | 3.85 |
| 70-74 | 1387 | 75 | 5.41 | 732 | 43 | 5.87 | 655 | 32 | 4.89 |
| 75-79 | 903 | 73 | 8.08 | 445 | 35 | 7.87 | 457 | 38 | 8.32 |
| 80+ | 674 | 129 | 19.14 | 295 | 45 | 15.25 | 379 | 84 | 22.16 |
| Total | 17705 | 1422 | 8.03 | 8478 | 867 | 10.23 | 9215 | 553 | 6.00 |

Table 6 Proxy Rates by Age

| Age Group | Urban | | | Rural | | | Urban Hukou | | | Rural Hukou | | |
|-----------|-------|-----|-------|-------|-----|-------|-------------|-----|-------|-------------|------|-------|
| | Base | N | % | Base | N | % | Base | N | % | Base | N | % |
| <50 | 1621 | 152 | 9.38 | 2228 | 210 | 9.43 | 799 | 79 | 9.89 | 3046 | 283 | 9.29 |
| 50-54 | 1068 | 89 | 8.33 | 1524 | 147 | 9.65 | 546 | 43 | 7.88 | 2044 | 193 | 9.44 |
| 55-59 | 1399 | 106 | 7.58 | 2129 | 169 | 7.94 | 757 | 57 | 7.53 | 2767 | 216 | 7.81 |
| 60-64 | 1151 | 62 | 5.39 | 1756 | 119 | 6.77 | 638 | 31 | 4.86 | 2266 | 150 | 6.62 |
| 65-69 | 679 | 40 | 5.89 | 1186 | 51 | 4.30 | 454 | 21 | 4.63 | 1408 | 68 | 4.83 |
| 70-74 | 568 | 24 | 4.23 | 819 | 51 | 6.23 | 379 | 14 | 3.69 | 1007 | 61 | 6.06 |
| 75-79 | 398 | 26 | 6.53 | 505 | 47 | 9.31 | 244 | 13 | 5.33 | 657 | 60 | 9.13 |
| 80+ | 272 | 62 | 22.79 | 402 | 67 | 16.67 | 166 | 29 | 17.47 | 506 | 99 | 19.57 |
| Total | 7156 | 561 | 7.84 | 10549 | 861 | 8.16 | 3983 | 287 | 7.21 | 13701 | 1130 | 8.25 |

Figure Hypertension against age



Under-diagnosis of Hypertension

Continuum of Hypertension

| | Men | | Women | |
|------------------------|---------------|------|---------------|------|
| | % | N | % | N |
| Under-diagnosis | | | | |
| 45-54 | 49.3 (2.9) | 300 | 44.2 (2.6) | 369 |
| 55-64 | 45.1 (1.8) | 778 | 36.1 (1.6) | 900 |
| 65-74 | 38.8 (1.7) | 835 | 33.7 (1.5) | 996 |
| 75+ | 42.6 (2.0) | 619 | 43.2 (1.8) | 760 |
| Total(45+) | 42.9 (1.0) | 2532 | 38.1 (0.9) | 3025 |

Figure . Numbers of Difficulties with ADL,
by sex and educational level

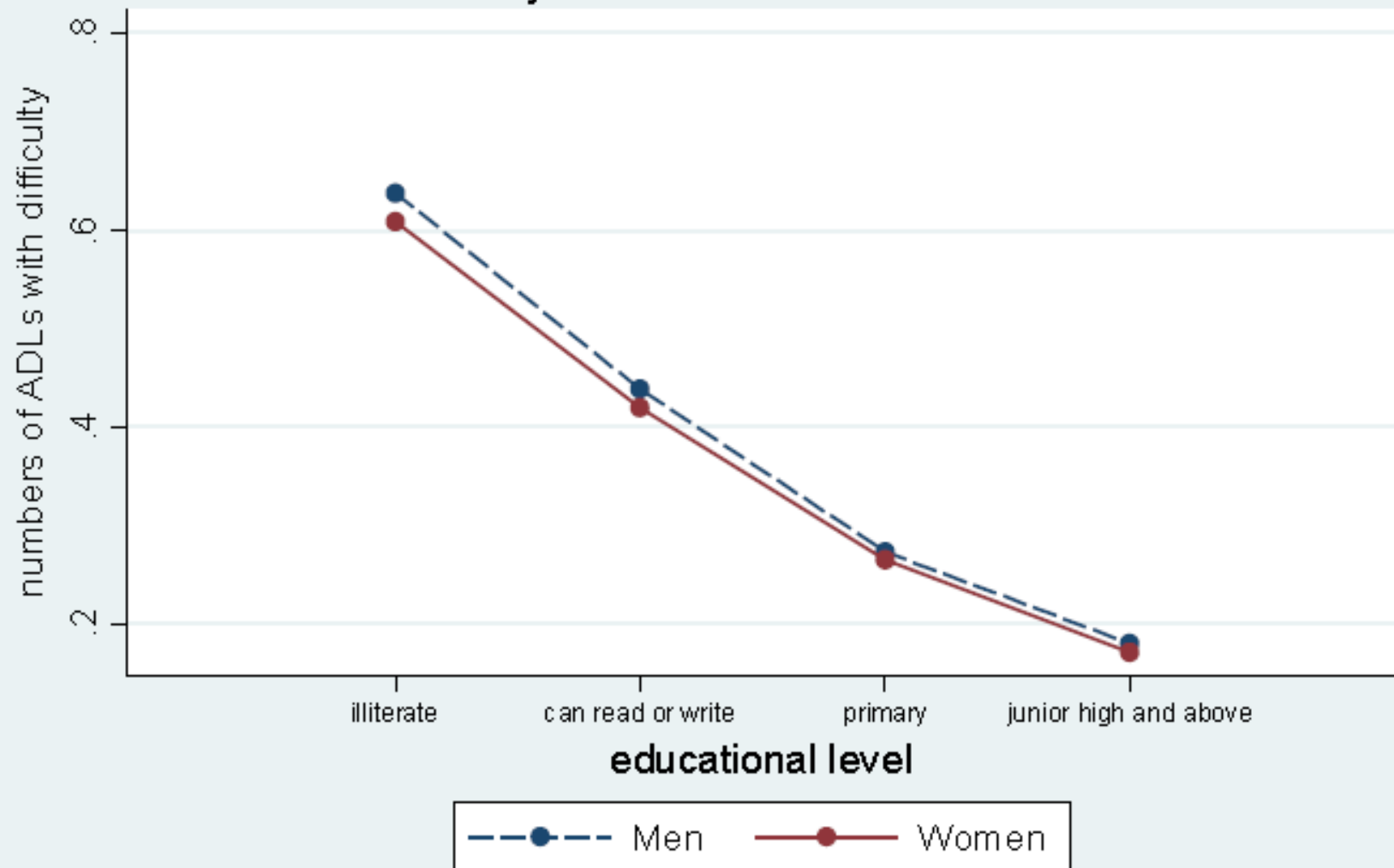


Figure . CES-D 10 against age

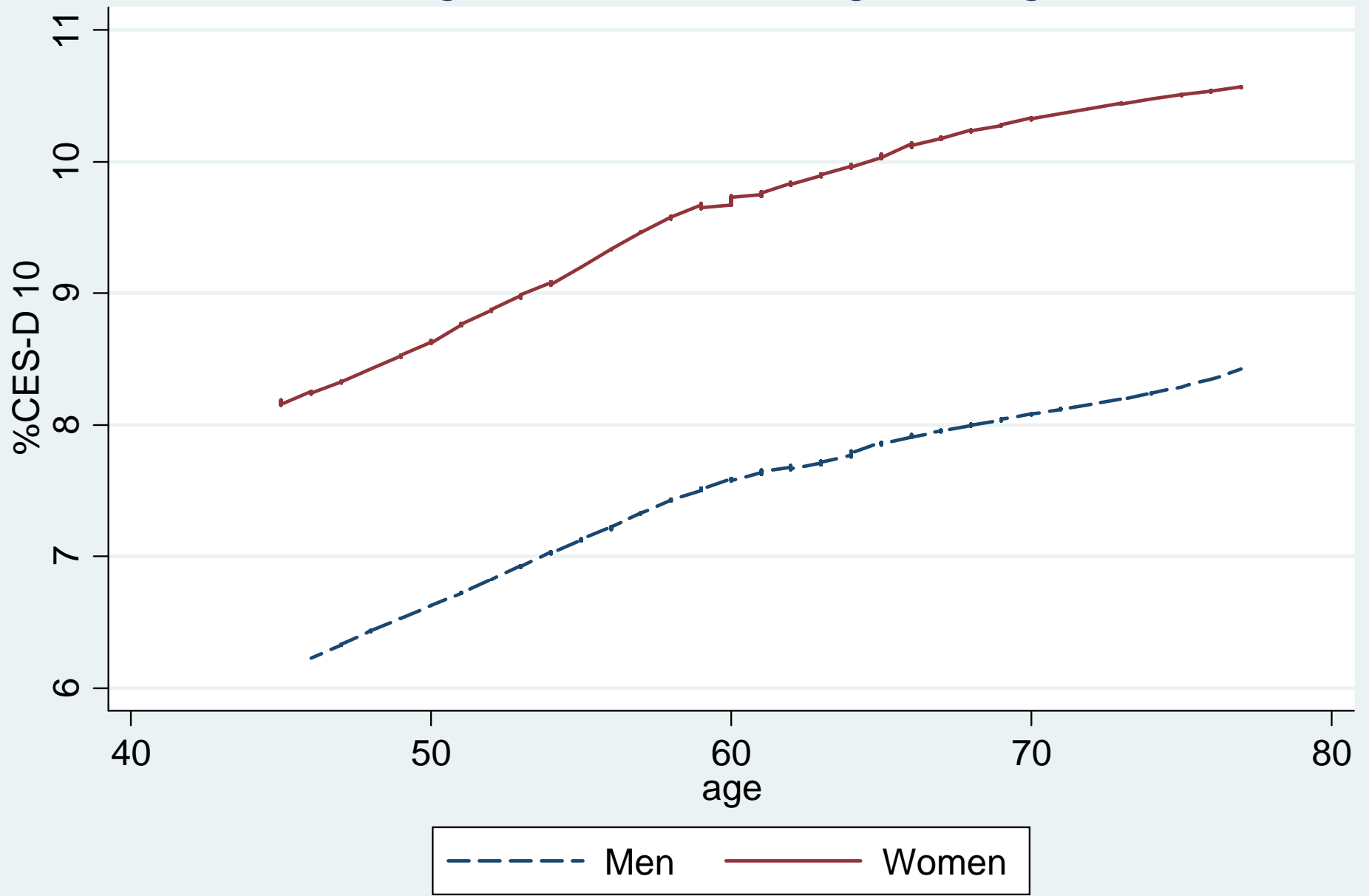


Figure . Number of words recalled against age

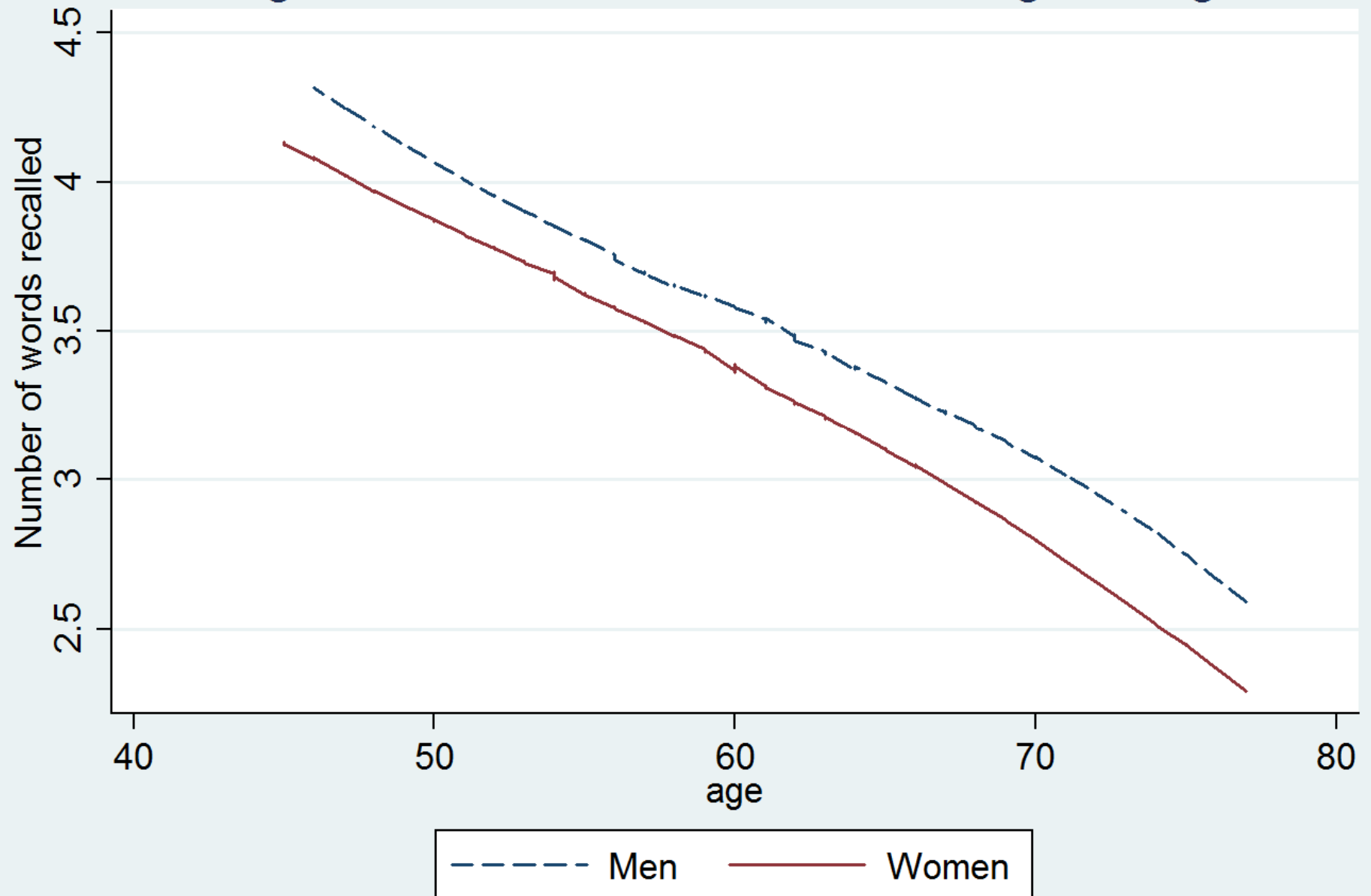
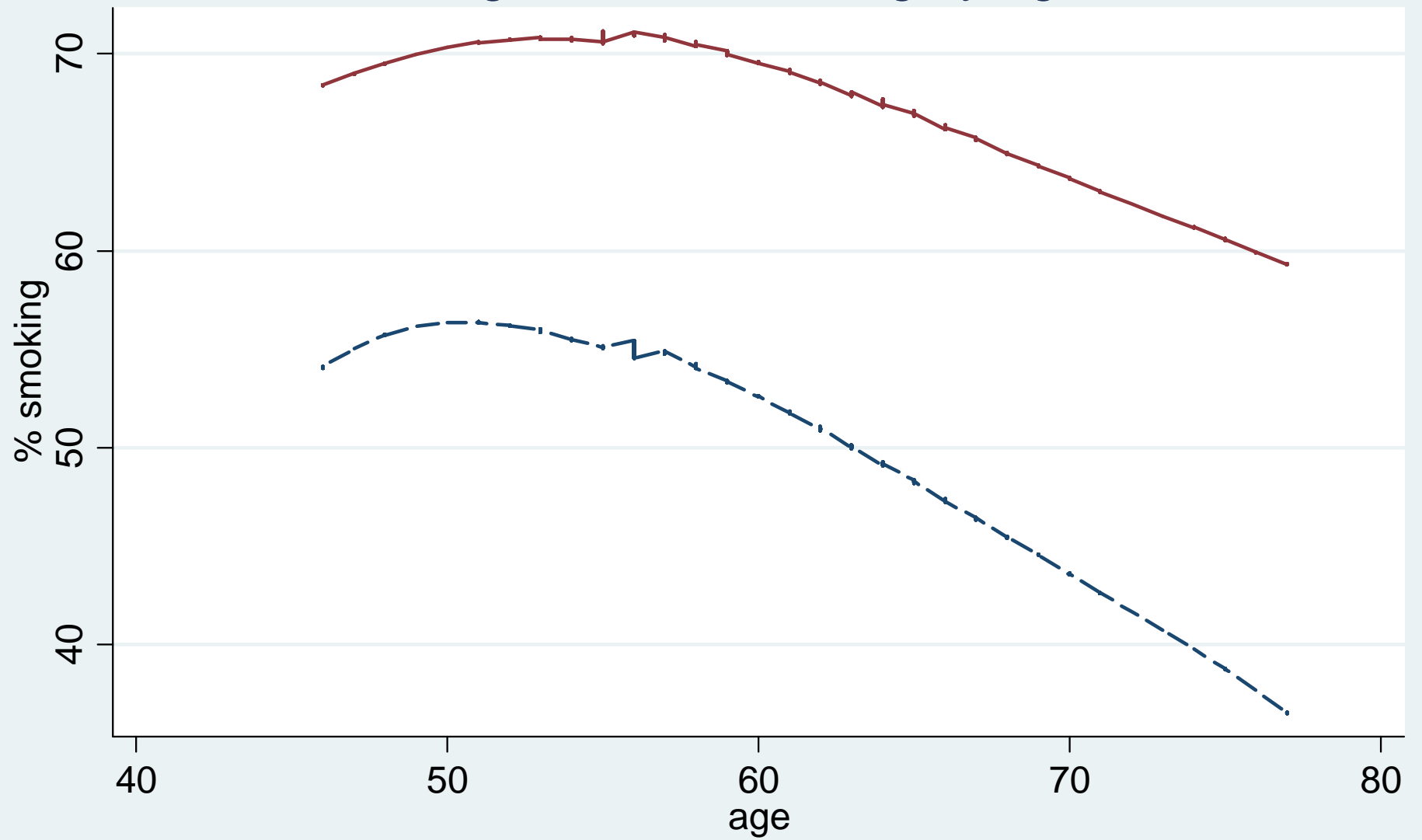
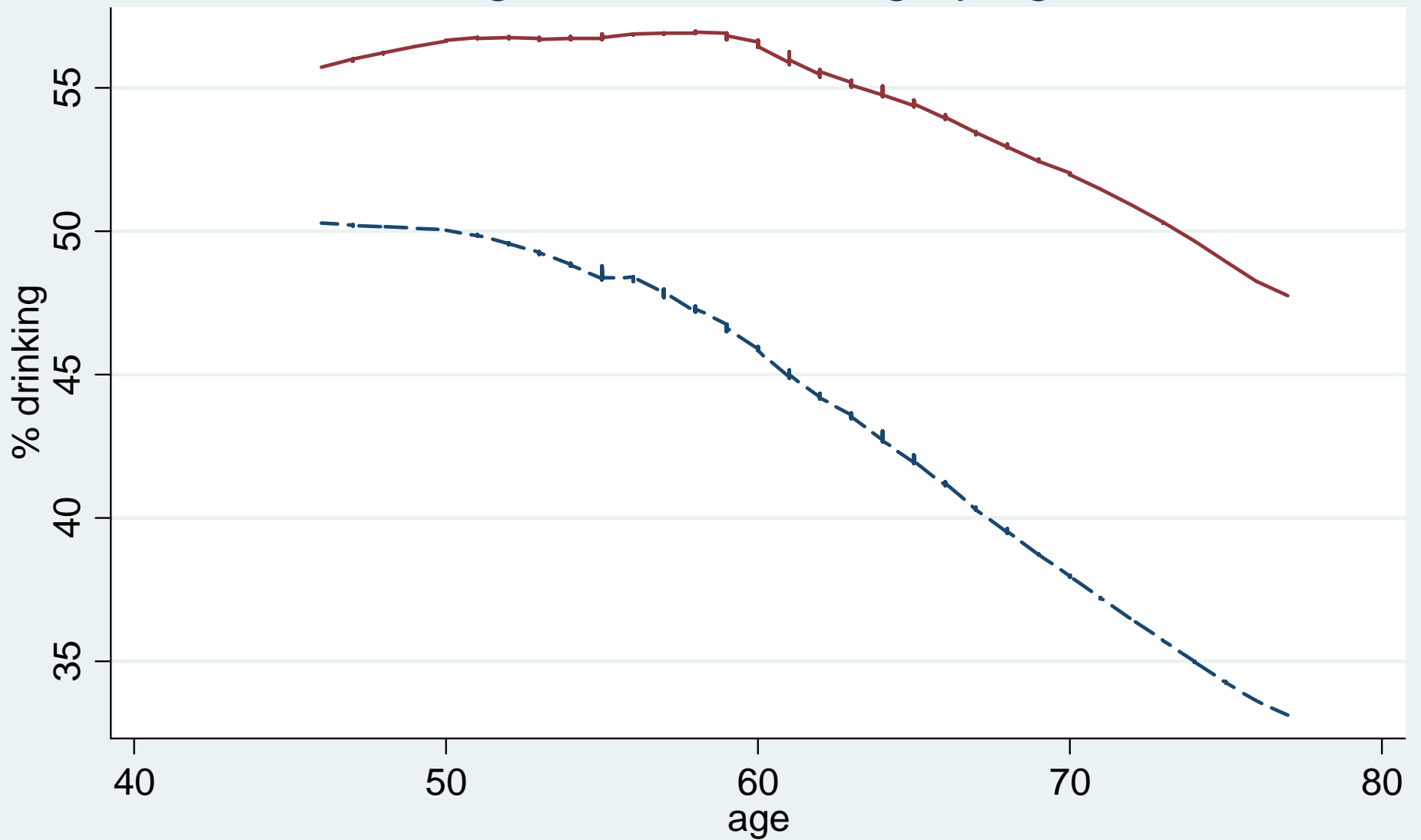


Figure Male smoking by age



--- Current smoker — Ever smoker

Figure Male drinking by age



--- Current drinker — Ever drinker

Figure . Grip Strength(dominant hand) against age

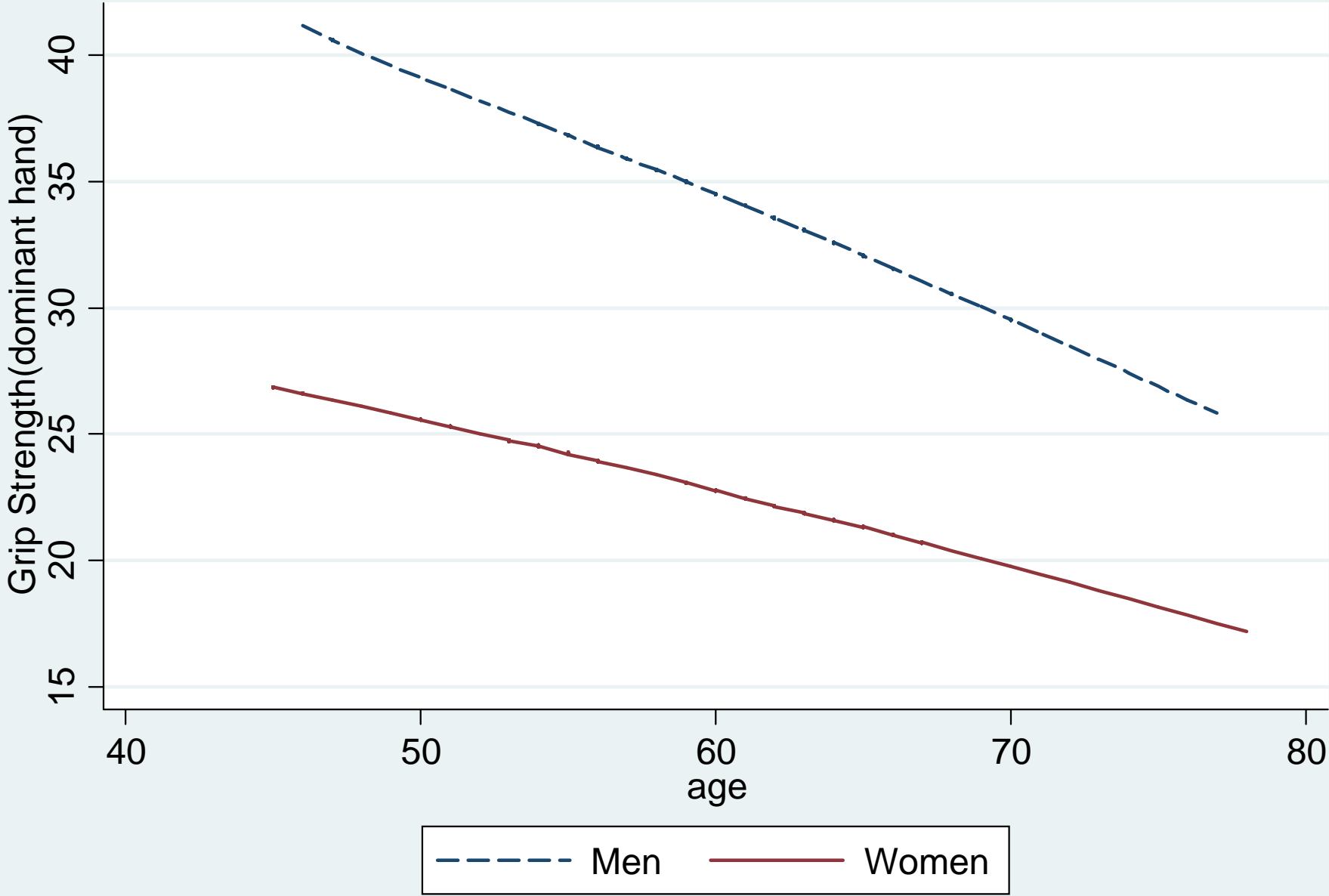


Figure . Lung Capacity against age

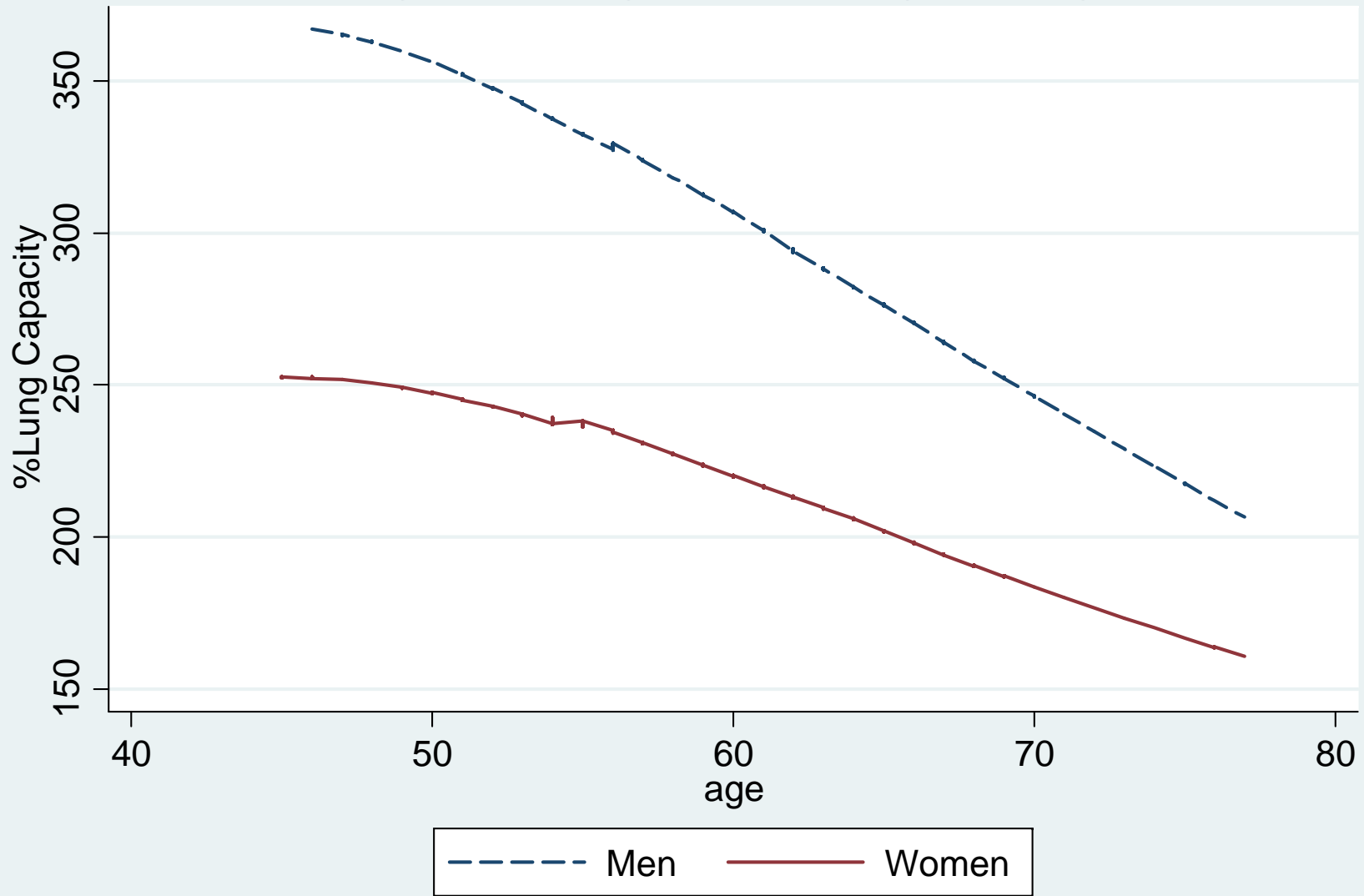


Table 1 Health Insurance Coverage (%pts)

| | | Total | Men | Women | <i>P-value</i> |
|-----------|----------------|-------|-------|-------|----------------|
| Hukou | Total | 93.4 | 93.6 | 93.1 | 0.186 |
| | Urban | 89.4 | 90.5 | 88.2 | 0.035 |
| | Rural | 94.4 | 94.5 | 94.3 | 0.643 |
| | <i>P-value</i> | 0.000 | 0.000 | 0.000 | |
| Residence | Urban | 89.8 | 90.4 | 89.3 | 0.270 |
| | Rural | 94.3 | 94.4 | 94.2 | 0.516 |
| | <i>P-value</i> | 0.000 | 0.000 | 0.000 | |

Notes: P-values are from tests on equality of coverage rates between the two groups.

Table 2 Health Insurance Coverage: Various Types (%pts)

| Types of Health Insurance | Total | Hukou | | Residence | |
|-----------------------------------|-------|-------|-------|-----------|-------|
| | | Urban | Rural | Urban | Rural |
| New cooperative medical insurance | 75.1 | 14.1 | 91.1 | 27.7 | 88.4 |
| Urban employee medical insurance | 9.8 | 44.1 | 0.8 | 36.2 | 2.4 |
| Urban resident medical insurance | 4.1 | 17.0 | 0.8 | 14.9 | 1.1 |
| Others | 6.5 | 17.4 | 3.6 | 14.1 | 4.3 |