北京大学国家发展研究院
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Selected Results on Health from CHARLS

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Prepared for the Workshop on China NCD burden,
Stanford Center at Peking University, Beijing
March 19th, 2015

China Health and Retirement Longitudinal Study
中国健康与养老追踪调查

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
- With rapid economic growth and social changes, 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 HRS-type surveys (e.g. HRS, ELSA, SHARE, KLOSA, JSTAR) to enable cross-country comparative studies
  - combine extensive socioeconomic data with high quality data on physical and psychological health (and cognition)
  - longitudinal studies including pre-retirement cohorts that follow the same individuals over many years
  - well-documented and publicly accessible

Funding Sources

- NIA – BSR
  - R21 – 2008 pilot survey
    - supp for blood sample analysis
  - R01 – national baseline of 2011-12 and 2013 followup
    - Supp for blood sample analysis
- FIC R03 for users training
- Natural Science Foundation of China
  - Data infrastructure project
- World Bank
- Peking University

Co - PIs

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- Gonghuan Yang (China CDC)

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Questionnaire

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

- Community survey

- Policy survey

Biomarkers

- Anthropometric measurements:
  - height, weight, waist circumference, lower right leg length and upper arm length
- Lung capacity, grip strength, timed sit and stand, timed walk, balancing
- Hypertension
- Blood sample as part of a sister survey of CHARLS-to be analyzed for:
  - Complete Blood Count (hemoglobin, etc.)
  - R01 supp: CRP, HbA1c, Lipids (total, LDL and HDL cholesterol, Triglycerides), Cystatin C

Cognition

- Telephone Interview of Cognition Status (TICS):
  - day, day of week, season
  - sequential subtraction of 7s from 100
  - copying a picture (of intersecting pentagons)

CHARLS Timeline

Pilot

2008: 2 provinces; 32 counties/districts
95 villages/communities
2,850 respondents

National Baseline

2011.05-2012.03: national random sampling
150 counties/districts across 28 provinces
17,708 respondents

Pilot Resurvey

2012.07-08: Follow-up survey of pilot sample

National baseline Resurvey

2013.07- Follow-up survey of national baseline sample

Life History survey

2014 Life history of national sample

Data Release

- 2008 Pilot
  - Survey finished in 09/2008
  - Released in 04/2009
- National baseline
  - Survey finished in 03/2012
  - Released on 02/2013
- Pilot resurvey
  - Survey finished in 08/2012
  - Released in 08/2013
- 2013 national follow-up
  - Survey finished in 12/2013
  - Released in 01/2015

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: 10,257; Persons: 17,708
- Field work: May 2011-March 2012

Selected results on health

BMI by Age and Sex

	Men				Women			
	BMI Mean	**%BMI <18.5**	**%BMI >=25.0**	**%BMI >=30.0**	**BMI Mean**	**%BMI <18.5**	**%BMI >=25.0**	**%BMI >=30.0**
45-49	24.2	3.2	35.3	5.4	25.0	3.5	42.2	8.7
50-54	23.5	3.7	29.8	3.4	24.6	3.0	40.6	6.3
55-59	23.1	3.6	24.5	3.0	25.6	5.4	42.2	14.6
60-64	23.2	6.8	28.5	3.6	24.2	6.0	37.5	7.5
65-69	23.2	7.0	30.2	2.5	23.9	8.6	36.3	5.4
70-74	22.6	12.2	24.2	2.3	23.8	10.2	31.2	6.8
75+	21.8	17.3	19.5	1.8	22.5	17.0	25.0	5.2
Total	23.2	6.5	28.1	3.4	24.5	6.6	38.1	8.6

Sample include respondents not younger than 45.

- Undernourishment is less of a problem than over-nutrition

Prevalence of Hypertension

	Rural		Urban		Total	
	Men	**Women**	**Men**	**Women**	**Men**	**Women**
45-49	24.4	24.4	30.8	32.0	30.8	32.0
50-54	31.2	28.1	33.8	37.1	33.8	37.1
55-59	33.5	35.1	45.1	52.7	45.1	52.7
60-64	38.3	44.7	51.9	53.0	51.9	53.0
65-69	43.9	56.2	52.4	61.3	52.4	61.3
70-74	52.0	59.9	55.3	61.2	55.3	61.2
75+	54.3	69.7	64.2	70.4	64.2	70.4
Total	37.2	41.4	45.1	48.9	45.1	48.9

Sample includes only those participating in physical examination.

- **Challenges from chronic diseases like hypertension**
- **More of a problem in urban areas**

Underdiagnosis of Hypertension

	Rural		Urban		Total	
	Men	**Women**	**Men**	**Women**	**Men**	**Women**
45-49	53.7	45.8	45.2	50.7	49.0	48.8
50-54	53.7	38.2	41.5	40.7	47.8	39.6
55-59	42.4	32.8	55.4	46.1	50.0	41.2
60-64	36.9	33.0	29.3	37.1	33.0	35.1
65-69	46.5	36.6	28.3	24.5	37.2	31.0
70-74	43.0	44.7	36.7	38.0	40.0	41.1
75+	46.2	45.8	38.4	43.7	42.1	44.7
Total	45.4	39.3	40.5	41.6	42.8	40.6

Sample includes only those who are hypertensive.

- **Under-diagnosis is serious, more than 40% unaware of their condition**
- **Rural men are the least likely to be diagnosed**

Hypertension Medication or Treatment

	Rural		Urban		Total	
	Men	**Women**	**Men**	**Women**	**Men**	**Women**
45-49	57.9	72.2	62.0	88.2	60.3	81.6
50-54	74.7	75.9	74.5	80.9	74.6	78.7
55-59	70.3	76.3	87.7	87.9	79.3	83.0
60-64	77.4	81.7	80.2	78.0	78.9	79.9
65-69	78.4	79.9	89.8	82.5	85.0	81.3
70-74	70.2	79.2	85.9	89.3	78.2	84.9
75+	83.5	80.6	90.0	89.8	87.1	85.3
Total	73.8	78.4	82.1	85.4	78.4	82.2

Sample includes only those who are diagnosed

- **Treatment is not high among those who are diagnosed**
- **Rural people are less likely to take medication/treatment**

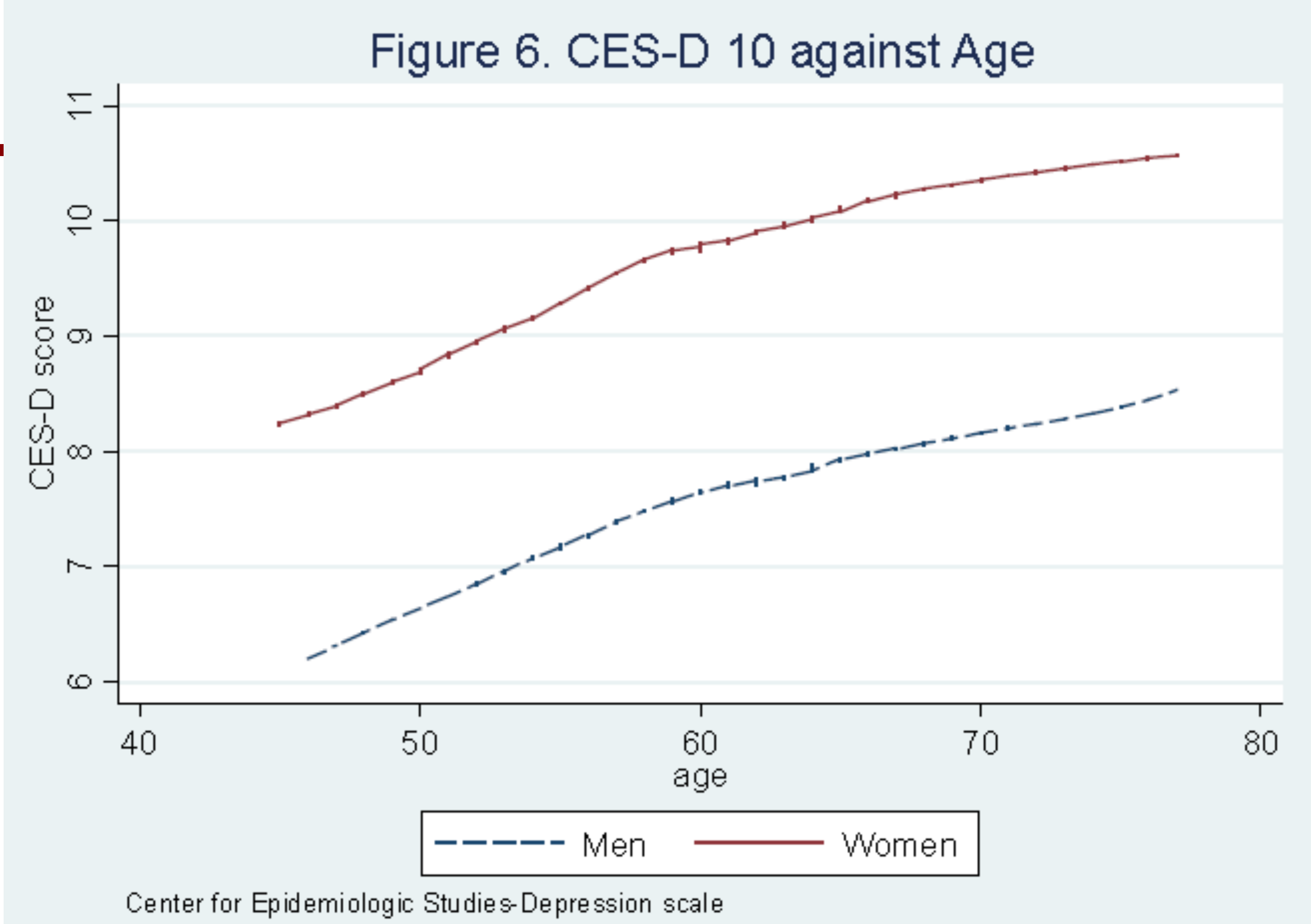


Figure 6. CES-D 10 against Age

Center for Epidemiologic Studies-Depression scale

- **Depression symptom increases with age and is more serious among women in all cohorts**

Female Deficit in Cognitive Function, by Age

Mental Intactness

Cohort	Number	Overall	Female	Male	Difference
45-49	2,715	8.991	8.686	9.382	-0.697***
50-54	1,997	8.647	8.295	9.013	-0.718***
55-59	2,751	8.386	7.802	8.973	-1.171***
60-64	2,250	8.286	7.721	8.814	-1.092***
65-74	2,428	7.77	6.976	8.441	-1.466***
75 +	920	6.505	5.784	7.273	-1.489***
All	13,061	8.283	7.782	8.795	-1.013***

- **Women have lower mental intactness , and the difference declines for the younger cohorts**

Female Deficit in Cognitive Function, by Age

Episodic Memory

Cohort	Number	Overall	Female	Male	Difference
45-49	2740	3.953	3.929	3.987	**-0.059**
50-54	2011	3.548	3.530	3.567	**-0.037**
55-59	2756	3.355	3.213	3.497	**-0.284*****
60-64	2267	3.223	3.091	3.349	**-0.257*****
65-74	2427	2.83	2.64	2.993	**-0.353*****
75 +	930	1.795	1.58	2.039	**-0.459*****
All	13,131	3.275	3.185	3.369	**-0.184*****

- **Similar pattern for episodic memory, with the gender difference down to zero for the youngest two groups**

Possibility of Reaching 75, by Age and Sex

	Men					Women				
	Almost impossible	Not very likely	Maybe	Very likely	Almost certain	Almost impossible	Not very likely	Maybe	Very likely	Almost certain
45-49	4.9	10.1	24.9	14.0	19.5	4.0	13.1	28.6	16.5	14.0
50-54	3.7	11.0	31.7	15.1	18.1	4.7	14.5	27.9	13.5	15.8
55-59	3.9	9.5	29.7	15.2	19.8	4.4	15.6	31.3	12.6	14.5
60-64	4.6	12.8	30.5	16.0	18.2	5.4	13.7	30.8	13.6	14.0
Total	4.3	10.7	28.9	15.0	19.0	4.6	14.2	29.7	14.2	14.5

Weighted at individual level with household and response adjustment

Sample include respondents aged between 45 and 65.

- **Women are more pessimistic regarding living up to age 75**

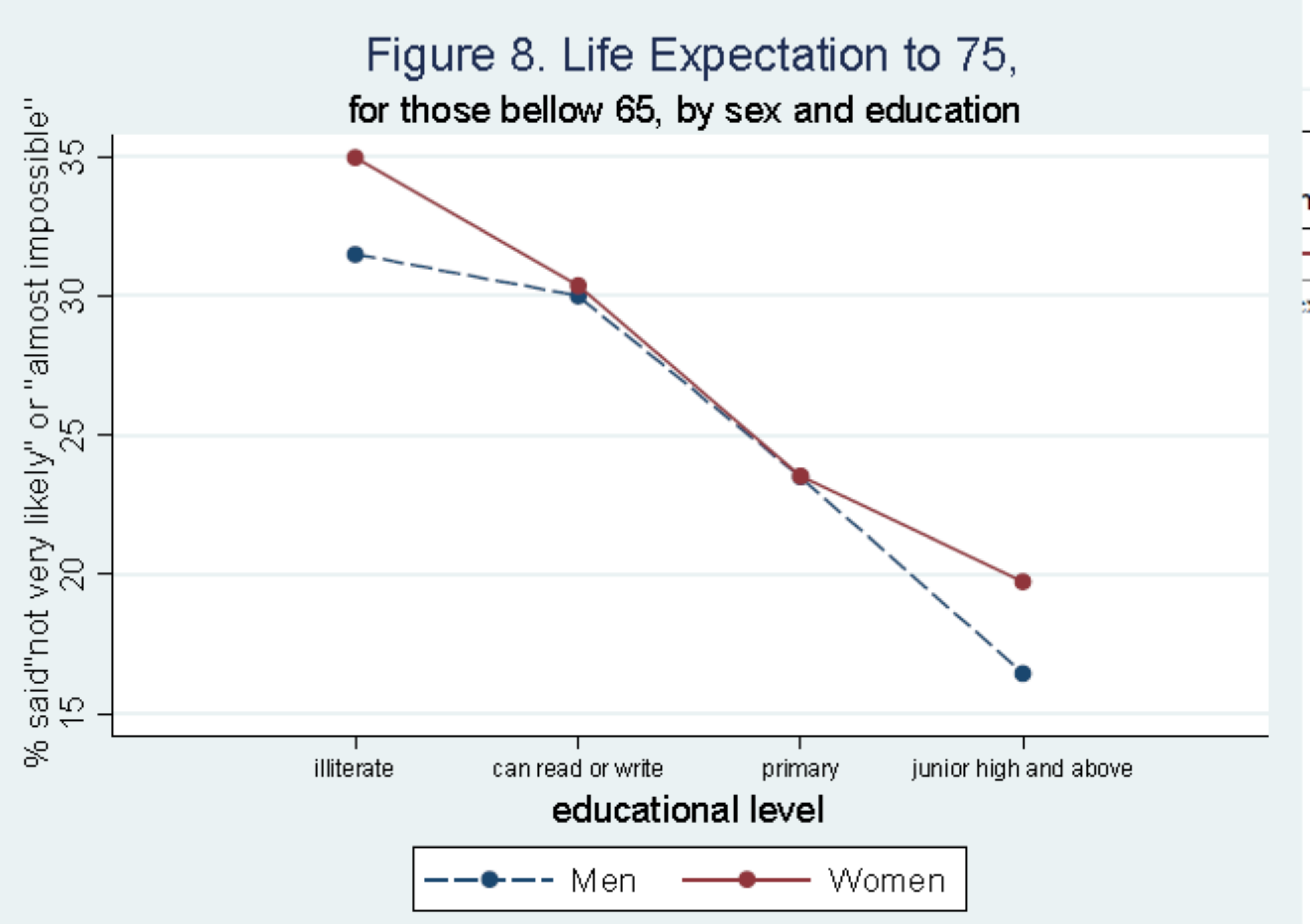


Figure 8. Life Expectation to 75,

for those bellow 65, by sex and education

- **Very strong education gradient**

Any ADL/IADLs Difficulty

	Rural		Urban		Total	
	Men	**Women**	**Men**	**Women**	**Men**	**Women**
45-49	13.6	22.1	7.6	9.2	10.5	15.3
50-54	16.7	27.5	9.9	13.7	13.4	20.4
55-59	24.0	34.4	14.3	18.0	19.2	26.0
60-64	27.9	42.2	17.1	22.7	22.9	32.9
65-69	33.7	48.5	21.9	34.1	28.6	41.8
70-74	42.7	55.0	25.9	29.6	34.5	41.3
75+	57.4	70.2	47.6	57.7	52.4	64.2
Total	27.5	39.2	17.8	22.6	22.8	30.8

Weighted at individual level with household and response adjustment

Sample include respondents not younger than 45.

- **ADL/IADL difficulty is more serious for women and for the rural**
  - **For rural women 75 and older, the fraction reaches 70%**

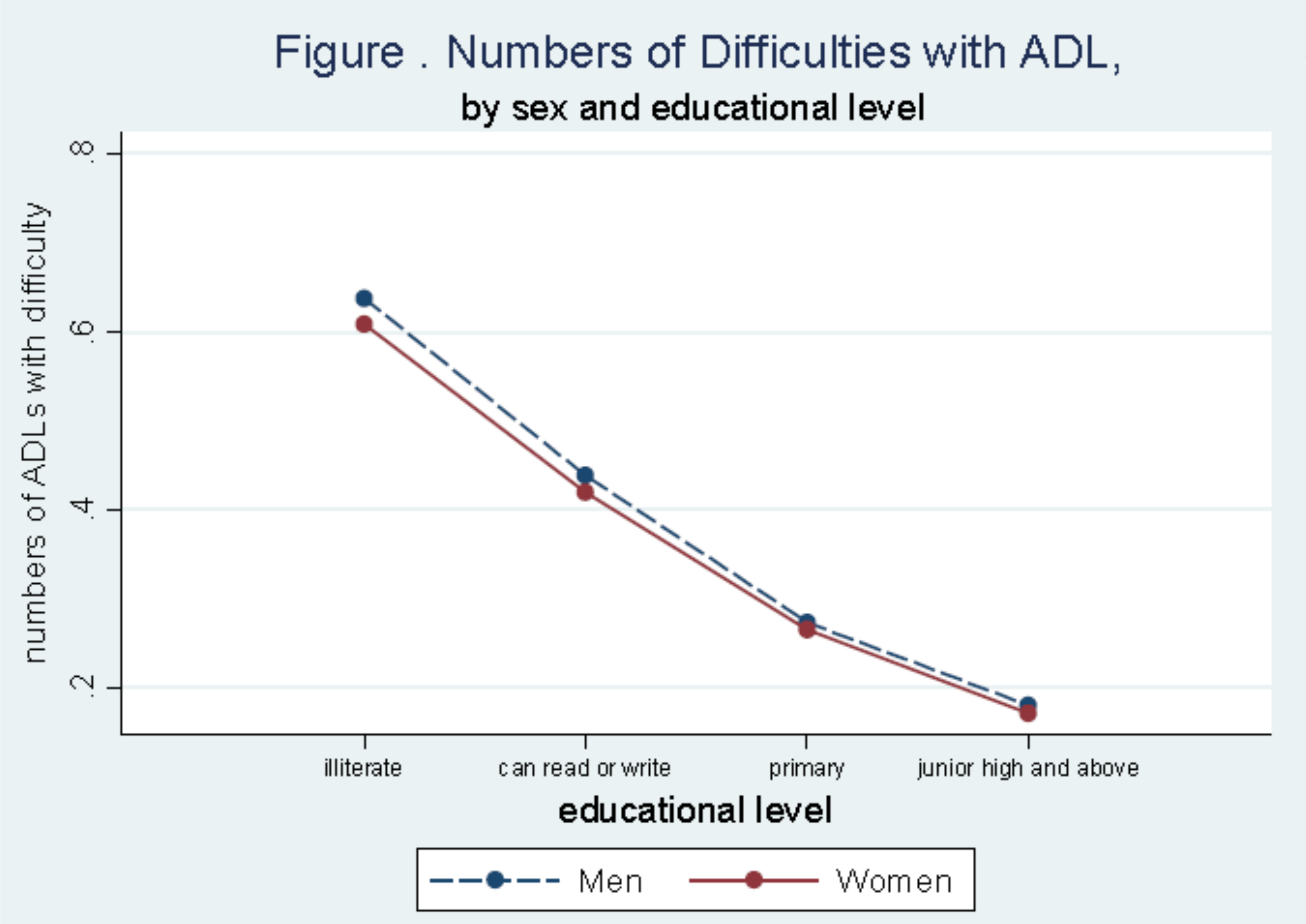


Figure . Numbers of Difficulties with ADL,

by sex and educational level

- **Also very sharp educational gradient for both genders**
- **Given education, women are slightly better in this measure**

Any Body Pain, by Age and Sex

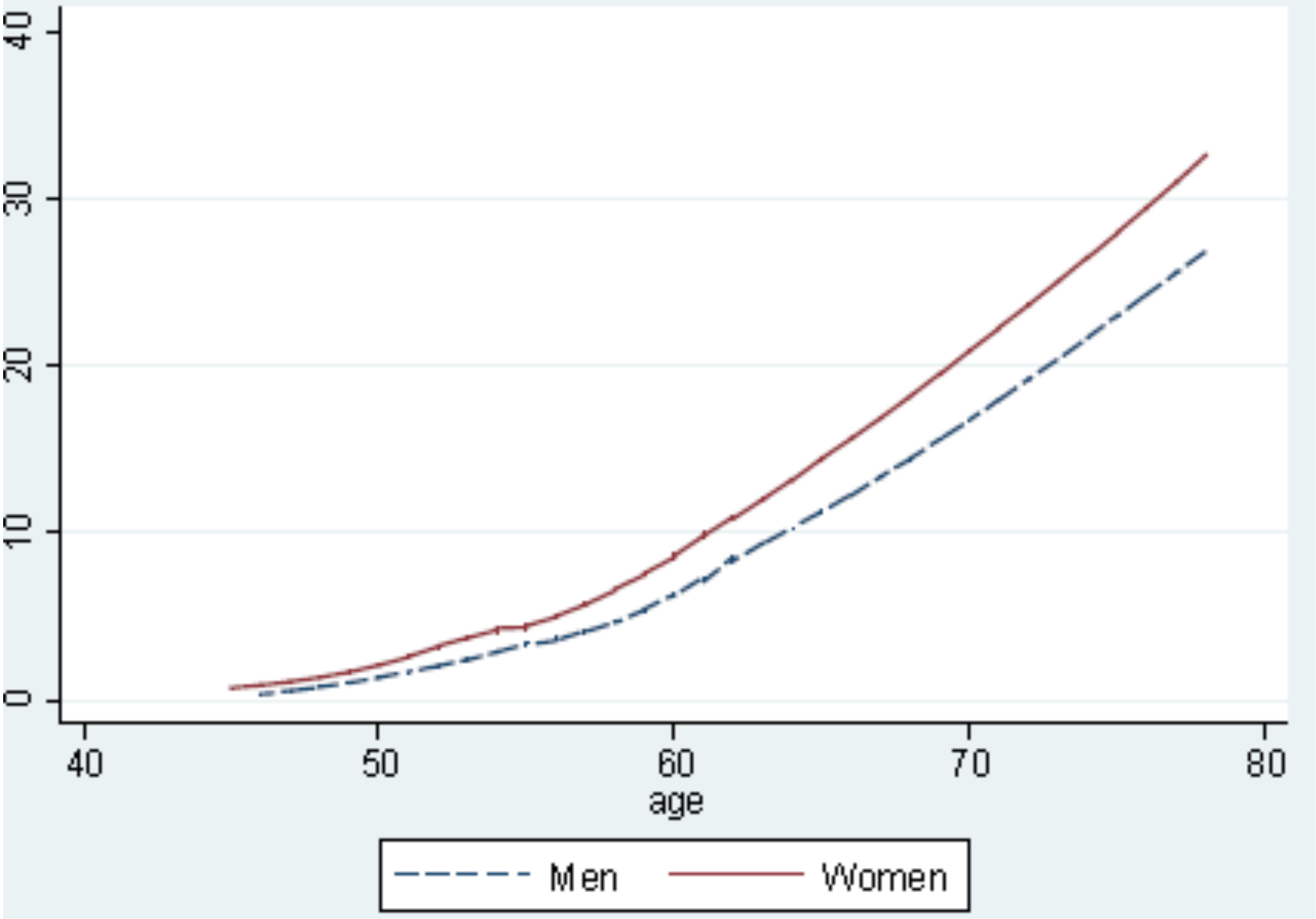
	Rural		Urban		Total	
	Men	**Women**	**Men**	**Women**	**Men**	**Women**
45-49	22.9	35.4	14.7	29.6	18.6	32.3
50-54	28.3	41.2	18.9	33.3	23.7	37.1
55-59	31.3	42.4	20.5	27.1	26.0	34.5
60-64	31.7	46.9	22.6	31.6	27.5	39.6
65-69	33.6	49.2	18.2	36.4	27.0	43.3
70-74	32.3	47.7	18.8	28.0	25.7	37.1
75+	32.4	42.5	27.2	31.7	29.7	37.3
Total	29.8	42.5	19.7	30.6	24.9	36.5

Weighted at individual level with household and response adjustment

Sample include respondents not younger than 45.

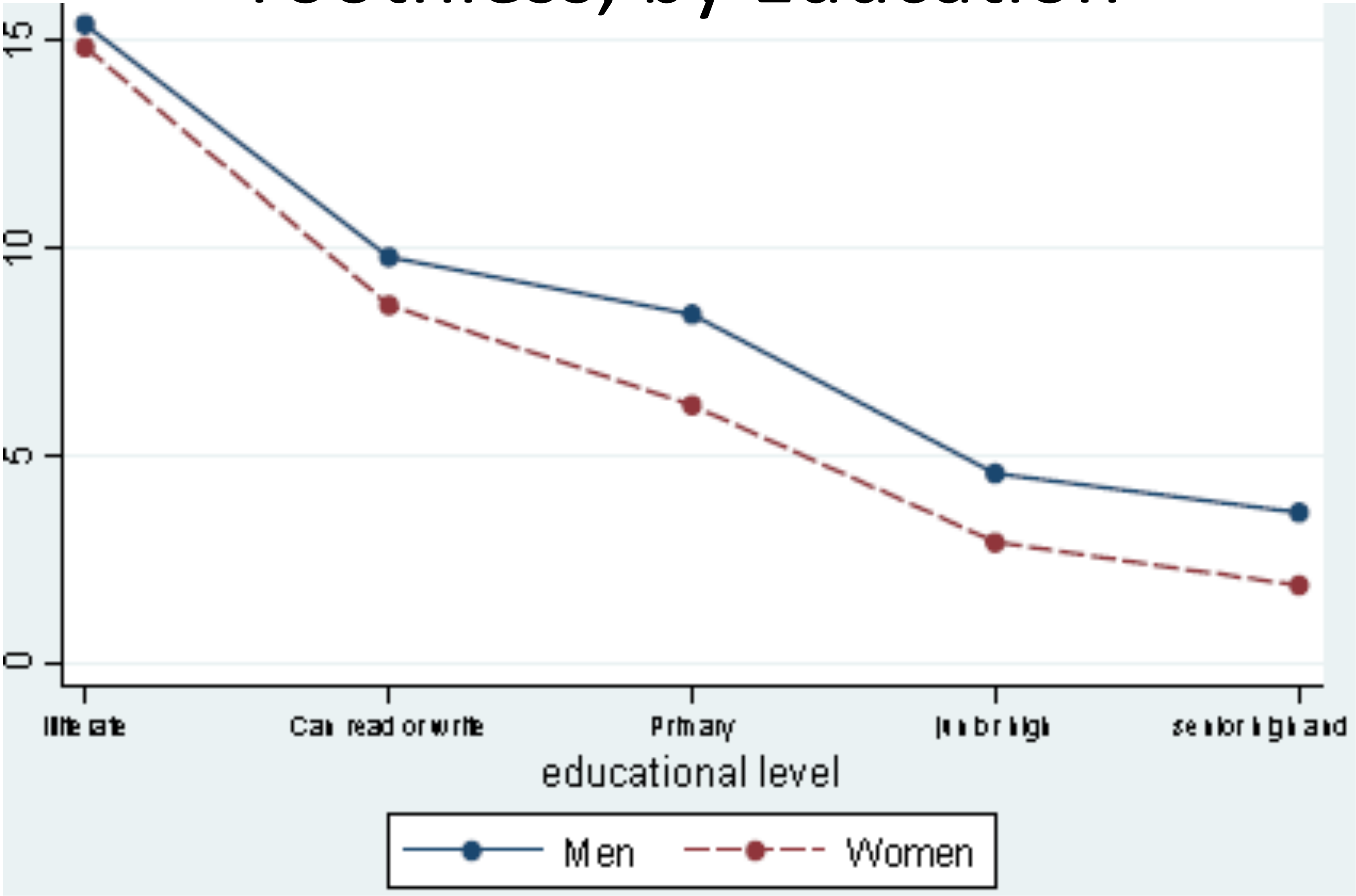
- **Large fraction suffer from body pain**
- **Again more serious for women and for rural people**
  - **The fraction of any body pain for the youngest rural women is much higher than that of the oldest urban men**

Toothless, by Age



- **People lose all of their teeth very quickly as they age**

Toothless, by Education



- **Again strong educational gradient for both genders**
- **Given education, women are better in this measure**

Health insurance and health care cost

Near Universal Insurance Coverage

Figure 4.3. Health Insurance Coverage Rates by Age Group and Hukou Type

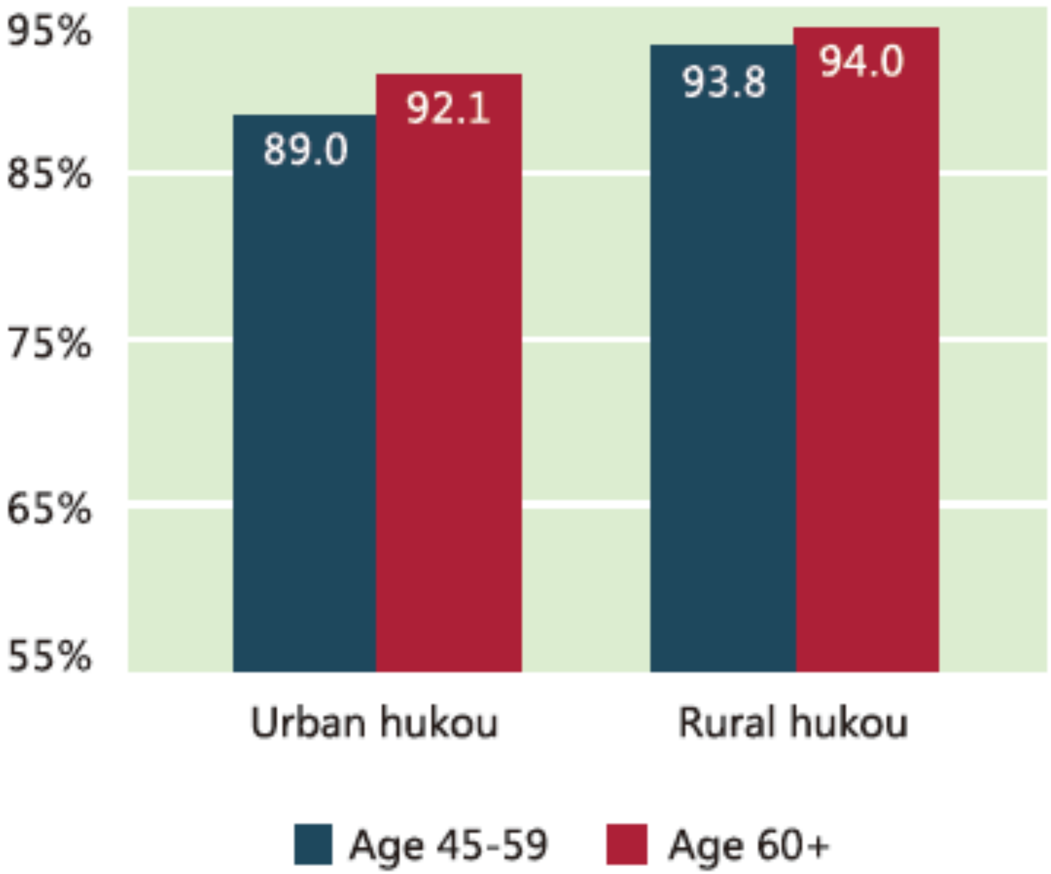
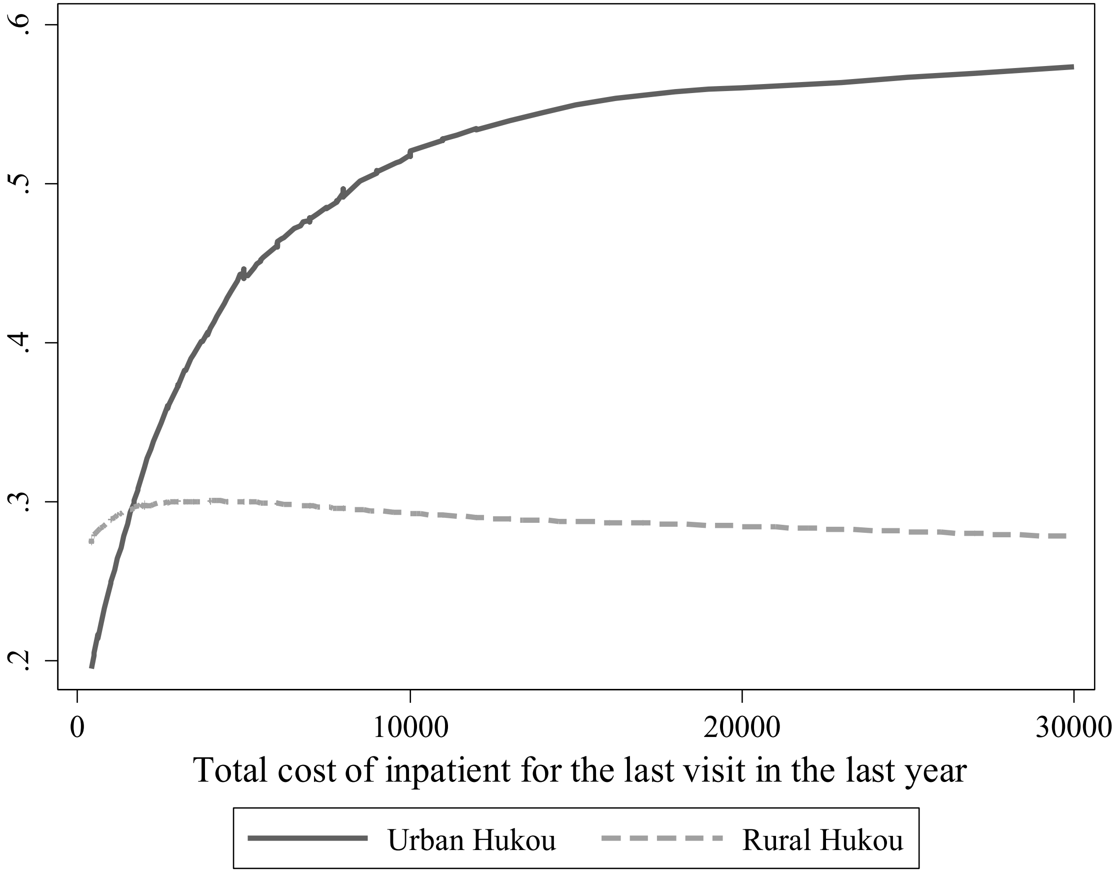


Figure 1 Reimbursement Rates from Any Insurance for Inpatients by Total Cost



- **For urban people, the reimbursement rate increases with inpatient care cost and become stable at relatively higher level**
- **For rural people, the reimbursement rate remains low even at very high inpatient cost**

Segmented Programs

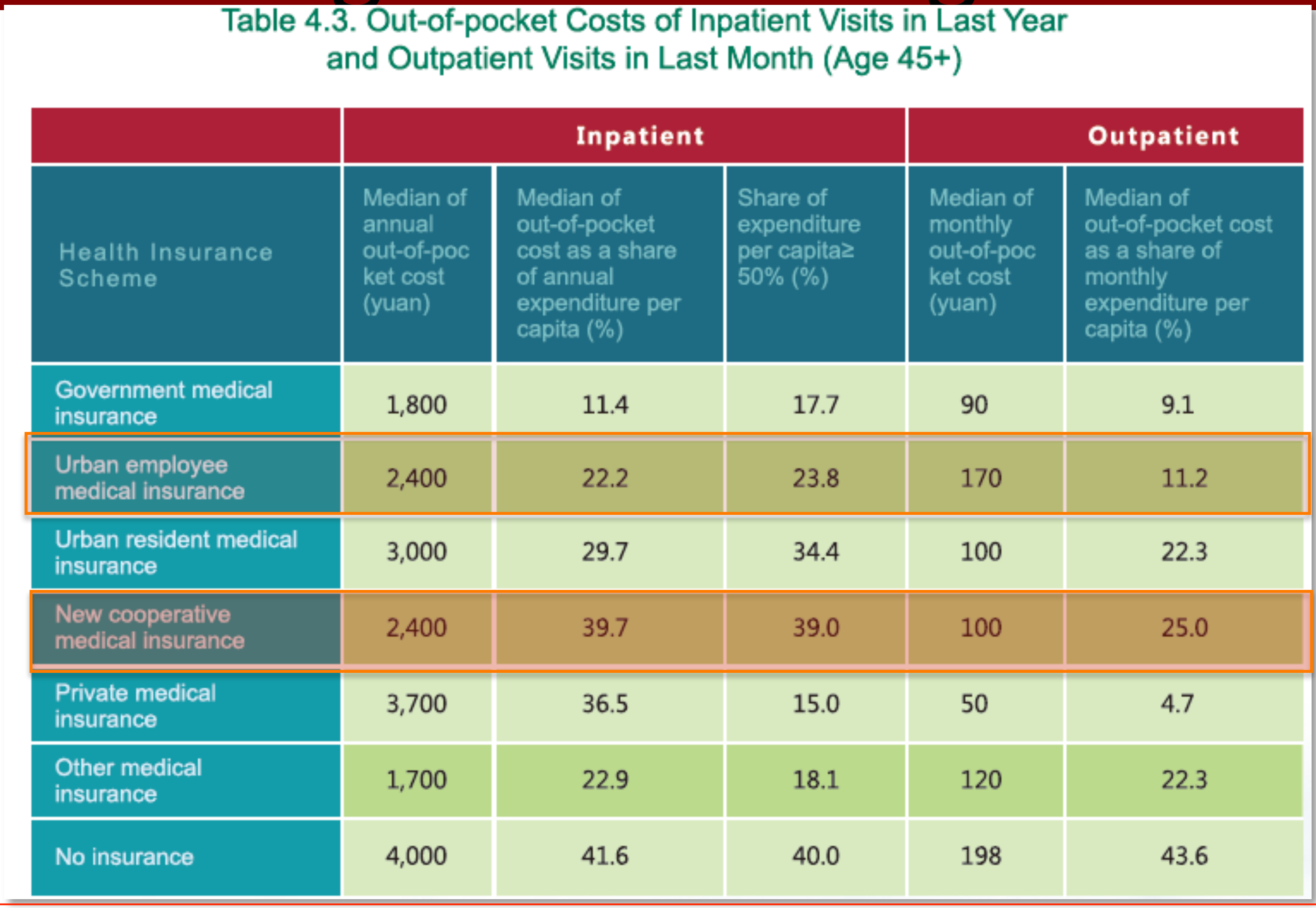


Table 4.3. Out-of-pocket Costs of Inpatient Visits in Last Year and Outpatient Visits in Last Month (Age 45+)

	Inpatient			Outpatient	
Health Insurance Scheme	Median of annual out-of-pocket cost (yuan)	Median of out-of-pocket cost as a share of annual expenditure per capita (%)	Share of expenditure per capita≥ 50% (%)	Median of monthly out-of-pocket cost (yuan)	Median of out-of-pocket cost as a share of monthly expenditure per capita (%)
Government medical insurance	1,800	11.4	17.7	90	9.1
Urban employee medical insurance	2,400	22.2	23.8	170	11.2
Urban resident medical insurance	3,000	29.7	34.4	100	22.3
New cooperative medical insurance	2,400	39.7	39.0	100	25.0
Private medical insurance	3,700	36.5	15.0	50	4.7
Other medical insurance	1,700	22.9	18.1	120	22.3
No insurance	4,000	41.6	40.0	198	43.6

- **People with rural insurance have similar or lower OCP, but it takes up much higher fraction of their total PCE, much larger fraction spent half of PCE on inpatient care**

Some Patterns Found

- Challenges from chronic diseases
- Women have poorer health in almost all categories of health, physical, mental and cognition
- Rural people generally have poorer health
- Strong SES gradients are found in many dimensions of health
- Insurance coverage is near universal, but medical burden is still high, especially for the rural

Thank you ! http:// charls.ccer.edu.cn/en

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