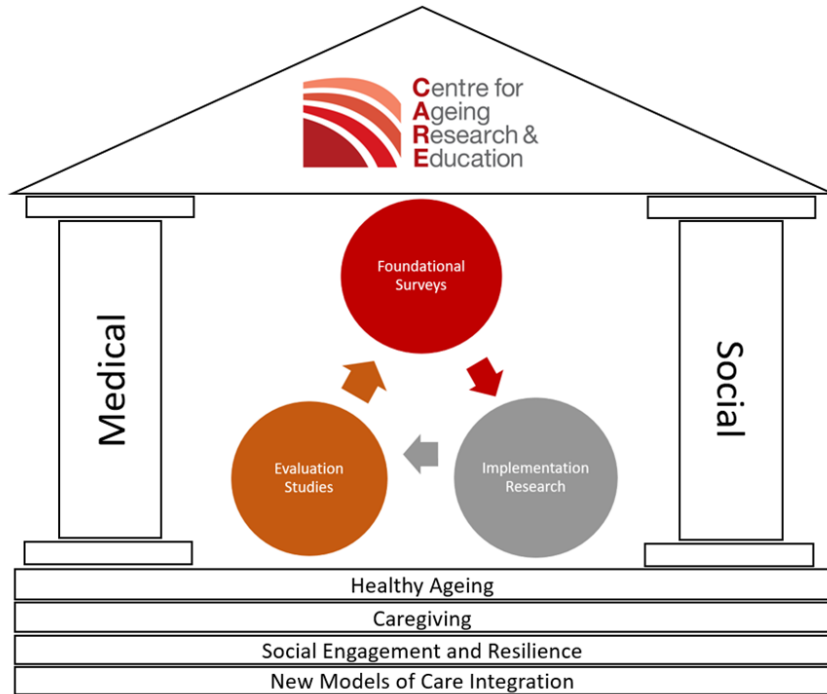


Cognitive Functioning among Older Persons in the Philippines and Viet Nam

Yasuhiko Saito

27 October 2021

9am – 10.30am



Vision

To achieve health, social inclusion and a high quality of life for our ageing population

Mission

- Provide an environment that enables interdisciplinary research and education on ageing
- Implement and evaluate best practices to improve health and function of older adults
- Inform the policy and practice agenda on ageing

CARE Education – Platforms

- Signature Conferences
- Research Methods Workshops
- Experts Programmes
- Research/Policy Briefs
- Round Tables
- Gerontology Internship Programme
- Industry Engagement

CARE Website

- Repository of Ageing Publications
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CARE Social Media

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Technical issues

> Please use the Chat box/option. CARE administrative staff will try and address your issues

Questions and Answers

- > Your microphone and video functions have been disabled
- > The question and answer segment will be at the end of the talk
- > You can ask questions via the following way:
 - Type your question(s) out in the Q&A box/option

Evaluation survey

- A QR code/link will be provided at the end of the session.
- Your completion will be much appreciated!

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Introduction to Collaborators

- Yasuhiko Saito:
 - CARE Associate
 - Research Project Professor, Nihon University, Tokyo, Japan
 - Senior Advisor on Population Ageing, Economic Research Institute for ASEAN and East Asia, Jakarta, Indonesia
- Grace Cruz:
 - Professor, University of the Philippines Population Institute, Quezon City, Philippines
- Nguyen Cong Vu:
 - Deputy Director, Institute for Population, Health and Development, Ha Noi, Viet Nam

Outline of the talk

- Introduction
- Healthy Ageing
- Introduction to longitudinal survey project
- Measures of cognitive functioning
- Results from the survey data
- Discussion

Dementia

- <https://www.who.int/news-room/fact-sheets/detail/dementia>
- Dementia is a syndrome in which there is deterioration in cognitive function beyond what might be expected from the usual consequences of biological ageing.
- Although dementia mainly affects older people, it is not an inevitable consequence of ageing.
- Dementia has physical, psychological, social and economic impacts, not only for people living with dementia, but also for their careers, families and society at large.

Dr. Kazuko Hasegawa

- He is a well-known psychiatrist and a specialist on dementia.
- He developed a scale to examine cognitive functioning in 1974 and revised in 1991 (HDS-R) used widely in Japan similar to MMSE (Mini Mental State Examination).
- He became demented when he was around age 88.
- The fact is anyone can become demented.
- He is telling us about Dementia from patient's point of view.
- His son who is also a psychiatrist says that "he is glad that his father lived long enough to be demented."

Those With Cognitive Impairments Live Longer than Those Without on Average

Life Expectancy at Age 55 in 2000: US

Total: 25.7

Males: 23.8

Females: 27.4

Source: Laditka SB, Laditka JN. "More Education May Limit Disability and Extend Life For People With Cognitive Impairment," Am J Alzheimers Dis Other Demen, 29(5):436-47, 2014.

doi: 10.1177/1533317513518648.

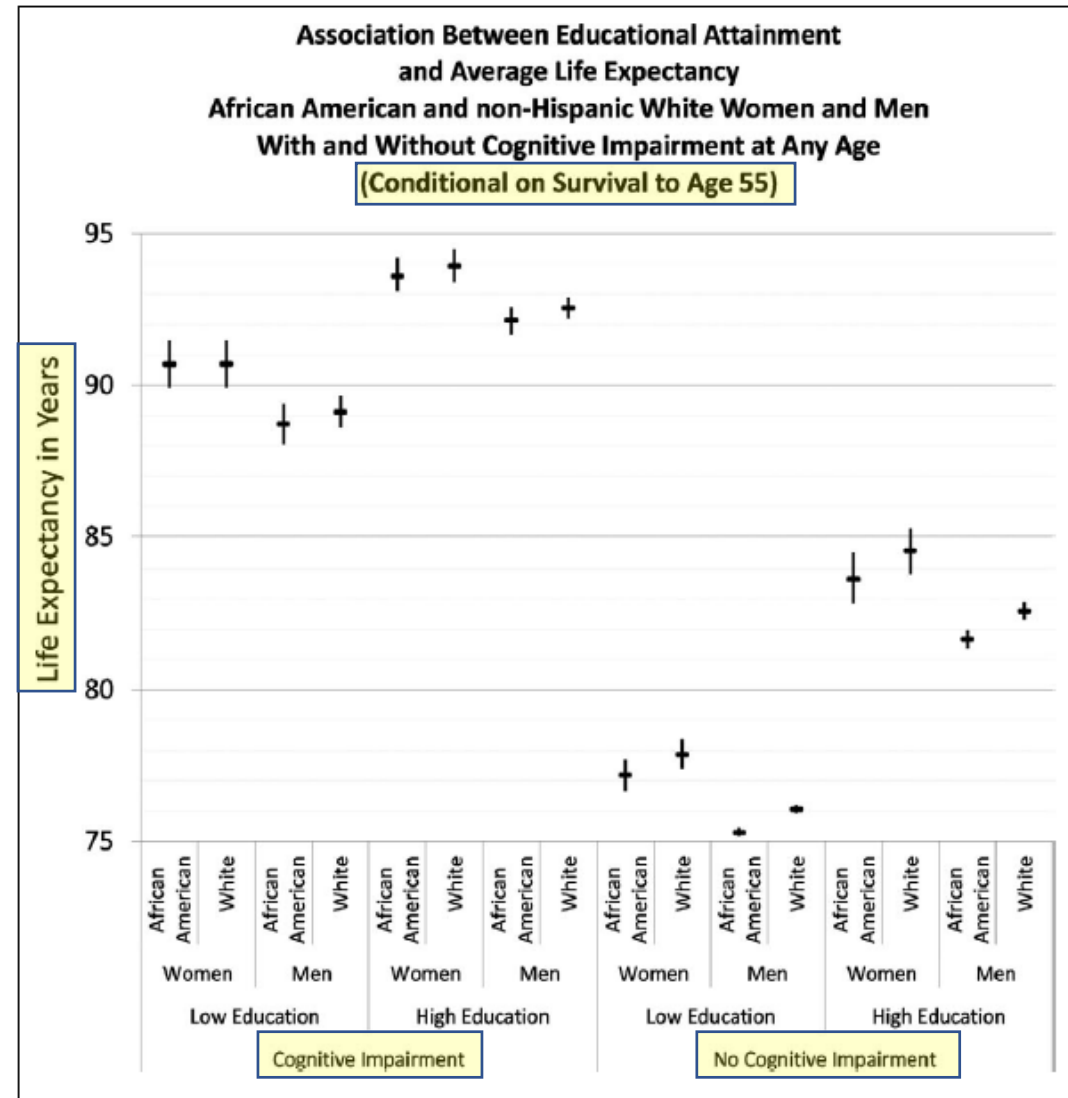


Figure 1. Data from the Panel Study of Income Dynamics, 1992 to 2009. Horizontal bars indicate point estimates for remaining life expectancy at age 55; vertical lines identify the 95% confidence intervals estimated from 1000 bootstrap microsimulation samples for each population group; bootstrap sampling accounted for parameter uncertainty and Monte Carlo variation; high education = college graduate; low education = grades 0 through 7.

Dementia--statistics

- Around 50 million people with dementia
- Approximately 60% of them living in low- and middle-income countries
- 10 million new cases a year
- Projected to reach 82 million in 2030 and 152 million in 2050
- In 2015, the total global societal cost of dementia was estimated to be US\$ 818 billion, equivalent to 1.1% of global gross domestic product (GDP).

Source: Risk reduction of cognitive decline and dementia: WHO guidelines. Geneva: World Health Organization; 2019.

Dementia: Global public health concern

- One of major causes of disability
- Needing long-term care

Source: Global status report on the public health response to dementia.
Geneva: World Health Organization; 2021.

We aim for Healthy Ageing

- WHO published its first World Report on Ageing and Health in September 2015, and all Member States endorsed its first Global Strategy and Action Plan on Ageing and Health in May 2016.
- In the report, Healthy Ageing as a person-centered concept, based on life course and functional perspectives, that can be applied to all people in all settings.
- Healthy Ageing is defined as "the process of developing and maintaining the **functional ability** (FA) that enables well-being in older age, with functional ability determined by the intrinsic capacity (IC) of the individual, the environments they inhabit and the interaction between them."

Aims of the Longitudinal Survey Project

- Supported by the Economic Research Institute for ASEAN and East Asia (ERIA)
- Examine well-being of older adults aged 60 and over in two countries of ASEAN--Philippines and Viet Nam
- Focuses on health status including mental health: current health status and correlates, and changes over time if any, and determinants
- Estimate health expectancy
- Examine care needs, economic well-being, etc.

Statistics at a glance: 2020

| Indicators | | Philippines | Vietnam |
|----------------------------------|-----------|-------------|----------|
| Population | total | 109.6 mil | 97.3 mil |
| | 60+ | 9.4 mil | 12.0 mil |
| Proportion of population age 60+ | 2020 | 8.6% | 12.3% |
| | 2050 | 16.5% | 27.2% |
| Life expectancy | at birth | 71.3 | 75.5 |
| | at age 60 | 19.6 | 22.0 |
| GDP per capita | 2019 | \$8,908 | \$8,041 |
| Gini Index | 2015/2018 | 44.4 | 35.7 |

Sources: UN World Population Prospects 2019; Work Bank Open Data (PPP, 2017 constant)

Mentioned in an article published in Japan in 1970 by Shinfuku, Hasegawa and Takeuchi

- In 1969 the proportion of those aged 60 and above was 10.3% in Japan.
- The projected proportion is expected to surpass France and UK, leading aging countries in the world at the time by 1995.
- Very scarce information on mental disorders among older adults in Japan
- No nationally representative survey on mental health among older adults

Introduction to Data Sources of the Talk

- Baseline survey of the Longitudinal Study of Ageing and Health in the Philippines (LSAHP)

<https://www.eria.org/publications/ageing-and-health-in-the-philippines/>

- Baseline survey of the Longitudinal Study of Ageing and Health in Viet Nam (LSAHV)

<https://www.eria.org/publications/ageing-and-health-in-viet-nam/>



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Ageing and Health in The Philippines



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Ageing and Health in Viet Nam

Survey Design

- Nationally representative survey of aged 60 and over
- Sample size of about 6,000 persons selected by Multi-stage stratified random sampling
- Oversampled those aged 70-79 by factor of 2 and aged 80 and over by factor of 3
- Face-to-Face interview survey using structured survey questionnaire by tablet (proxy allowed)
- Multi-actor interview survey (adult child and caregiver)

Questionnaires

- Screening by **Short Portable Mental Status Questionnaire** (SPMSP: Pfeiffer 1975)
 1. Household questionnaire
 2. Main questionnaire for older adults
 3. Anthropometric measures questionnaire
 4. Adult Child questionnaire
 5. Care giver questionnaire (primary and potential care giver)

Main Questionnaire

- Demographic attributes
- Socioeconomic status
- Intergenerational exchange
- Social network
- Loneliness
- Health behaviors
- Chronic conditions
- WG disability questions
- Sleep
- GALI
- Physical functioning (ADL, IADL, NAGI)
- **Mental Health**
- Vision & Hearing
- Fall
- Pain
- Dental Health
- Health Care Utilization
- Income/Pension
- Information Technology

Mental Health

- Short Portable Mental Status Questionnaire (SQMSQ)
- Telephone Interview for Cognitive Status (TICS-HRS)
- Depressive Symptom
 - 11 item CES-D scale (Kohout, et. al., 1993)

SPMSQ

1. What is the month, date, and year today?
2. What is the day of the week?
3. What is the name of this place?
4. What is your phone number? (What is your street address?)
5. How old are you?
6. When were you born?
7. Who is the current president?
8. Who is the president before him?
9. What was your mother's maiden name?
10. Can you count backward from 20 by 3's?

SPMSQ

- 0-2 errors: intact cognitive functioning
 - 3-4 errors: mild cognitive impairment

 - 5-7 errors: moderate cognitive impairment
 - 8 or more errors: severe cognitive impairment
- Cut-off point
- Scoring: educational attainment considered
 - One more error is allowed in the scoring if a respondent has had a grade school education or less.
 - One less error is allowed in the scoring if a respondent has had education beyond the high school level.

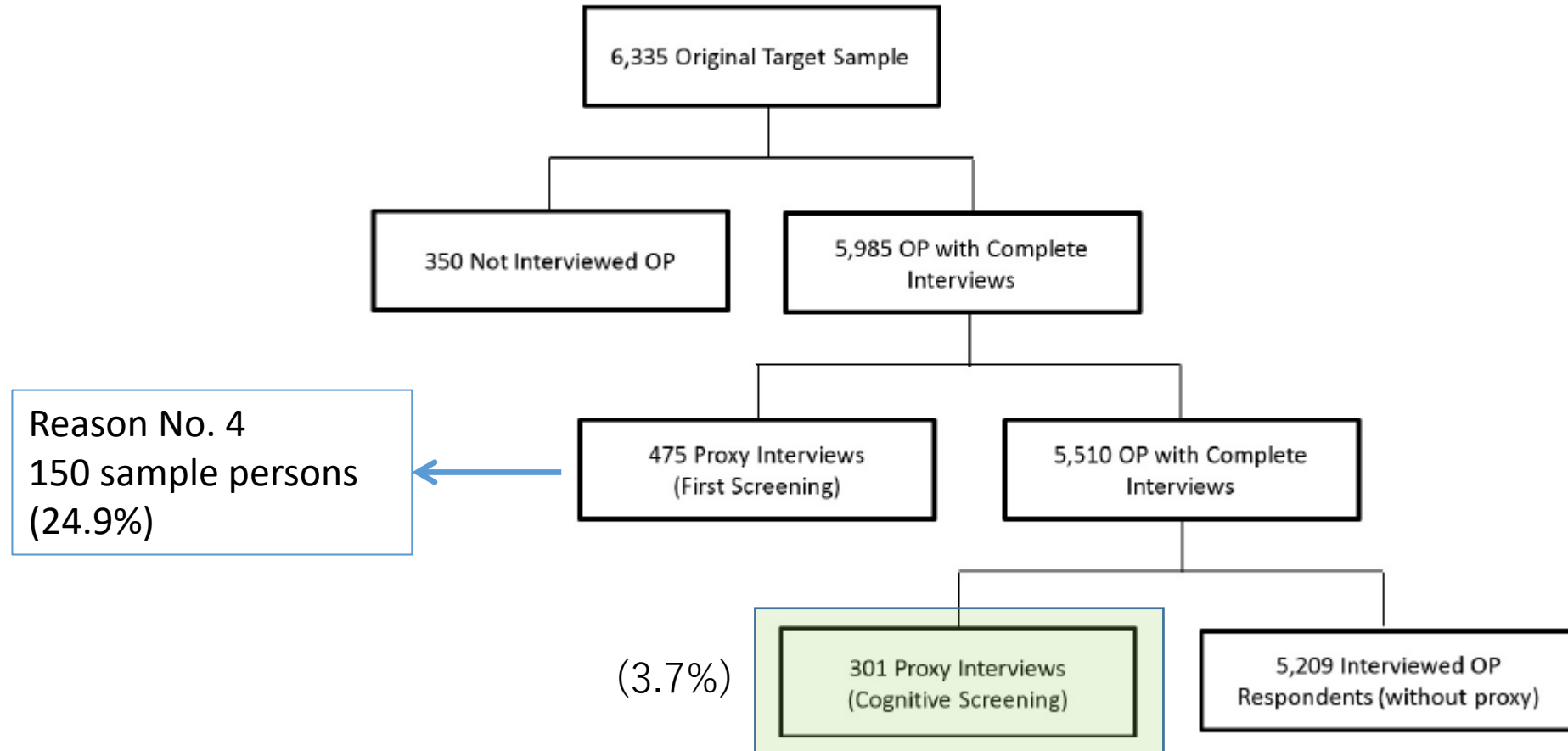
First screening

Reason Older Person R cannot be interviewed:

1. Older Person R has been hospitalized, sick, or incapacitated.
2. Older Person R has difficulty hearing (Older Person R is hearing impaired, etc.).
3. Older Person R has difficulty speaking (Older Person R is experiencing verbal difficulties).
4. Older Person R has experienced psychological disorder such as memory loss, confusion or loss of consciousness, dementia, etc.

Philippines: Sample Size

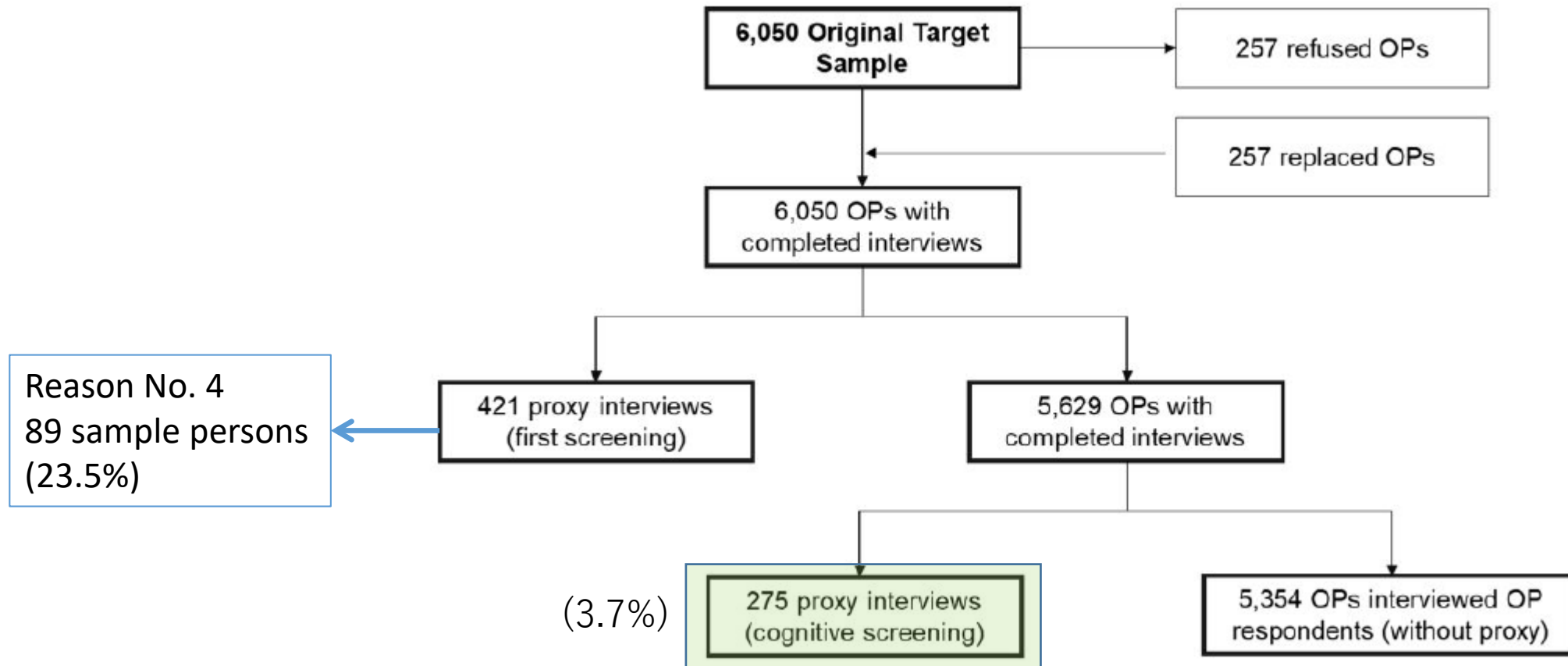
Figure 2.4. Study Sample



Source: Calculated by DRDF using original LSAHP data.

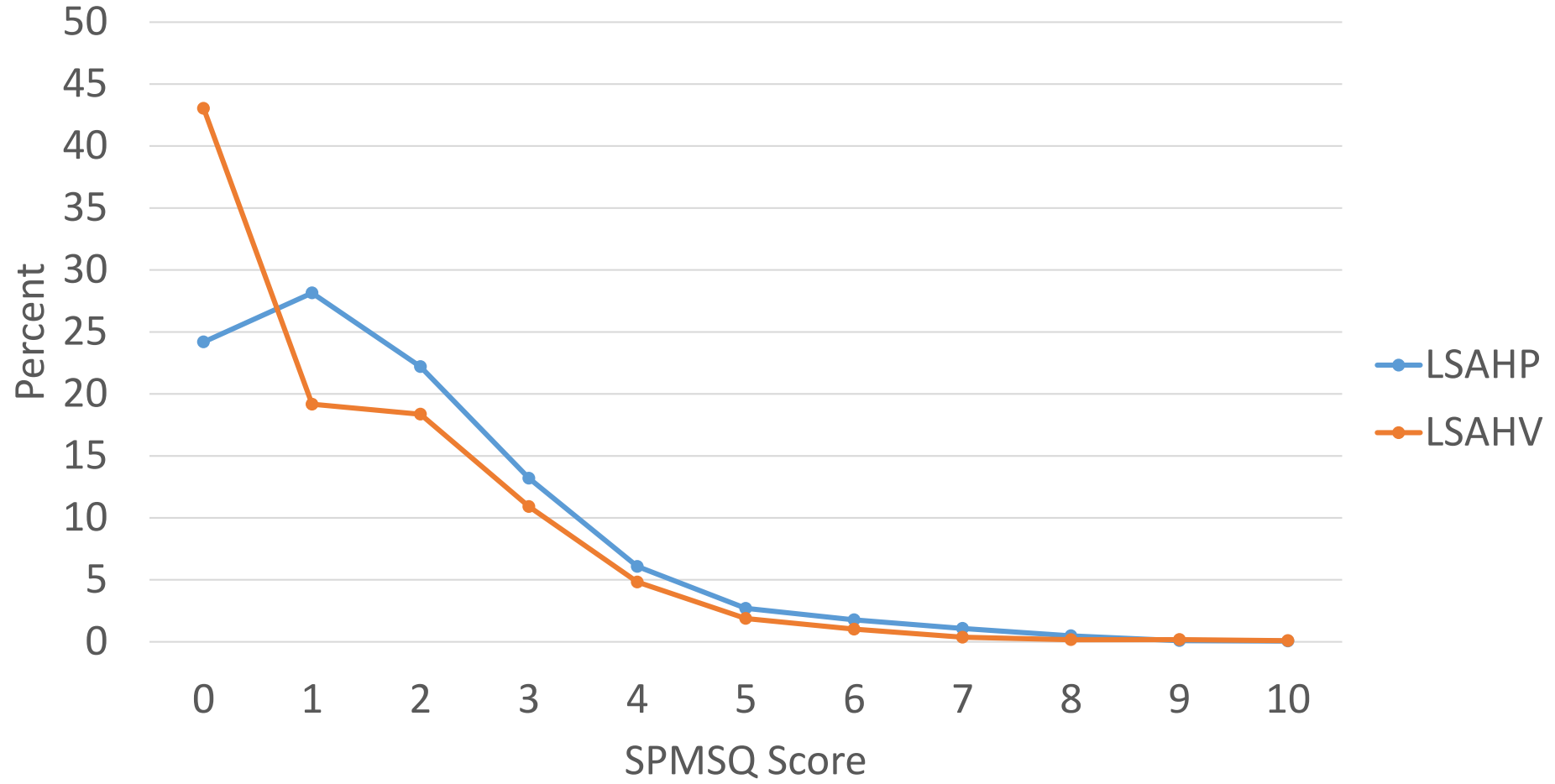
Viet Nam: Sample Size

Figure 2.4. Study Sample



Source: Calculated by PHAD using original LSAHV data.

Distribution of SPMSQ score



Distribution of screened sample persons by SPMSQ by age and sex: Moderate or Severe Cognitive Impairment

| Age | Philippines | | | | Viet Nam | | | |
|-------|-------------|------|---------|------|----------|-----|---------|------|
| | Males | | Females | | Males | | Females | |
| | N | % | N | % | N | % | N | % |
| 60-64 | 5 | 2.4 | 6 | 0.8 | 8 | 1.4 | 17 | 2.8 |
| 65-69 | 10 | 1.7 | 11 | 0.8 | 7 | 0.8 | 25 | 2.6 |
| 70-74 | 13 | 1.8 | 27 | 2.7 | 6 | 0.9 | 25 | 3.8 |
| 75-79 | 13 | 6.3 | 36 | 6.0 | 14 | 2.6 | 32 | 5.9 |
| 80+ | 51 | 13.4 | 129 | 21.5 | 39 | 9.0 | 102 | 12.7 |
| Total | 92 | 3.3 | 209 | 3.9 | 74 | 2.4 | 201 | 4.8 |

N: Unweighted; % within age group: Weighted

Why TICS?

- MMSE considered first
 - need to pay for using questionnaire: budget constraint
 - need to use paper and pencil
- Tablets for interview surveys
- HRS versions of TICS (35 points and 27 points)
- Compare with other Asian countries
 - China, India, Japan, South Korea, Malaysia and Thailand

TICS (Original version)

11 set of questions with 41 right answer points

1. Please tell me your full name?
2. What is today's date? What day of the week is it? What season is it?
3. What are you right now?
4. Count backwards from 20 to 1. (Backward counting)
5. I'm going to read you a list of ten words, Please listen carefully and try to remember them. When I am done, tell me as many words as you can, in any order. (Immediate word recall)
6. One hundred minus 7 equals what? And 7 from that? etc. (Serial 7's test)

TICS (Original version)--continued

7 What do people usually use to cut paper?

How many things are in a dozen?

What do you call the prickly green plant that lives in the desert?

What animal does wool come from?

8. Say this: "No ifs, ands or buts."

Say this: "Methodist episcopal."

9. Who is the President of the United States right now?

Who is the Vice-President?"

10. With your finger, tap 5 times on the part of the phone you speak into.

11. I'm going to give you a word and I want you to give me its opposite. For example, the opposite of hot is cold. What is the opposite of "west"?

What is the opposite of "generous"?

TICS (LSAHP/LSAHV version)

9 set of questions

1. Please tell me your full name?
2. What is today's date? What day of the week is it? What season is it?
3. What are you right now?
4. Count backwards from 20 to 1.
5. I'm going to read you a list of ten words, Please listen carefully and try to remember them. When I am done, tell me as many words as you can, in any order.
6. One hundred minus 7 equals what? And 7 from that? etc.

TICS (LSAHP/LSAHV version)--continued

7 ~~What do people usually use to cut paper?~~

How many things are in a dozen?

~~What do you call the prickly green plant that lives in the desert?~~

~~What animal does wool come from?~~

8. ~~Say this: "No ifs, ands or buts."~~

~~Say this: "Methodist episcopal."~~

9. Who is the President ~~of the United States~~ right now?

Who is the Vice-President?"

~~10. With your finger, tap 5 times on the part of the phone you speak into.~~

11. I'm going to give you a word and I want you to give me its opposite. For example, the opposite of hot is cold. What is the opposite of "west"?

~~What is the opposite of "generous"?~~

TICS (HRS 35 points version)

- I'll read a set of 10 words and ask you to recall as many as you can. Please listen carefully as I read the set of words because I cannot repeat them. When I finish, I will ask you to recall aloud as many of the words as you can, in any order.
- One hundred minus 7 equals what? And 7 from that? etc.
- A little while ago, I read you a list of words and you repeated the ones you could remember. Please tell me any of the words that you remember now.
- Please try to count backward as quickly as you can from the number I will give you. I will tell you when to stop.
- Please tell me today's date. What is the day of the week?
- What do people usually use to cut paper?
- What do you call the kind of prickly plant that grows in the desert?
- Who is the President of the United States right now? Who is the Vice President?

TICS (HRS 27 points version)

- I'll read a set of 10 words and ask you to recall as many as you can. Please listen carefully as I read the set of words because I cannot repeat them. When I finish, I will ask you to recall aloud as many of the words as you can, in any order.
- One hundred minus 7 equals what? And 7 from that? etc.
- A little while ago, I read you a list of words and you repeated the ones you could remember. Please tell me any of the words that you remember now.
- Please try to count backward as quickly as you can from the number I will give you. I will tell you when to stop.

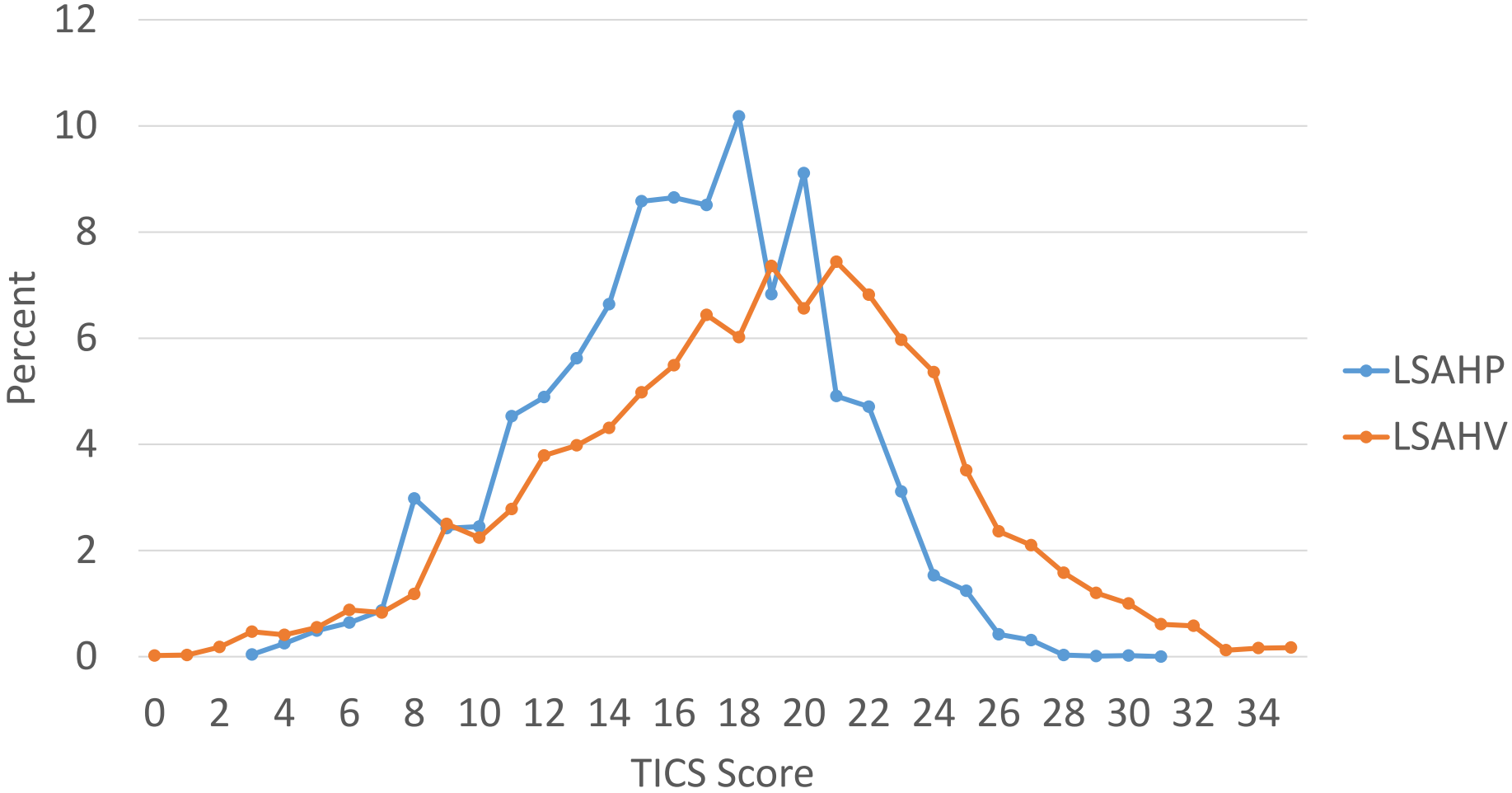
TICS (LSAHP/LSAHV 27 points version)

- I'll read a set of 10 words and ask you to recall as many as you can. Please listen carefully as I read the set of words because I cannot repeat them. When I finish, I will ask you to recall aloud as many of the words as you can, in any order.
- One hundred minus 7 equals what? And 7 from that? etc.
- A little while ago, I read you a list of words and you repeated the ones you could remember. Please tell me any of the words that you remember now.
- Please try to count backward as quickly as you can from the number I will give you. I will tell you when to stop.

TICS (LSAHP/LSAHV 35 points version)

- I'll read a set of 10 words and ask you to recall as many as you can. Please listen carefully as I read the set of words because I cannot repeat them. When I finish, I will ask you to recall aloud as many of the words as you can, in any order.
- One hundred minus 7 equals what? And 7 from that? etc.
- A little while ago, I read you a list of words and you repeated the ones you could remember. Please tell me any of the words that you remember now.
- Please try to count backward as quickly as you can from the number I will give you. I will tell you when to stop.
- Please tell me today's date. What is the day of the week?
- ~~What do people usually use to cut paper?~~ How many things are in a dozen?
- ~~What do you call the kind of prickly plant that grows in the desert?~~
- What is the opposite of "west"?
- Who is the President of the United States right now? Who is the Vice President?

Distribution of TICS Score



Distribution of self respondent by 2 TICS classifications by age

| | Philippines | | | | Viet Nam | | | |
|----------------------------|-------------|-------|-------|-------|----------|-------|-------|-------|
| | 60-69 | 70-79 | 80+ | Total | 60-69 | 70-79 | 80+ | Total |
| 27 Points HRS TICS | | | | | | | | |
| Mean score | 10.2 | 8.5 | 7.4 | 9.5 | 13.5 | 11.6 | 9.4 | 12.4 |
| Normal (12-27) | 37.4% | 19.4% | 11.9% | 30.7% | 67.3% | 50.3% | 28.6% | 57.5% |
| CIND (7-11) | 46.8% | 51.0% | 47.5% | 47.9% | 25.3% | 34.6% | 42.5% | 30.1% |
| Demented (0-6) | 15.8% | 29.6% | 40.6% | 21.4% | 7.5% | 15.1% | 29.0% | 12.4% |
| 35 Points HRS TICS | | | | | | | | |
| Mean score | 17.1 | 15.1 | 13.6 | 16.3 | 19.7 | 17.6 | 15.1 | 18.5 |
| Normal (>8) | 96.2% | 92.8% | 89.0 | 94.7% | 97.7% | 94.0% | 88.5% | 95.5% |
| Cognitive Impairment (<=8) | 3.8% | 7.2% | 11.0 | 5.3% | 2.3% | 6.0% | 11.5% | 4.6% |

Terms for classifications

- SPMSQ:
 - Intact, Mild, Moderate, Severe Cognitive Impairment
- TICS-HRS 35:
 - Normal, Cognitive Impairment
- TICS-HRS 27:
 - Normal, CIND (Cognitive Impairment Not Demented), Demented

MCI: Mild Cognitive Impairment (Peterson, et. al., 1999)

Risk reduction of cognitive decline and dementia: WHO guidelines. Geneva: World Health Organization; 2019.

1. Physical activity
2. Tabaco cessation
3. Nutrition--Healthy Diet
4. Reducing or ceasing hazardous and harmful drinking
5. Cognitive training
6. Social activity
7. Weight management
7. Management of hypertension
8. Management of diabetes mellitus
9. Management of dyslipidaemia
10. Management of depression
11. Management of hearing loss

Distribution of demographic, lifestyle, health and social characteristics of LSAHP respondents

| Variables (N=5510) | N | % or Mean | Variables (N=5510) | N | % | Variables (N=5510) | N | % |
|---|------|-----------|---|------|------|---|------|------|
| Age, years | | 68.6 | At least one of IADL limitation | | | Feeling depress | | |
| SPMSQ score | | 1.73 | Yes | 1654 | 26.1 | Yes | 340 | 6.3 |
| Sex | | | No | 3856 | 73.9 | No | 4869 | 90.1 |
| Male | 2000 | 40.1 | Sleep satisfaction | | | Missing | 301 | 3.6 |
| Female | 3510 | 59.9 | Yes | 4124 | 76.9 | Feeling lonely | | |
| Level of education | | | No | 958 | 16.8 | Yes | 414 | 8.0 |
| Primary or less | 3644 | 72.6 | Don't know | 128 | 2.7 | No | 4795 | 88.3 |
| Secondary, high school and vocational | 1319 | 19.3 | Missing | 300 | 3.7 | Missing | 301 | 3.7 |
| College and above | 547 | 8.1 | Having trouble falling asleep | | | Feeling happy | | |
| Current working status | | | Yes | 803 | 14.6 | Yes | 2606 | 55.4 |
| Yes | 1878 | 47.5 | No | 4407 | 81.7 | No | 2603 | 41.0 |
| No | 3632 | 52.5 | Missing | 300 | 3.7 | Missing | 301 | 3.6 |
| Physical activities | | | Having trouble waking up during the night | | | Social activities | | |
| Yes | 3703 | 69.1 | Yes | 860 | 14.2 | Yes | 125 | 3.3 |
| No | 1720 | 30.3 | No | 4350 | 82.1 | No | 5280 | 95.9 |
| Missing | 87 | 0.6 | Missing | 300 | 3.7 | Missing | 105 | 0.8 |
| Current smoker | | | Having trouble waking up too early | | | Gambling for leisure | | |
| Yes | 755 | 17.4 | Yes | 1307 | 24.1 | Yes | 159 | 2.1 |
| No | 4755 | 82.6 | No | 3903 | 72.3 | No | 5188 | 95.8 |
| Current alcohol drinker | | | Missing | 300 | 3.6 | Missing | 163 | 2.1 |
| Yes | 1440 | 29.2 | Having trouble with pain | | | Hangout with friends | | |
| No | 4070 | 70.8 | Yes | 1796 | 32.1 | Yes | 2328 | 52.9 |
| Heart attack, angina, other form of heart disease | | | No | 3413 | 64.2 | No | 3110 | 46.5 |
| Yes | 754 | 12.2 | Missing | 301 | 3.7 | Missing | 72 | 0.6 |
| No | 4756 | 87.8 | Fall in the past 12 months | | | Attend religious services outside the house | | |
| Cancer | | | Yes | 1026 | 19.1 | Yes | 4072 | 78.5 |
| Yes | 48 | 0.7 | No | 4484 | 80.9 | No | 1438 | 21.5 |
| No | 5462 | 99.3 | | | | Attend religious activities outside the house | | |
| Cerebrovascular disease | | | | | | Yes | 1706 | 25.2 |
| Yes | 323 | 5.6 | | | | No | 3804 | 74.8 |
| No | 5187 | 94.4 | | | | Perceived social support | | |
| High blood pressure | | | | | | Yes | 4409 | 81.4 |
| Yes | 2663 | 45.5 | | | | No | 800 | 14.9 |
| No | 2847 | 54.5 | | | | Missing | 301 | 3.7 |
| Diabetes | | | | | | | | |
| Yes | 662 | 12.4 | | | | | | |
| No | 4848 | 87.6 | | | | | | |

Factors associated with cognitive function in multivariate stepwise linear regression model in LSAHP

| Determinant factors | coefficients | SE | P value |
|---|--------------|-------|---------|
| Intercept | -0.88 | 0.18 | <.0001 |
| Age, years | 0.04 | 0.002 | <.0001 |
| Female vs. male | 0.21 | 0.04 | <.0001 |
| Level of education | | | |
| Primary or less vs. secondary, high school and vocational | 0.55 | 0.04 | <.0001 |
| College and above vs. secondary, high school and vocational | -0.30 | 0.07 | <.0001 |
| Current smoker | 0.17 | 0.04 | 0.0002 |
| Heart attack, angina, other form of heart disease | -0.26 | 0.05 | <.0001 |
| Cancer | -0.69 | 0.19 | 0.0004 |
| Cerebrovascular disease | 0.18 | 0.07 | 0.011 |
| High blood pressure | -0.27 | 0.03 | <.0001 |
| Diabetes | 0.08 | 0.05 | 0.109 |
| Sleep satisfaction | | | |
| Sleep satisfaction vs. not satisfy | 0.07 | 0.05 | 0.170 |
| Don't know vs. not satisfy | -0.63 | 0.11 | <.0001 |
| Having trouble falling asleep vs. no trouble | -0.11 | 0.06 | 0.064 |
| Having trouble waking up at during the night vs. no waking up | -0.15 | 0.06 | 0.009 |
| Having trouble waking up too early vs. no waking up too early | 0.20 | 0.05 | <.0001 |
| Having trouble with pain | 0.25 | 0.04 | <.0001 |
| Feeling lonely vs. no | 0.22 | 0.06 | 0.0002 |
| Feeling happy vs. no | -0.31 | 0.04 | <.0001 |
| Social activities vs no activities | 0.57 | 0.09 | <.0001 |
| Gambling for leisure vs. no gambling | 0.14 | 0.11 | 0.199 |
| Hangout with friends vs no hangout | -0.15 | 0.03 | <.0001 |
| Attend religious services outside the house vs. no | -0.13 | 0.04 | 0.001 |
| Attend religious activities outside the house vs. no | -0.08 | 0.04 | 0.045 |
| Perceived social support vs. no support | -0.15 | 0.05 | 0.001 |

Associated factors with SPMSQ score: Philippines

- Positive

- Age in years
- Female
- Current smoker
- Cerebrovascular disease
- Waking up too early
- Pain
- Feeling lonely
- Social activities

- Negative

- Education
- Heart diseases
- Cancer
- Hypertension
- Waking up during the night
- Happy
- Hangout with friends
- Attend religious activities
- Perceived social support

Distribution of demographic, lifestyle, health and social characteristics of LSAHV respondents

| Variables (N=5629) | N | % or Mean | Variables (N=5629) | N | % | Variables (N=5629) | N | % or Mean |
|---|------|-----------|---|------|------|---|------|-----------|
| Age, years | | 70.2 | At least one of IADL limitation | | | Social activities | | |
| SPMSQ score | | 1.30 | Yes | 1695 | 26.6 | Yes | 660 | 11.7 |
| Sex | | | No | 3934 | 73.4 | No | 4664 | 82.2 |
| Male | 2435 | 43.7 | Sleep satisfaction | | | Missing | 305 | 6.1 |
| Female | 5674 | 56.3 | Yes | 3084 | 53.7 | Gambling for leisure | | |
| Level of education | | | No | 1690 | 31.4 | Yes | 420 | 8.0 |
| Primary or less | 3064 | 55.0 | Don't know | 485 | 9.5 | No | 4783 | 83.9 |
| Secondary, high school and vocational | 2113 | 37.1 | Missing | 370 | 5.4 | Missing | | 8.1 |
| College and above | 383 | 7.0 | Having trouble falling asleep | | | Hangout with friends | | |
| Missing | 70 | 0.9 | Yes | 1346 | 25.2 | Yes | 3500 | 63.0 |
| Current working status | | | No | 3960 | 70.5 | No | 1977 | 34.3 |
| Yes | 1615 | 34.7 | Missing | 323 | 4.4 | Missing | 152 | 2.7 |
| No | 4006 | 65.2 | Having trouble waking up during the night | | | Attend religious services outside the house | | |
| Missing | 8 | 0.1 | Yes | 1475 | 26.3 | Yes | 472 | 8.0 |
| Physical activities | | | No | 3830 | 69.3 | No | 5092 | 91.0 |
| Yes | 2091 | 38.2 | Missing | 324 | 4.4 | Missing | 65 | 1.0 |
| No | 3221 | 55.9 | Having trouble waking up too early | | | Attend religious activities outside the house | | |
| Missing | 317 | 6.0 | Yes | 1289 | 23.4 | Yes | 829 | 13.5 |
| Current smoker | | | No | 4002 | 72.1 | No | 4721 | 85.0 |
| Yes | 778 | 16.2 | Missing | 338 | 4.5 | Missing | 79 | 1.5 |
| No | 4733 | 82.0 | Having trouble with pain | | | Perceived social support | | |
| Missing | 118 | 1.8 | Yes | 2079 | 38.6 | Yes | 4645 | 84.1 |
| Current alcohol drinker | | | No | 3382 | 58.5 | No | 438 | 7.7 |
| Yes | 1150 | 22.7 | Missing | 168 | 2.9 | Missing | 546 | 8.3 |
| No | 4325 | 74.5 | Fall in the past 12 months | | | | | |
| Missing | 154 | 2.8 | Yes | 454 | 7.9 | | | |
| Heart attack, angina, other form of heart disease | | | No | 5080 | 90.2 | | | |
| Yes | 622 | 11.4 | Missing | 95 | 1.9 | | | |
| No | 5007 | 88.6 | Feeling depress | | | | | |
| Cancer | | | Yes | 48 | 0.8 | | | |
| Yes | 80 | 1.3 | No | 5179 | 92.7 | | | |
| No | 5549 | 98.7 | Missing | 402 | 6.5 | | | |
| Cerebrovascular disease | | | Feeling lonely | | | | | |
| Yes | 244 | 4.2 | Yes | 112 | 1.8 | | | |
| No | 5385 | 95.8 | No | 5000 | 89.0 | | | |
| High blood pressure | | | Missing | 517 | 9.2 | | | |
| Yes | 2311 | 38.6 | Feeling happy | | | | | |
| No | 3318 | 61.4 | Yes | 1296 | 23.4 | | | |
| Diabetes | | | No | 3776 | 67.0 | | | |
| Yes | 532 | 8.2 | Missing | 557 | 9.7 | | | |
| No | 5097 | 91.8 | | | | | | |

Factors associated with cognitive function in multivariate stepwise linear regression model in LSAHV

| Determinant factors | coefficients | SE | P value |
|---|--------------|------|---------|
| Intercept | 0.20 | 0.17 | 0.230 |
| Age, years | 0.01 | 0.00 | <.0001 |
| Female vs. male | 0.39 | 0.04 | <.0001 |
| Level of education | | | |
| Primary or less vs. secondary, high school and vocational | 0.66 | 0.03 | <.0001 |
| College and above vs. secondary, high school and vocational | -0.21 | 0.06 | 0.001 |
| Current working status vs. not working | -0.05 | 0.03 | 0.120 |
| Physical activities vs. no activity | -0.35 | 0.03 | <.0001 |
| Current smoker | 0.07 | 0.05 | 0.130 |
| Current alcohol drinker | 0.06 | 0.04 | 0.195 |
| High blood pressure | 0.05 | 0.03 | 0.122 |
| Diabetes | -0.09 | 0.06 | 0.111 |
| At least one of IADL limitation vs. no limitation | 0.40 | 0.04 | <.0001 |
| Sleep satisfaction | | | |
| Satisfy vs. not satisfy | -0.20 | 0.04 | <.0001 |
| Don't know vs. not satisfy | -0.12 | 0.06 | 0.039 |
| Having trouble falling asleep vs. no trouble | -0.27 | 0.06 | <.0001 |
| Having trouble waking up during the night vs. no waking up | 0.16 | 0.06 | 0.003 |
| Having trouble waking up too early vs. no waking up too early | 0.08 | 0.06 | 0.171 |
| Fall in the past 12 months vs. no fall | 0.10 | 0.06 | 0.070 |
| Feeling depress vs. no | 0.67 | 0.17 | <.0001 |
| Gambling for leisure vs. no gambling | 0.10 | 0.06 | 0.074 |
| Hangout with friends vs no hangout | -0.10 | 0.03 | 0.001 |
| Attend religious services outside the house vs. no | 0.12 | 0.06 | 0.054 |
| Attend religious activities outside the house vs. no | 0.24 | 0.05 | <.0001 |
| Perceived social support vs. no support | -0.22 | 0.05 | <.0001 |

Associated factors with SPMSQ score: Viet Nam

- Positive

- Age in years
- Female
- IADL limitation
- Feeling depressed
- Attend religious activities

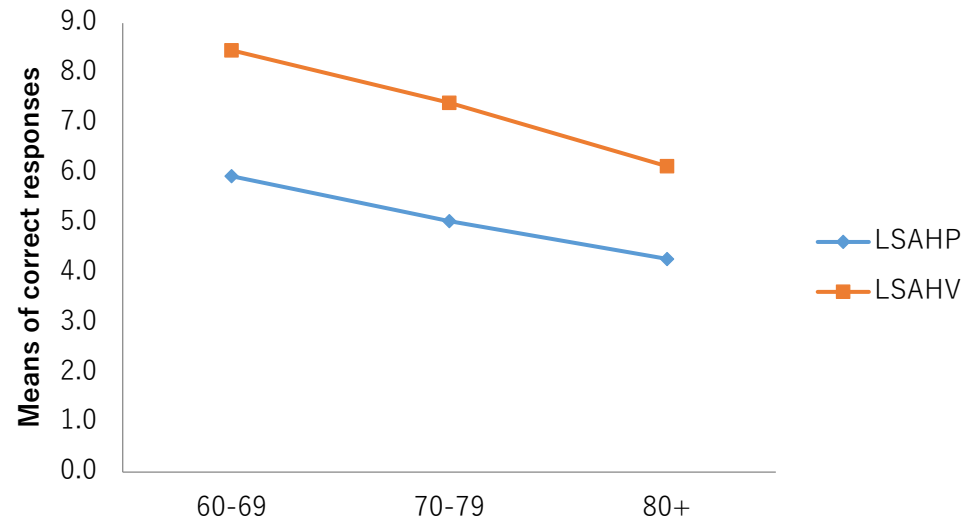
- Negative

- Education
- Physical activities
- Satisfied with sleep
- Waking up during the night
- Hangout with friends
- Perceived social support

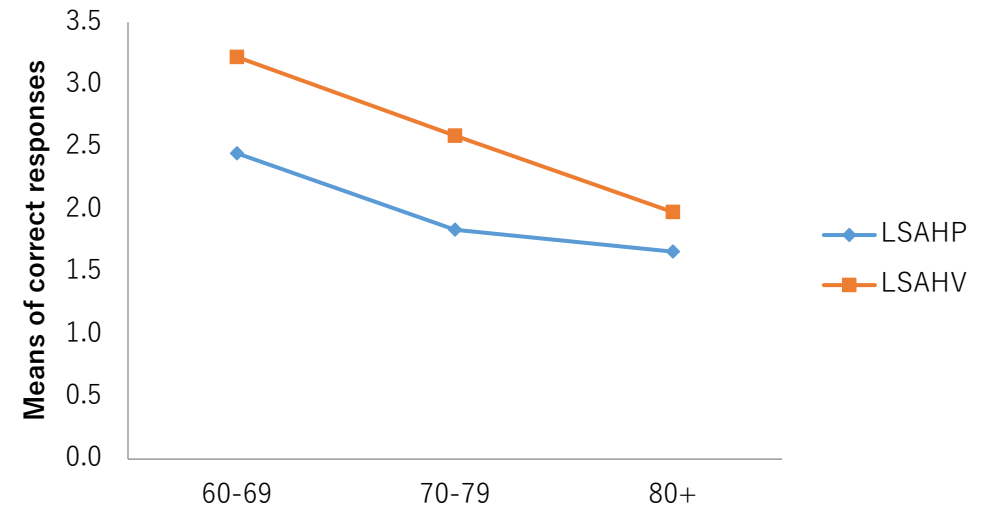
Means of correct responses in episodic memory score and working memory (serial 7s)
by age group and country

| | LSAHP | | | LSAHV | | | p for difference |
|---|-------|-------------|-----|-------|-------------|-----|---------------------|
| | Mean | 95% CL mean | | Mean | 95% CL mean | | |
| Cognitive Measures | | | | | | | |
| Episodic memory score (immediate and delayed word recall), number correct | | | | | | | |
| 60-69 | 5.9 | 5.8 | 6.0 | 8.5 | 8.3 | 8.6 | <.0001 |
| 70-79 | 5.0 | 4.9 | 5.1 | 7.4 | 7.2 | 7.6 | <.0001 |
| 80+ | 4.3 | 4.1 | 4.4 | 6.1 | 5.9 | 6.4 | <.0001 |
| | | | | | | | |
| Working memory (serial 7s), number correct | | | | | | | |
| 60-69 | 2.5 | 2.4 | 2.5 | 3.2 | 3.2 | 3.3 | <.0001 |
| 70-79 | 1.8 | 1.8 | 1.9 | 2.6 | 2.5 | 2.7 | <.0001 |
| 80+ | 1.7 | 1.6 | 1.8 | 2.0 | 1.9 | 2.1 | <.0001 |

Episodic memory score



Working memory (serial 7s)



Discussion

- Cognitive functioning of older adults in Viet Nam seems to be better than older adults in the Philippines.
- For both countries
 - Age is risk factor of lower cognitive functioning.
 - Female is associated with lower cognitive functioning.
 - Those with higher education have higher cognitive functioning.
 - Hang out with friends and perceived social support are associated with higher cognitive functioning.
 - Few factors show inconsistent results on association.

Discussion--continued

- We hope to be able to identify those with dementia using survey instruments.
- We also hope to be able to identify those with MCI/CIND to prevent or delay to become demented.
- Policy implication

Projected number of older adults with dementia

Unit: Thousand

| | Philippines | | Viet Nam | |
|---------|-------------|------|----------|------|
| Year | 2025 | 2050 | 2025 | 2050 |
| Males | 165 | 402 | 125 | 358 |
| Females | 277 | 786 | 403 | 950 |

Limitation

- Both SPMSQ and TICS are not validated in both countries.
- Cross-sectional data
- Immediate word recall/Delayed word recall: number of syllables in words used

Next step

- Conducting 2nd survey once the Covid-19 pandemic are under control in both countries.
- Examine the effects of degree of cognitive functioning on physical functioning and mortality
- Examine the effects of Covid-19 pandemic (including preventive measures such as staying at home) on mental health and physical functioning among older adults

Thank you

<https://www.duke-nus.edu.sg/care/>

Feedback time!



<https://forms.office.com/r/wuwTVyD1pB>

We are most grateful for your feedback!