Effects of Care Arrangement on Community-dwelling Chinese Older Adults' age of institutionalization

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Background

Definitions of some key words in the study

- Institutionalization
  - Older adults reside in or being placed in a Long-term care (LTC) home established as an institution, custom, or common practice

- Care arrangement
  - Who take primary responsibility of caring for community-dwelling older adults
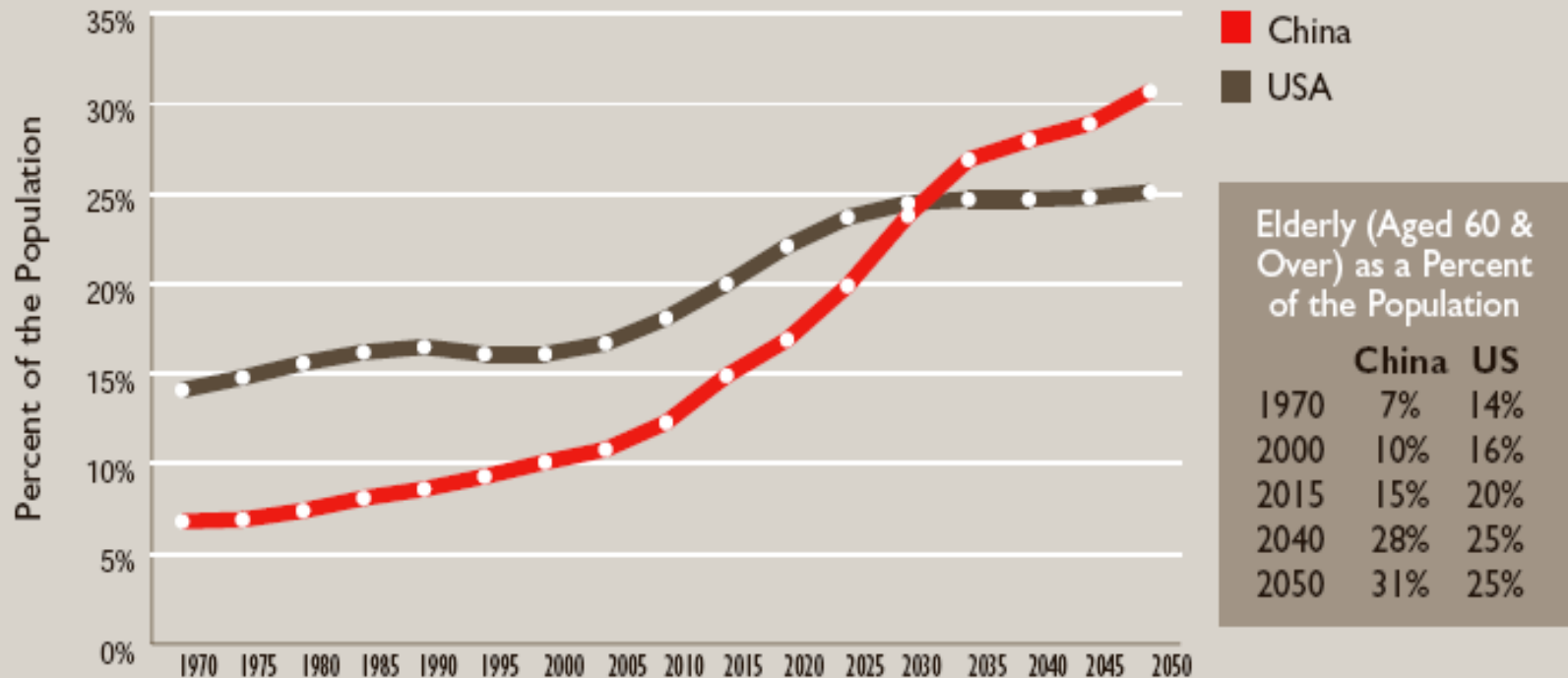
Background

At the end of 2014

- 222 million older adults (aged 60+)

- 24 million "oldest old" (aged 80+)

- 100 million-with one or comorbid chronic diseases

- 37.5 million-with functional disabilities

China Aging Development report (2016) China National Working Commission on Aging (CNWCA)

Background

Elderly (Aged 60 & Over), as a Percent of the Population in China and the United States, History and UN Constant Fertility Scenario, 1970-2050
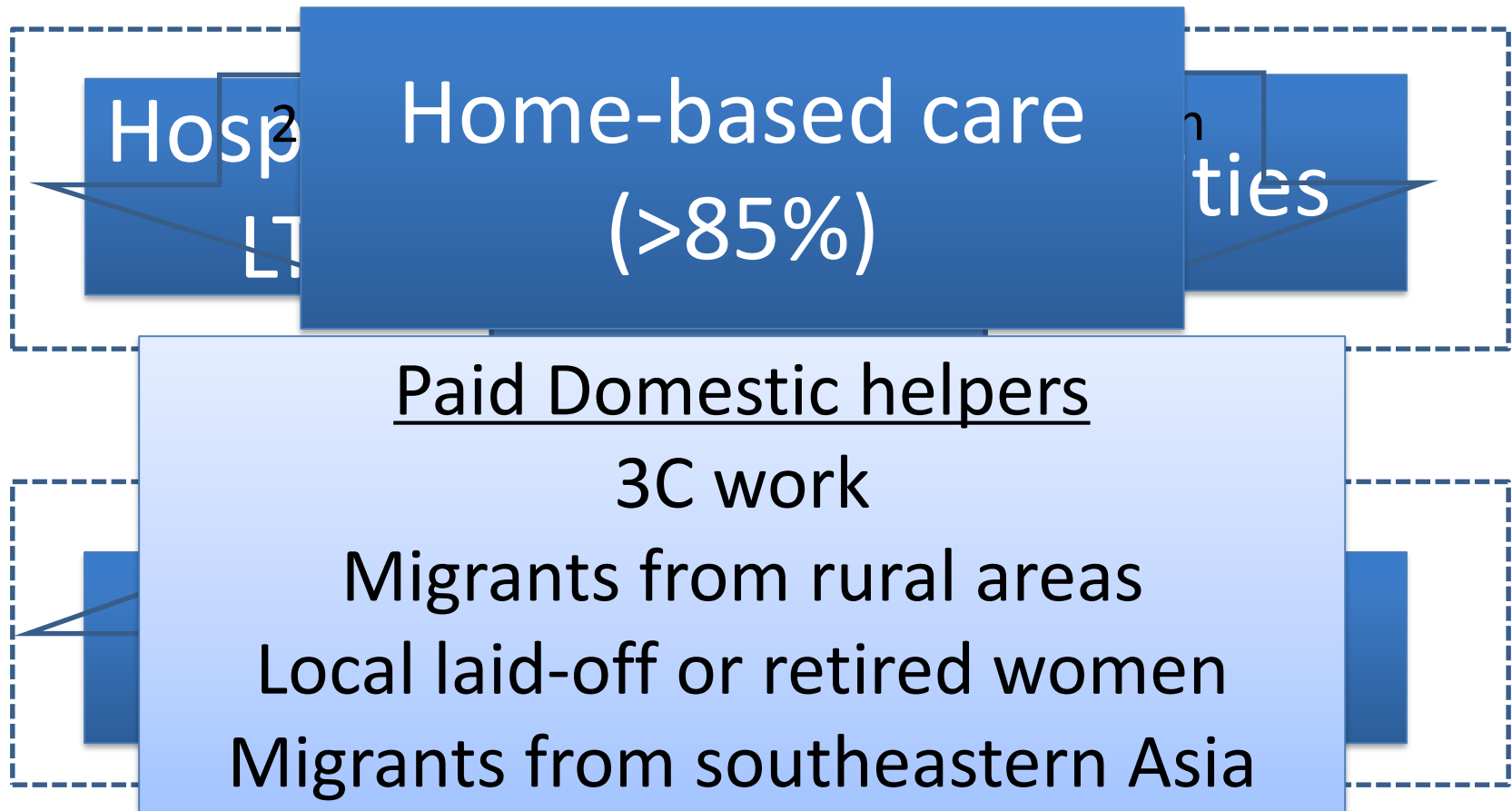
	China	US
1970	7%	14%
2000	10%	16%
2015	15%	20%
2040	28%	25%
2050	31%	25%

Elderly (Aged 60 & Over) as a Percent of the Population

Source: UN (2003)

Figure 1

Background

Long-term care resources in China

Hosp...2...

Home-based care (>85%)

...ties

LT...

Paid Domestic helpers
3C work
Migrants from rural areas
Local laid-off or retired women
Migrants from southeastern Asia

Background

Rapid po...

Socioec...

- Institutionalization rate 0.86% - 1.51% (2005-2012)
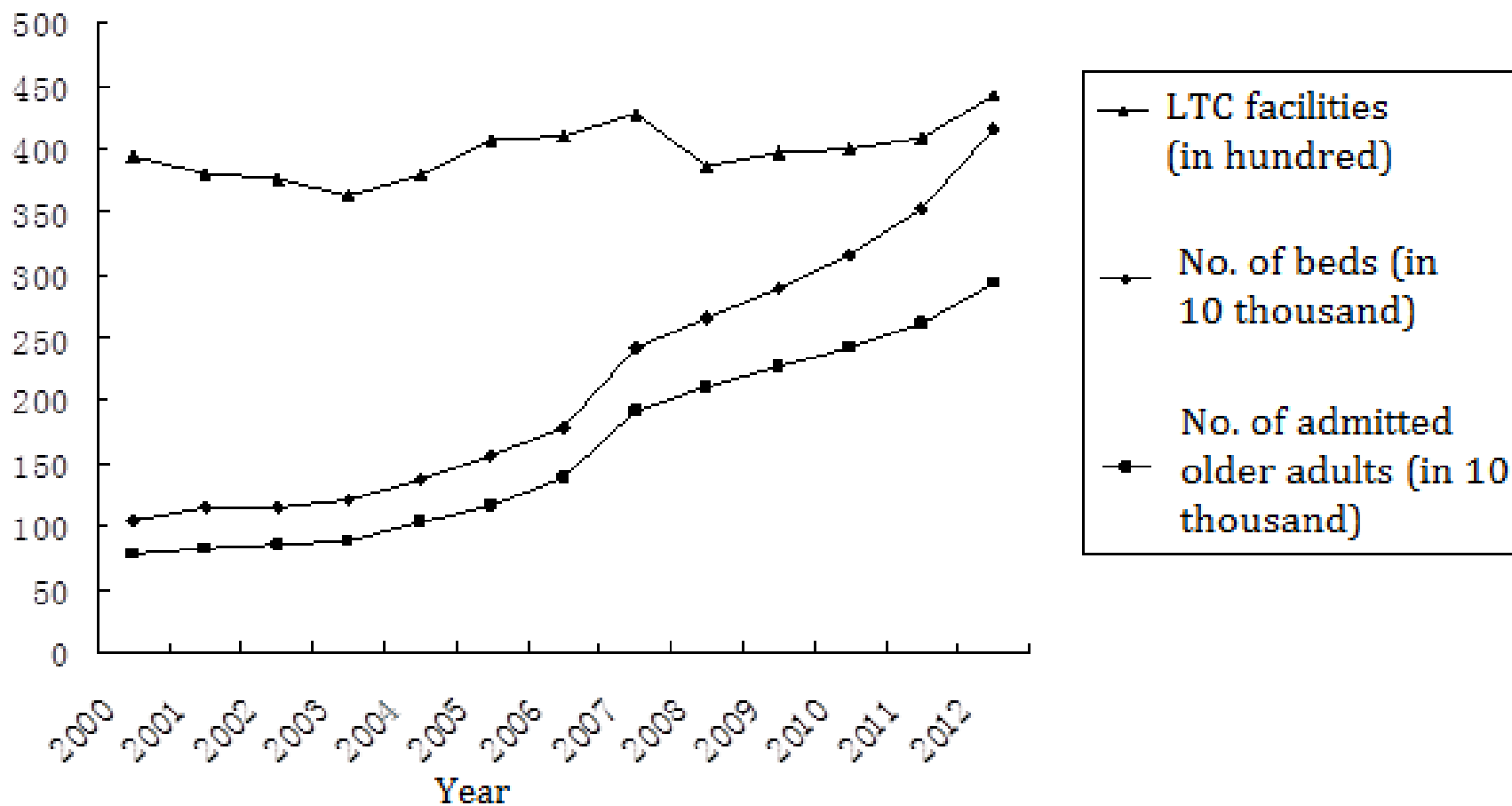- Number of older residents 1.25 -2.93 million (2005-2012) (Wu 2014)

Population mobility
Family structure
Living arrangement
Female employment rate
Perception of filial piety
Government investment

Figure 2. Development of Long-term Care Facilities (2000-2012)

Legend:
- LTC facilities (in hundred)
- No. of beds (in 10 thousand)
- No. of admitted older adults (in 10 thousand)

Source: China Civil Affairs' Statistical Yearbook. Peng & Wu (2014). Journal of Global Health.

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Background

- Long-term care facilities in China

Background

- Early institutionalization
  - limited formal LTC resources
  - A burden on the country and taxpayers
- Understand risk factors
- The effect of care arrangements on their age of institutionalization have been overlooked

Objective

- To examine care arrangement of community-dwelling older adults in China

- To explore longitudinal effects of care arrangements on community-dwelling Chinese older adults' age to move into long-term care facilities (institutionalization)

Hypothesis

We hypothesized that different types of care arrangements will have significant impacts on community-dwelling older adults' age of institutionalization.

Methods

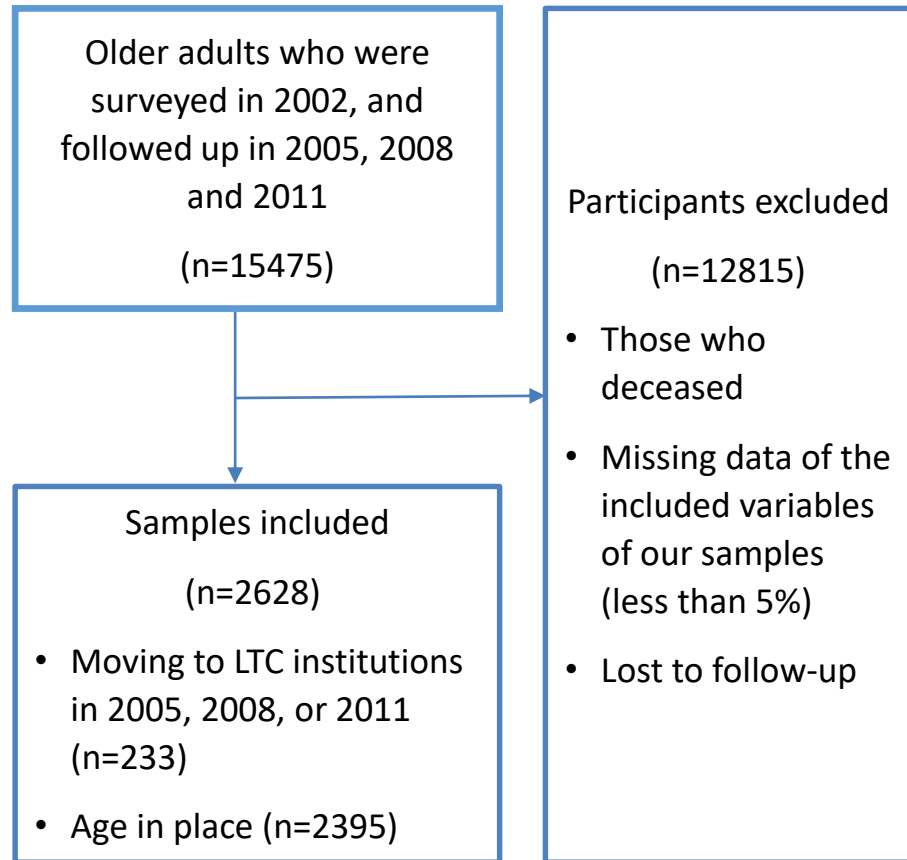Secondary data analysis using a true longitudinal national dataset

Methods

- Data Source
  - Chinese Longitudinal Healthy Longevity Survey (CLHLS)*
  - Sampling and data collection*
    - Study sample was randomly selected from half of the counties and cities in the 22 provinces of China, representing 85% of the total population of the country.
    - Data were collected through face-to-face interviews using internationally-standardized questionnaires adapted to Chinese cultural and social context

*Sponsored by US National Institute on Aging, the United Nations Fund for Population Activities, and the China National Foundation for Social Sciences. Peking University (Beijing, China) and Duke University

*Goodkind, 2009; Gu & Dupre, 2008; Zeng & Gu, 2008

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Methods

- Study sample

Older adults who were surveyed in 2002, and followed up in 2005, 2008 and 2011

(n=15475)

Participants excluded

(n=12815)

- Those who deceased

- Missing data of the included variables of our samples (less than 5%)

- Lost to follow-up

Samples included

(n=2628)

- Moving to LTC institutions in 2005, 2008, or 2011 (n=233)

- Age in place (n=2395)

Methods

- Outcome variable- Institutionalization
  - Correspondent questions is "current co-residence"
  - Defined as residing in a LTC facility at follow-up
  - A fixed event that is unlikely to change once happened
  - Time to event

Event	Time
Event=0 (community-dwelling)	Age in 2011
Event-1)reside in LTC facilities	Age at institutionalization

Methods

- Independent variable

  Different care arrangements

  – Correspondent question is "Who primarily takes care of you?"

  – 8 Options are: spouses; son and daughter-in-law'; son and daughter; grandchildren and their spouses; other relatives; friends; and nobody

Methods

- Covariates
  - Gender
  - Place of current residence (city, town, and rural)
  - Self-rated health
  - Ability of performing activities of daily living (need help or not)
  - Financial independence

Methods

- Data Analysis (SAS 9.3)
  - Univariate statistics: to examine care arrangements, current residence and other covariates.
  - Multivariate Cox Regression Model: to investigate longitudinal effects of caregiving arrangements on community-dwelling older adults' age to move into LTC facilities.
  - Significance level was set a 0.01
  - Hazard ratio
  - Adjusted Kaplan-Meier Survival Curves

Table 1. Characteristics of the study samples (n %).

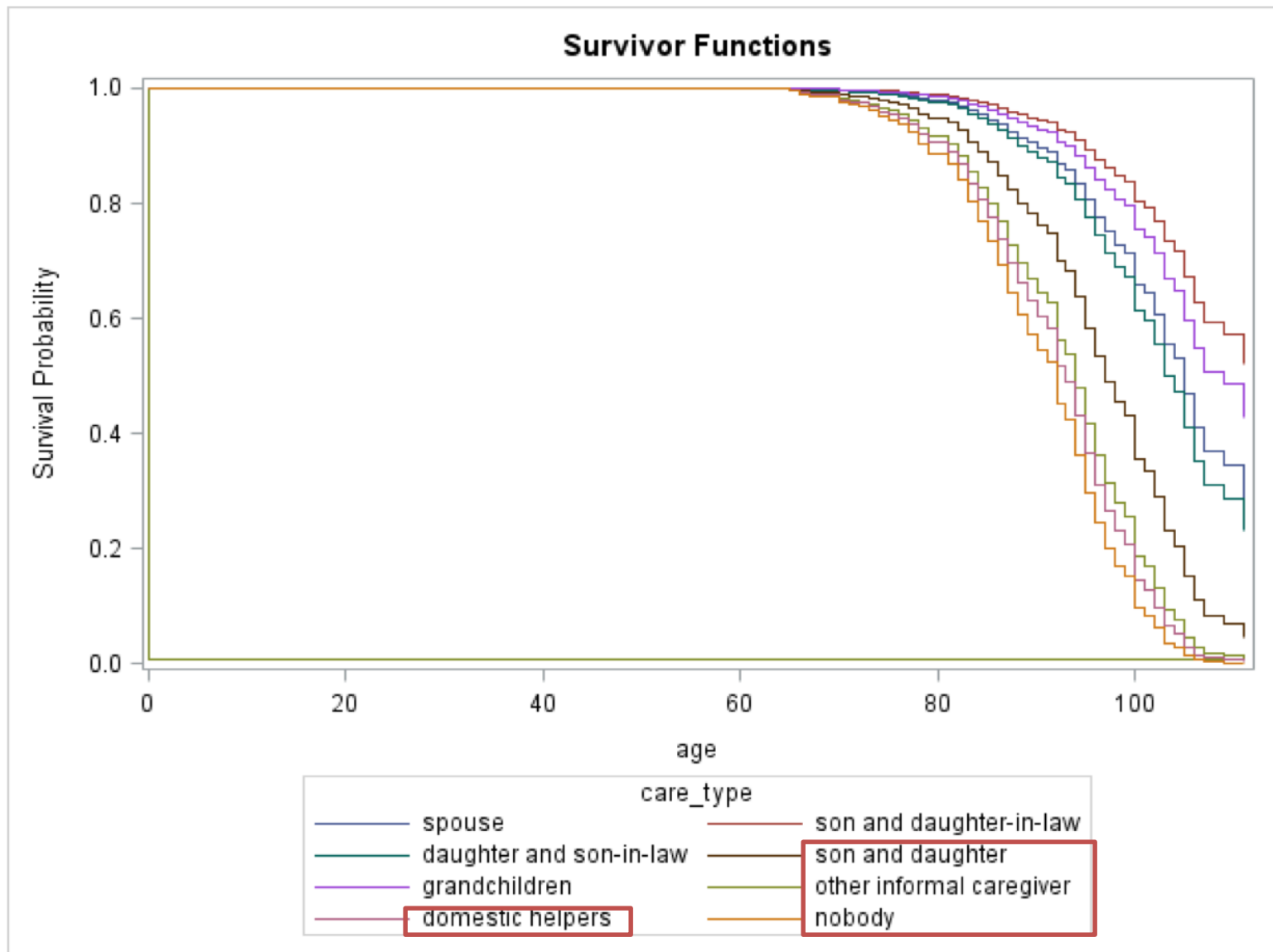| Variables		Total (n=2628)	Institutionalized (n=233)	Not institutionalized (n=2395)
Independent variables				
Care arrangements	Spouse	625 (23.78)	21 (9.01)	604 (25.22)
	Son and daughter-in-law	1258 (47.87)	54 (23.18)	1204 (50.27)
	Daughter and Son-in-law	312 (11.87)	29 (12.45)	283 (11.82)
	Son and daughter	154 (5.86)	28 (12.02)	126 (5.26)
	grandchildren	79 (3.01)	12 (5.15)	67 (2.80)
	Other informal caregivers	69 (2.63)	33 (14.16)	36 (1.50)
	Domestic helpers	56 (2.13)	29 (12.45)	27 (1.13)
	Nobody	75 (2.85)	27 (11.59)	48 (2.00)

Results

- Care arrangement is a predictor of older adults' age of institutionalization
  - Reference: cared for by spouses

Parameter		DF	Parameter estimate	SD	P>chisq	Hazard Ratio
Care arrangement	Son and daughter-in-law	1	-0.65	0.27	0.02	0.52
	grandchildren	1	-0.39	0.37	0.30	0.67
	Daughter and son-in-law	1	0.16	0.29	0.59	1.17
	Son and daughter	1	0.91*	0.29	0.002	2.49
	Other informal caregivers	1	1.39*	0.29	<0.0001	4.03
	Domestic helpers	1	1.53*	0.29	<0.0001	4.64
	nobody	1	1.72*	0.30	<0.0001	5.59

Results

- Place of residence (Reference: town)
- Need for ADL help

Parameter		DF	Parameter estimate	SD	P>chisq	Hazard Ratio
Residence	city	1	0.45*	0.18	0.01	1.57
	rural	1	-0.58*	0.17	0.0007	0.56
ADL	Need help	1	-0.67*	0.16	<0.0001	0.50
Financial dependence	dependent	1	0.41	0.18	0.02	1.51

adjusted Kaplan-Meier survival curves

Discussion

- Increased institutionalization rate
- Care arrangements
  - Sons and daughters-in-law take primary responsibilities
  - Problems in shared responsibilities among sons and daughters: dilemma and family disputes
  - Underprepared workforce and working environment (domestic helpers)*
  - Empty nest families and regional disparities of community-based support

Wang, J., & Wu, B. (2016). Domestic helpers as frontline workers in China's home-based elder care: A systematic review. *Journal of Women & Aging*, 1-12.

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Discussion

- Living in rural areas (protective factor)
  - Continuity of traditional family elder care support provided by sons or daughters-in-law in rural areas
  - Limited access to elder care in LTC facilities in rural areas

Limitations

- Inherent in the structure of the CLHLS dataset

- lack of information about migration history of adult children and attitudes of participants and their families toward institutionalization.

Thank you!

Contact Information

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