Longitudinal Surveys on Aging in Japan

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Presented at Regional Workshop on
Integrating Policy and Research on Ageing in ASEAN:
Conversations across the Policy and Research Divide
Sept 4-6, 2019 Singapore

Longitudinal Study of Aging: Japan

- National Survey of the Japanese Elderly (NSJE): 1987

- Japanese Health and Retirement Survey: 1999

- National Longitudinal Survey of Middle Aged and Elderly in Japan: 2005

- Japanese Survey of Aging and Retirement (JSTAR): 2007

- Nihon University Japanese Longitudinal Study of Aging: 1999

National Survey of the Japanese Elderly (NSJE)

- Conducted in 1987, 1990, 1993, 1996, 1999 and 2002, 2006, 2012, 2017
  - National Survey of the Japanese Elderly (NSJE)
    - sample size: 2,200 60+
- 1987-1996: NSJE
- 1999-2006: JAHEAD (Japanese Study of Asset and Health Dynamics among the Oldest Old)
- 2012-2017: JAHEAD (Japanese Aging and Health Dynamics)

Japanese Study of Aging and Retirement (JSTAR)

- HRS sister survey
- Survey conducted in 2007, 2009, 2011, 2013
- Age 50-75
- Not nationally representative
- 1st wave: 5 municipalities
- Available: https://www.rieti.go.jp/en/projects/jstar/

Nihon University
Japanese Longitudinal Study of Aging (NUJLSOA) -- Purpose

- Investigate levels of and changes in health status of Japanese elderly
- Investigate factors affecting health status and changes in health status over time
- Observe effect of long-term care insurance program on attitude toward long-term care
- Collect comparable data to other longitudinal data for cross-national comparisons

NUJLSOA -- Surveys Conducted

Wave	Main	Follow-up
1	Nov. 1999	Mar. 2000
2	Nov. 2001	Dec. 2001
3	Nov. 2003	Dec. 2003
4	Nov. 2006	Dec. 2006
5	Mar.-Apr 2009	June 2009
6	Nov. 2013	

Survey Design

- For Wave 1
  - Nationally representative sample of 65 and over
  - Initial sample of 6,700 persons selected by Multi-stage stratified random sampling
  - oversampled those aged 75 and over by factor of 2
  - In-person interview survey using structured survey questionnaire (proxy allowed)
- For later waves
  - Sample refreshing - New sample persons for those age 65 and 66 were added at waves 2 and 3
  - No sample refreshing for waves 4 and 5

Sample Size

	1999	2001 Panel	2001 65-66	2003 Panel	2003 65-66	2006 Panel	2009 Panel
N	6700	4997	900	5242	900	4744	3321
Resp	4997 74.6%	3992 79.9%	631 70.1%	3935 75.1%	572 63.6%	3414 72.0%	2583 77.8%
Dead		327 6%		380 7.2%		477 10.1%	312 9.4%
No Resp	1703 25.4%	678 13.6%	269 29.9%	927 17.7%		853 18.0%	426 12.8%

Question Items in Wave 1

- Demographic attributes
- Family Structure
- Socioeconomic status
- Intergenerational exchange
- Information on Surviving Children's family
- Health behaviors
- Chronic conditions

- Physical functioning (ADL, IADL, NAGI)
- Mental Health
- Vision & Hearing
- Dental Health
- Health Care Utilization
- Housing
- Information Technology
- Living Arrangement

Question Items in Wave 2

Additional Feature

  Decedent Interview

- Date of death
- Cause of death
- Place of death
- Medical expenses in the last 6 months prior to death
- Relationship of main caregiver

Additional Questions

- Long-term care insurance system
- CIDI

Question Items in Wave 3

Additional Feature

- survey of survival status of those who did not respond at Wave 1

Additional Questions

- Sleeping disorders
- Restless Leg Syndrome
- Pain
- Stress

Question Items in Wave 4

Additional Feature

- Blood Pressure / Pulse
  - Omron HEM-762

- Anthropometric Measures
  - Waist
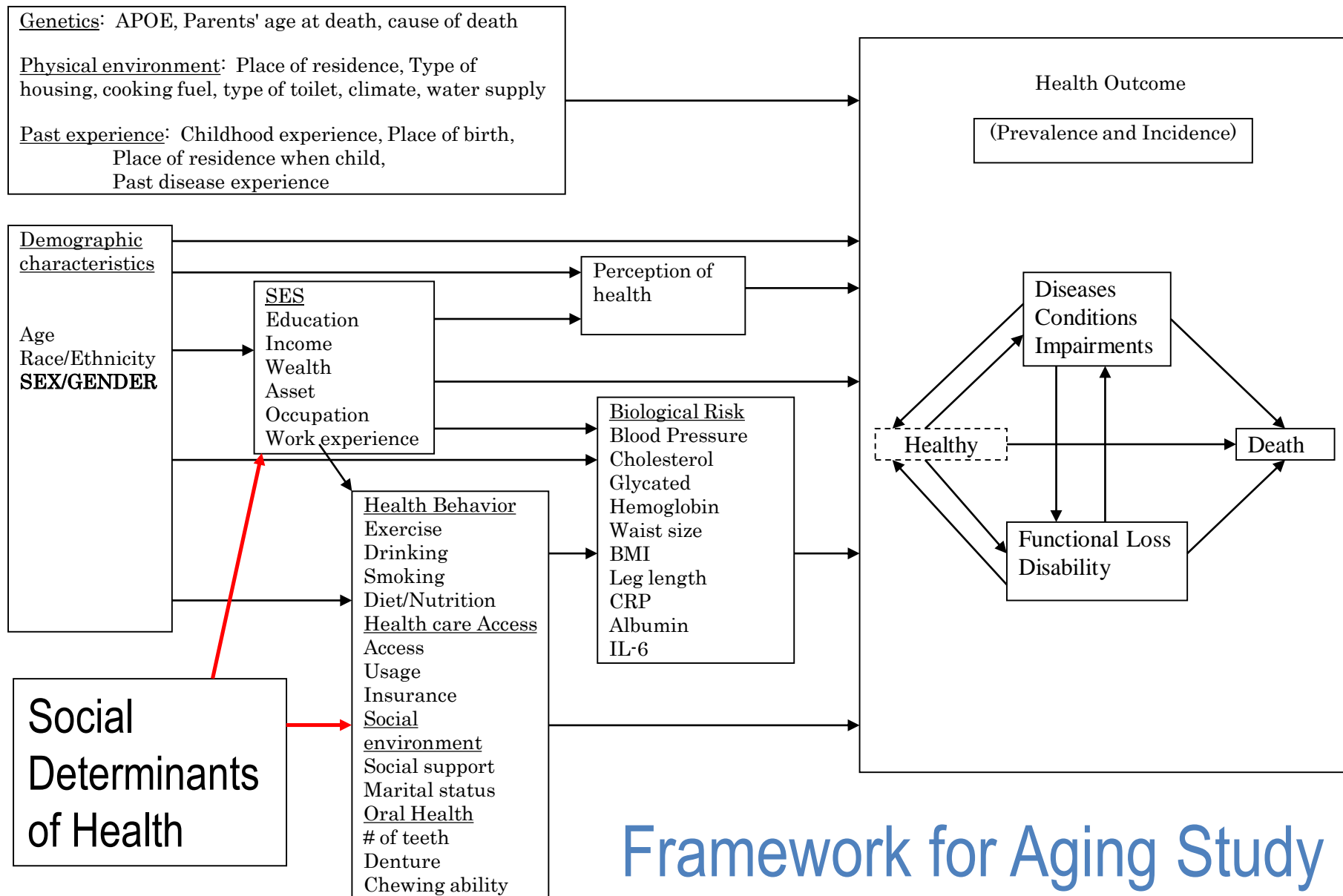 - Leg length
  - Knee height

- Grip strength
  - Tanita

Additional Questions

- Cognitive functioning
  - Immediate word recall
  - Delayed word recall
  - Serial 7

- Anchoring Vignettes
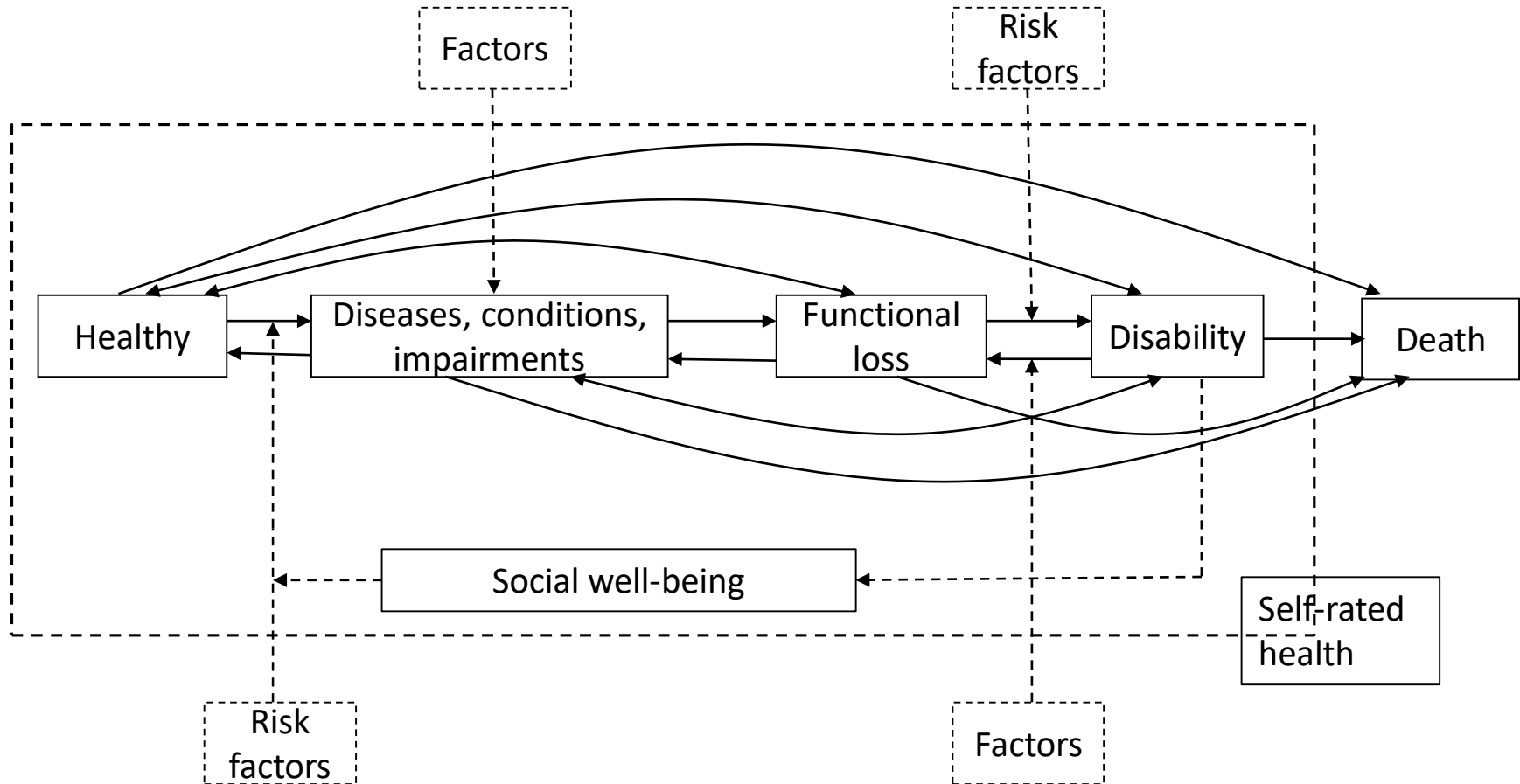
- Health utilization

Question Items in Wave 5

Additional Feature

- Anthropometric Measures
  - Height
  - Weight

Genetics: APOE, Parents' age at death, cause of death

Physical environment: Place of residence, Type of housing, cooking fuel, type of toilet, climate, water supply

Past experience: Childhood experience, Place of birth,
Place of residence when child,
Past disease experience

Health Outcome

(Prevalence and Incidence)

Demographic characteristics

Age
Race/Ethnicity
SEX/GENDER

SES
Education
Income
Wealth
Asset
Occupation
Work experience

Perception of health

Diseases
Conditions
Impairments

Healthy

Death

Biological Risk
Blood Pressure
Cholesterol
Glycated
Hemoglobin
Waist size
BMI
Leg length
CRP
Albumin
IL-6

Functional Loss
Disability

Health Behavior
Exercise
Drinking
Smoking
Diet/Nutrition
Health care Access
Access
Usage
Insurance
Social environment
Social support
Marital status
Oral Health
# of teeth
Denture
Chewing ability

Social Determinants of Health

Framework for Aging Study

Defining Health:
Health States and Health Transitions

5 Aspects of Health

- Healthy
- Diseases, Conditions, and Impairments:
  - stroke, heart disease, pain, loss of vision
- Functioning:
  - walking, kneeling, grasping
- Disability:
  - ability to perform personal activities, independent living, work
- Death

Question items corresponding to each aspect

- Healthy: overall health status--self-rated health
- Diseases/conditions/impairments:
  - physical health: diseases, pain, vision, hearing, blood pressure, grip strength, anthropometric measures
  - mental health: CES-D, PGC Morale Scale, cognition
  - social health: abuse, social ties
  - oral health: number of teeth, chewing ability, denture
- Functioning: Nagi measures
- Disability: ADLs and IADLs
- Death: Cause of death

Limitation

- Institutionalized population is not fully covered

Are There Education Differentials in Disability and Mortality Transitions and Active Life Expectancy Among Japanese Older Adults? Findings From a 10-Year Prospective Cohort Study

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Objectives. To investigate the robust education–health association found in Western developed nations in the Japanese context. We examined disability and mortality transitions and computed active life expectancy (ALE) by educational attainment for a cohort of Japanese adults aged 65+ years.

Method. Nationally representative data from the Nihon University Japanese Longitudinal Study of Aging over a 10-year period in Japan (1999, 2001, 2003, 2006, and 2009) were used ($N = 4,968$). Disability was measured by difficulties in performing daily activities. A multistate life table method was employed using an interpolated Markov chain approach.

Results. There is little effect of education on disability and mortality transitions. Except for transiting from an active to inactive state (disability incidence), the other health transitions, including to mortality, are not statistically significant. ALE computations show that Japanese men and women with more education can expect more years of remaining life and active life.

Discussion. The robust education–health relationship found in Western societies does not seem applicable in Japan. We discuss the casual mechanisms addressed in the literature in relation to Japan's relatively egalitarian society and specific characteristics.

ACTIVE LIFE EXPECTANCY FOR ELDERLY JAPANESE
BY CHEWING ABILITY

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Key words：health expectancy, chewing ability, elderly Japanese, panel survey

Objective　Panel interview surveys of nationally representative elderly people aged 65 years or above in Japan were conducted three times at 2-year intervals since 1999 (Nihon University Japanese Longitudinal Study of Aging) to estimate health expectancy for males and females separately according to their chewing ability.

Method　Multistate life table methods were applied to estimate health expectancy. Three health states, namely, active, inactive and dead, were defined according to the ability to perform specified daily activities. Living respondents were considered to be in an "inactive state" if they responded "very difficult" or "unable" for performance of at least one ADL or IADL. Otherwise they were considered to be in an "active state". 4,323 sampled persons who responded to the baseline survey were included in the study. Based on estimated transition probabilities over the survey period between active and inactive states, and active and inactive states to death, both population- and status-based multistate life tables were constructed according to chewing ability. Those who could chew relatively hard foods at the baseline survey were classified as Group A and those who could chew only relatively soft foods were classified as Group B.

Results　The population-based multistate life tables indicated that at age 65, total life expectancy was 19.3/23.2 (males/females) years for Group A and 16.7/21.1 years for Group B. Active life expectancy was 16.8/18.6 years and 13.6/16.3 years, and inactive life expectancy was 2.4/4.6 years and 3.1/4.8 years for Groups A and B respectively. A statistically significant difference was observed between the two groups only in terms of active life expectancy. From status-based multistate life tables, similar patterns were observed for those whose status at the baseline was "active".

Conclusion　These results suggest that maintenance or recovery of sufficient chewing ability for elderly people is related to a longer total life expectancy and even more strongly related to a longer active life expectancy.

Gerontology

An Analysis of the Impact of Cell Phone Use on Depressive Symptoms among Japanese Elders

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squares regression analyses. **Results:** Although the use of cell phones was related to lower levels of depressive symptoms among elderly Japanese people, controlling for sociodemographic characteristics and physical health conditions wiped out the effects for men. In contrast, the protective effects of using cell phones persisted among women, even net of all controls. Moreover, the impact of using cell phones was not explained by filial relationship measures, suggesting that cell phone use influences the mental health of older women independently of social engagement. **Conclusions:** Among the many advantages brought about by recent technological developments, cell phones appear to be an important contributor to the psychological well-being of Japanese elders. Researchers and policy makers should prioritize access to new technologies for older adults.

Table 5. Estimates of Life, Disability, and Disability-Free Life Expectancy Estimates for Men and Women Across Several Covariate Scenarios and Select Ages

Scenarios	Age	Men			Women		
		Years without disability	Years with disability	Total life expectancy	Years without disability	Years with disability	Total life expectancy
Medium level	65	16.76	1.69	18.45	19.20	3.20	22.40
Top level	65	24.28	1.45	25.73	29.89	3.01	32.89
Bottom level	65	11.46	1.80	13.26	12.99	3.29	16.29

Factors considered in the study are: age, sex education (high/low) occupation (while/others), income (high/low), life threatening diseases (yes/no), debilitating diseases (yes/no)

Source: Chan, Zimmer and Saito, 2010, *Journal of Aging and Health*

Association between Depression and Insomnia Subtypes: A Longitudinal Study on the Elderly in Japan

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Study Objective: To examine the association between depression and three subtypes of insomnia, namely, difficulty initiating sleep (DIS), early morning awakening (EMA), and difficulty maintaining sleep (DMS).

Conclusion: The longitudinal study revealed a statistically significant relationship, controlling for other relevant factors, between DIS and the presence of depression three years later, but not between EMA or DMS and depression. Based on our findings, we recommend that the association between insomnia subtypes and depression be studied longitudinally in clinical settings.

Keywords: Depression, insomnia subtypes, longitudinal study, elderly Japanese

Citation: Yokoyama E; Kaneita Y; Saito Y; Uchiyama M; Matsuzaki Y; Tamaki T; Munezawa T; Ohida T. Association between depression and insomnia subtypes: a longitudinal study on the elderly in Japan. *SLEEP* 2010;33(12):1693-1702.

MORTALITY

Cross-national comparison of sex differences in health and mortality in Denmark, Japan and the US

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How accurate are self-reported height, weight, and BMI among community-dwelling elderly Japanese?: Evidence from a national population-based study

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