



# One ILSI project on healthy aging: the story of a collaboration

**ILSI Branch Collaborators:**  
Southeast Asia, Taiwan, Korea,  
India, Mesoamerica, Argentina



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# How it all started

Mapping of activities across branches

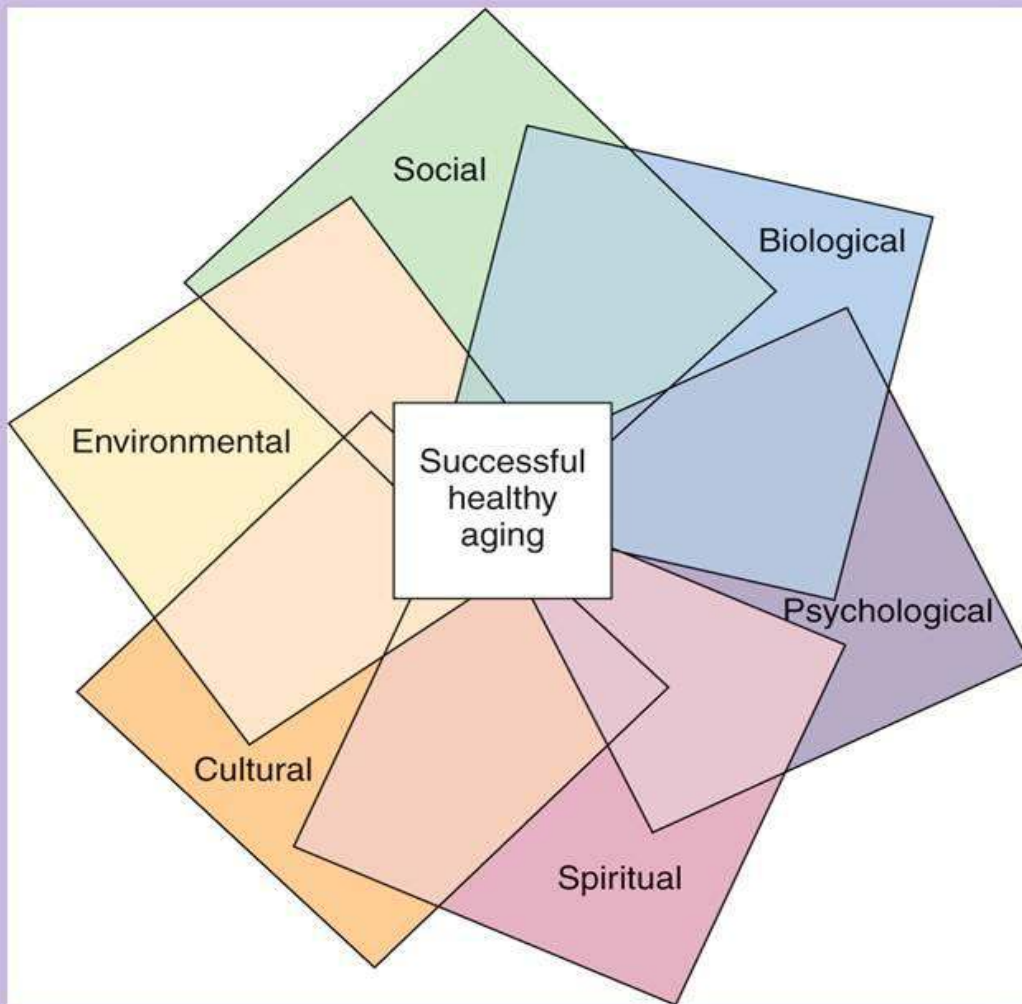


Consensus to focus on healthy aging across countries

- Type of collaboration: **narrative review**
- Rationale: requires the least amount of resources
- Assigned co-leaders: ILSI SEA, ILSI Mexico

- 1<sup>st</sup> step:** drafting of the overall framework for the review  
(iterative process among ILSI SEA, ILSI Mexico, reviewers)
- 2<sup>nd</sup> step:** distribution of the document to interested branches
- 3<sup>rd</sup> step:** group teleconference to discuss and clarify
- 4<sup>th</sup> step:** individual branches develop their own studies,  
identify PIs, draft MOAs (funding of US \$4000/branch)

Overall goal: To identify factors that contribute to healthy vs. pathological ageing



# Objectives

- Describe the various **demographic and cultural definitions of**
  - ageing/elderly
  - healthy ageing
  - **successful ageing**in different countries
- Identify mid-life factors that influence ageing outcomes
- Describe pathways to disability in specific countries
- Identify country-specific best practices that are shown to promote healthy and successful ageing
- Identify gaps, research and policy needs for each country to achieve healthy and successful ageing

# Significance of the review

- Healthy life expectancy (HALE)
  - the number of years that a person at a given age can expect to live in good health (taking into account age-specific mortality, morbidity, functional health status)

## Global Burden of Disease Study 2015

Gap between life expectancy and HALE

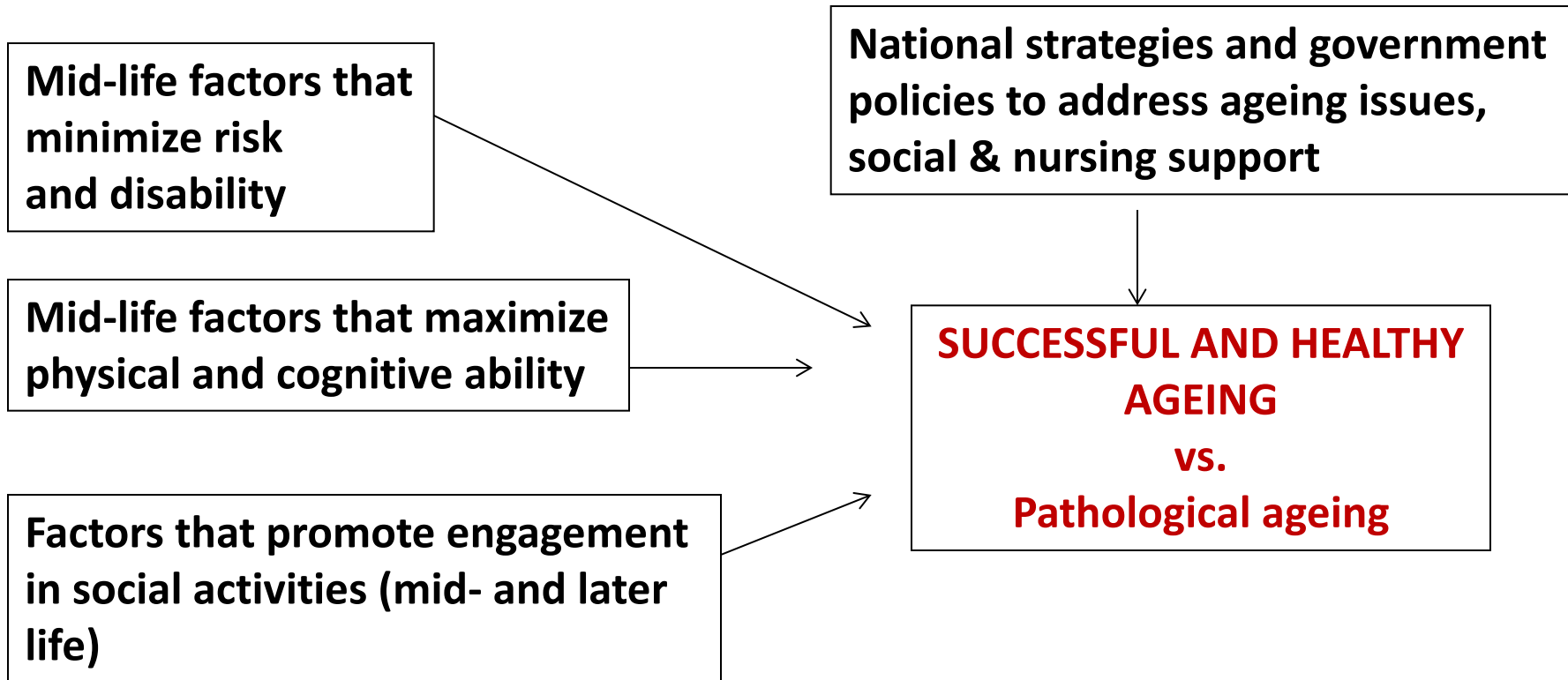
- Men
    - 7.1 y (2005)
    - 8.1 y (2015)
  - Women
    - 9.4 y (2005)
    - 10.0 y (2015)
- (Expansion of morbidity)



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# CONCEPTUAL FRAMEWORK



# WHERE WE ARE NOW

## Southeast Asia - MALAYSIA (completed report)

Collaborator	Objectives	Type of study	Current status
Malaysia – ( <i>Prof. Suzana Shahar, Universiti Kebangsaan Malaysia</i> )	Examine mid-life factors that influence ageing in Malaysia by consolidating and analysing data from the following large-scale studies - LRGS-TUA - Melor study - Mental Health and Quality of Life of Older Malaysians - National Health and Morbidity Survey	Narrative review	Completed country report that covers -Demographic data -Malaysian definition of aging/old/health, healthy & successful aging -Midlife risk factors -Pathways to disability -Best practices -Gaps, recommendations, policy needs



# Southeast Asia - THAILAND (completed data analysis; report in progress)

Collaborator	Objectives	Type of study	Current status
Thailand <i>(Prof. Rossarin Gray, Prof. Sutthida Chaunwan, Mahidol University)</i>	2) Identify, among persons aged 65 and over, those presenting successful ageing defined by a score on functional ability, happy life, and engaging in activities  3) Identify factors associated with healthy ageing	Analysis of cross-sectional data (logistic regression) from latest elderly survey of National Statistics Office	Analysis completed; <ul style="list-style-type: none"> <li>•Factors negatively associated with successful ageing: female sex, older age, smoking, regular alcohol, living with children, education</li> <li>•Factors positively associated: health examination, regular physical activity, regular drinking right amount of clean water, occasional alcohol, regular contact but not living with children, satisfaction with financial status</li> </ul>

# Southeast Asia - THAILAND

Collaborator	Objectives	Type of study	Current status
Thailand ( <i>Prof. Rossarin Gray, Mahidol University</i> )	2) Review mid-life factors contributing to healthy/successful ageing	Scoping review	Results -Review of literature showed that most studies on successful aging in Thailand used subjective measures (eg., older people define themselves) -Only 11 studies found (past 10 yrs)

# Southeast Asia - PHILIPPINES (draft for journal submission being prepared)

Collaborator	Objectives	Type of study	Current status
Prof. Judith Borja (University of San Carlos)	1) Using data spanning 3 decades from the Cebu Longitudinal Health and Nutrition Study (CLHNS), the paper examines <b>evidence of nutrition transition as reflected in changes in food group consumption and diet patterns</b> among CLHNS women participants as they reach older ages. The paper distinguishes secular vs. ageing-related shifts in diet patterns	Descriptive study	Draft for journal submission being prepared

# Southeast Asia - PHILIPPINES

Collaborator	Objectives	Type of study	Current status
Prof. Judith Borja (University of San Carlos)	2) With increasing evidence of diet-associated NCD, the <b>study identifies diet patterns associated with higher NCD risk among CHLNS women.</b> Persistent diet patterns and diet pattern changes over the course of 3 decades of women's adult lives are examined	Correlational study	On-going data analysis

# Taiwan (completed 2 reports)

Collaborator	Objectives	Type of study	Current status
Prof. Meei-Shyuan Lee, <i>School of Public Health, National Defense Medical Center, Taiwan</i>	Summarize the findings on multidimensional mid-life factors that promote healthy ageing from Elderly Nutrition and Health Survey in Taiwan (Elderly NAHSIT).	Review of determinants of mortality from Elderly NAHSIT cohort studies	Completed 2 summary reports (1) Review on determinants of mortality -Overall dietary pattern -Nutritionally related biomedical factors -Socio-economic factors including proximate food system and eating arrangements
Prof. Wen-Harn Pan, <i>Institute of Biomedical Science, Academia Sinica, Taiwan</i>	Find precipitating dietary /nutritional factors for frailty and mild cognitive impairment (MCI)	Analytical epidemiological studies on dietary and nutritional determinants of frailty and MCI, using data from NAHSIT 2013-2015	(2) On dietary pattern/nutrients associated with frailty and MCI.

## Multidimensional determinants of healthy ageing

### ■ Health Status

- Chewing ability
- Better appetite
- Maintenance of a healthy body composition

### ■ Behavior

- Dietary pattern
- Cooking frequency

### ■ Social participation

- Weekly shopping
- Eating with others

## Dietary pattern/nutritional factors associated with frailty



- Predictability of low skeletal muscle mass on mortality.
- Prevalence of frailty increase with older age.
- Elderly people consume less and less calories with age. Quantity issue (=lowered dietary intake level) is crucial for the older TW elders rather than the quality of food consumed.
- Dietary intervention does work!



# **INDIA**

## **(Completed report)**

# Model For Successful Aging

**Project PI - Dr. Seema Puri, Associate Professor & Ms. Majida Shaheen, Research Fellow  
Institute of Home Economics, University of Delhi**



## OBJECTIVES

- 1) Present the broad profile of 60 years and above in India.
- 2) Understand factors affecting healthy ageing including mid life factors that prevent / lead to disease.
- 3) Identify country-specific best practices that are shown to promote healthy and successful ageing .
- 4) Identify gaps, research and policy needs for India to achieve healthy and successful ageing.



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# TYPE OF STUDY

This Is Review Of Published Articles And Government Reports.  
273 Articles And Reports Have Been Studied.

The Report Includes Following Components:

→ **DEMOGRAPHY OF AGEING IN INDIA**

→ **CONCEPTS OF AGEING**

→ **HEALTH AND MORBIDITY STATUS OF INDIAN ELDERLY**

→ **NUTRITIONAL STATUS, PHYSICAL ACTIVITY AND LIFESTYLE OF INDIAN ELDERLY**

→ **MIDLIFE FACTORS THAT INFLUENCE THE AGEING PROCESS:**

The Asian Indian Phenotype, Non- Communicable Diseases, Intrauterine And Perinatal Nutrition, Physical Activity, Overweight/Obesity , Dyslipidaemia

→ **BEST PRACTICES THAT PROMOTE HEALTHY AND SUCCESSFUL AGEING**

→ **IDENTIFY GAPS, RESEARCH AND POLICY NEEDS FOR INDIA TO ACHIEVE HEALTHY AND SUCCESSFUL AGEING**

**The Study has been  
completed**

# HIGHLIGHTS

## Elderly Population

2016

2026

2050

116  
Millions

150  
Millions

323  
Millions

## Characteristics

- Life Expectancy increased to 68 years
- Number of 80 and above increased
- Numbers of Centurions 20,000
- Elderly female are more than elderly males (1022/ 1000)

## Midlife Factors Affecting Ageing

- Lifestyle Approach
- Nutrition, Physical Activity, Lifestyle, Socio-economic environment → Leading To Micronutrient Deficiencies, Overweight & Obesity, Low Immunity, NCDs, Cancer, Arthritis, Osteoporosis

## Research

- Regular Surveys on Health status, Diet , PA, Health Infrastructure, IEC.

# Republic of KOREA

## A Model for Healthy Aging in Korea

### Objectives

- To identify the broad profile of 65 years and above in Korea
- To understand factors affecting healthy ageing including mid life factors that prevent or lead to disease
- To identify Korea-specific best practices that are shown to promote healthy and successful ageing
- To identify gaps, research and policy needs for Korea to achieve healthy and successful ageing

# A Model for Healthy Aging in Korea

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graph TD; A[A Model for Healthy Aging in Korea] --> B[Review of literatures]; A --> C[A focused Review];
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## Review of literatures

**A review** on 224 articles and 9 public reports (*in preparation*)

- Definition of healthy aging
- Demography of aging in Korea
- Description of life style and healthy status
- Identification of multi-dimensional factors that influence aging, including  
nutritional, psychological, socio-economic, physical conditions

## A focused Review

**A focused review** focusing on novel biomarkers in aging (*Submitted*)

- Identification of biological changes in aging
- Identification of novel biomarkers related with physiological status during aging
- Identification of multi-factors that influence and reverse the marker status

# **LATIN AMERICAN BRANCHES**

# ARGENTINA (completed statistics)

Collaborator	Objectives	Type of study	Current status
Dr.Cecile Rausch Herscovici, TESIS Center of Systems Therapies, Buenos Aires, Argentina	Examine the association between cognitive function, dietary intake, and physical exercise in a group of elderly people aged 75 to 90 attending elderly persons' clubs of Buenos Aires.	Observational, cross-sectional	Pilot study In progress. Completion is contingent to obtaining funding.
	Profile of the elderly in Argentina ( $\geq 60$ y)	Statistical data (life expectancy, lifestyle factors, nutrition, health, HH environment, education, income, demographic factors)	Completed

# MESOAMERICA

Colaborator	Objectives	Type of study	Current Status
PhD. Georgina Gómez Salas. Medicine Faculty of the UCR	To collect, identify and analyze relevant nutritional data on factors that influence the ageing process in the population of the Peninsula of Nicoya, Costa Rica.	Data collection, processing, analysis from the population of the Peninsula of Nicoya.	Working progress
PhD. Georgina Gomez Salas. Medicine Faculty of the UCR	To identify factors contributing to good health in the elderly and to create an aging profile for Costa Rica population.	Data recompilation and analysis from the Central America of Populations Center, University of Costa Rica.	Working progress

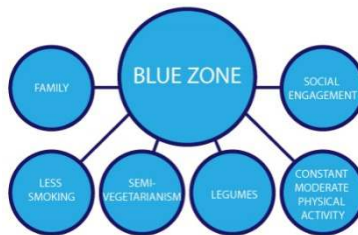


# MESOAMERICA...cont

Colaborators	Objectives	Type of study	Current status
Ana Bonilla, Carolina Cortés, José Manuel Fallas, Fabrice Vaillant, Jessie Usaga and Ana Mercedes Pérez. CITA-UCR	To know if the older populations in the blue zones worldwide have a gut microbiota able to metabolize S-Equol, urolithin and enterolignans	Functional Foods and Bioactive Compounds, experimental analysis	Working progress



**Blue Zone:** a concept used to identify a demographic and/or geographic area of the world where people live measurably longer lives.



Okinawa, Japan | Sardinia, Italy | Loma Linda, US | Nicoya, Costa Rica | Ikaria, Greece





# Next steps

- Publication in a peer-reviewed journal by individual countries/branches
- Compilation of studies into a single document (comparative analysis of findings)
- Submission of compiled document for publication in a peer-reviewed journal

# Difficulties encountered

- A heavier workload (preparation of the framework, coordinating, integration of results into a single manuscript) has to be borne by one or two branches
- **In Thailand, Malaysia**
  - Lack of trained manpower who can do reviews in nutrition

# Difficulties encountered

- **In Argentina**

- National statistics lack data on critical information.
- Obtaining funding for a field study is a huge challenge.

# DIFFICULTIES ENCOUNTERED (ILSI-INDIA)

- **Lack of Nationwide studies focusing on elderly**
- **Data on midlife factors influencing ageing per se were not available.**
- **Most of the data gathered have been deduced from research carried out on NCDs and their risk factors.**
- **Very few studies have been done to investigate the nutritional intakes and physical activity patterns of the Indian elderly. No RDAs for elderly, except for energy as yet.**

# Summary of lessons learned

## I. Planning stage (global level) - steps followed

- Identification of common topic/type of project to be undertaken (outcome of mapping exercise)
- Lead writer/s identified to write the draft proposal/protocol
- Expert reviewers provided feedback to initial drafts of the proposal/framework
- Draft framework distributed and discussed with all participating branches



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# Lessons learned

- **Characteristics of the framework**
  - Serves as a guide for branches to develop their own plans of study
  - Specific enough to provide direction & clear output
  - Broad enough to accommodate diverse priorities/interests of different branches (studies across branches are similar but not identical)



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# Lessons learned

## II. Planning stage (branch level) - steps followed

- Development of criteria for each branch's plan of study
  - Study falls within the general framework/proposal
  - Relevant and useful to the specific country where the study will be done (contributes to body of knowledge for that country)
  - Within the branch's priorities
  - Within the PI's field of interest/expertise
  - Within the available budget of \$4000 per branch

# Lessons learned

## III. Implementation stage (current stage)

- More time is needed to achieve the objectives of the project
  - Some branches started later than others
  - Branches differ in their ability to address difficulties encountered (e.g., financial, manpower)
  - Some PIs have excessive workloads
  - Publishing in a scientific journal takes time



# Challenge ahead

## IV. Collation of manuscripts into a single document

- To be started once reports are completed
- Potential difficulty:
  - Putting the results in review format following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines will be a challenge

# Moving forward

- Healthy aging project will need more time to complete for the ff. reasons:
  - 2 levels of output: 1) individual branch level, 2) global level
  - Difficulties arise that cannot be predicted (e.g., some PIs esp. those in SEA are not very familiar with the PRISMA format for review)
  - Short-term solutions are needed to achieve the long-term goals stated in the framework (e.g. how to assist some PIs to get individual reports published in scientific journals)
  - Still a lot of work ahead to prepare the final compiled document and submit for publication

# Future action

- Need to plan beyond the current healthy aging project
  - what to do next
  - how to do it better

# ACKNOWLEDGEMENTS

- **Dr. Chor San Khoo** (ILSI NA) for providing feedback to initial drafts of the proposal
- **Dr. Guillermo Melendez** (formerly ILSI Mexico) for contributing to development of the proposal
- **All participating ILSI branches**

THANK YOU