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Conflict of Interest Disclosure

This presentation is supported by ILSI, which is funded primarily by its industry members.

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Comparing health indicators across geography: A look at Asia and Latin America

Sofia Amarra R.D., Ph.D.

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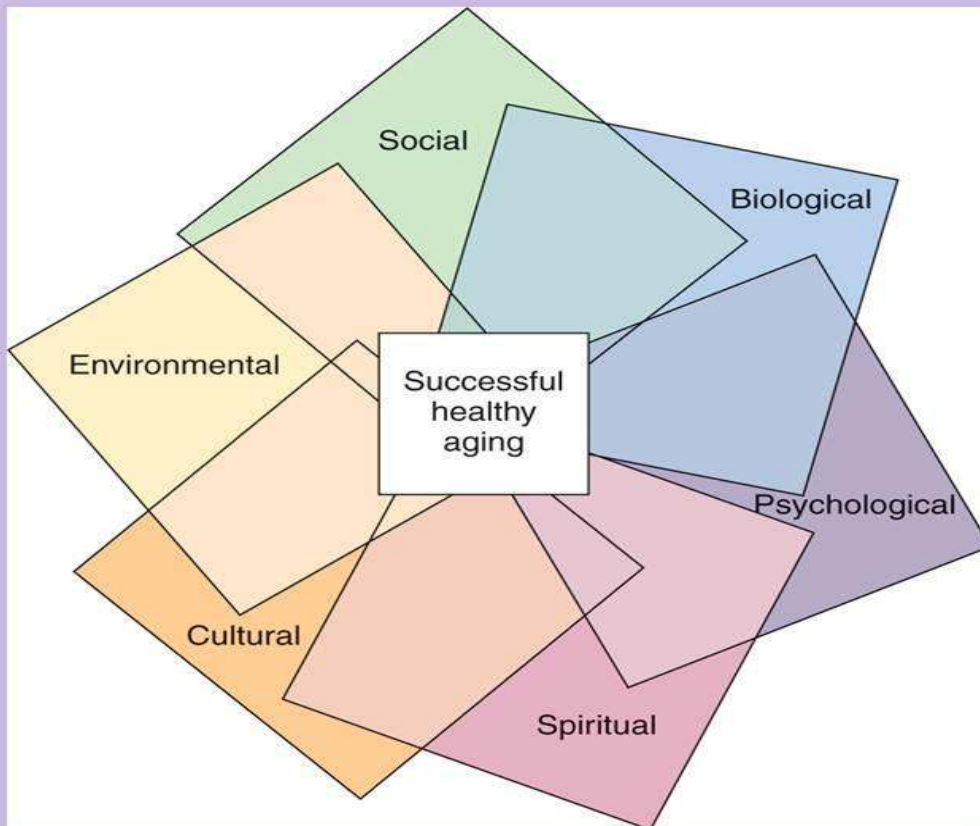
Background

One ILSI Healthy Aging Project

- Collaboration among International Life
  Sciences Institute (ILSI) branches in Asia and
  Latin America

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Overall goal: To identify mid-life factors that contribute to healthy vs. pathological aging (Asia & Latin America)

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Objective of the presentation

- Provide a background for Asian and Latin American countries in terms of

  – Selected indicators for health and aging that describe the status of the adult population

  – Disease causes of **mortality**

  – Causes of **disability**

  – Risk factors for disease & disability (metabolic, lifestyle, dietary, environmental etc.)

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Countries included

- **High income Asia Pacific**
  - Brunei, Japan, Singapore, South Korea

- **South & East Asia**
  - India, China, Taiwan

- **ASEAN countries**
  - Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand, Vietnam

Total = 15 countries

- **Central Latin America**
  - Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Venezuela

- **Andean Latin America**
  - Bolivia, Ecuador, Peru

- **Tropical Latin America**
  - Brazil, Paraguay

- **Southern Latin America**
  - Argentina, Chile, Uruguay

Total = 17 countries

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I. POPULATION AGING INDICATORS
Comparison of Asia & Latin America

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Asia Region

Percentage Distribution of Population Aged 65 and Over by Region: 2015 and 2050

2015

Northern America/ Oceania 9.5%

Africa 6.6%

Latin America and the Caribbean 7.6%

Europe 21.0%

Asia 55.3%

2050

Northern America/ Oceania 6.6%

Africa 9.6%

Latin America and the Caribbean 8.9%

Europe 12.6%

Asia 62.3%
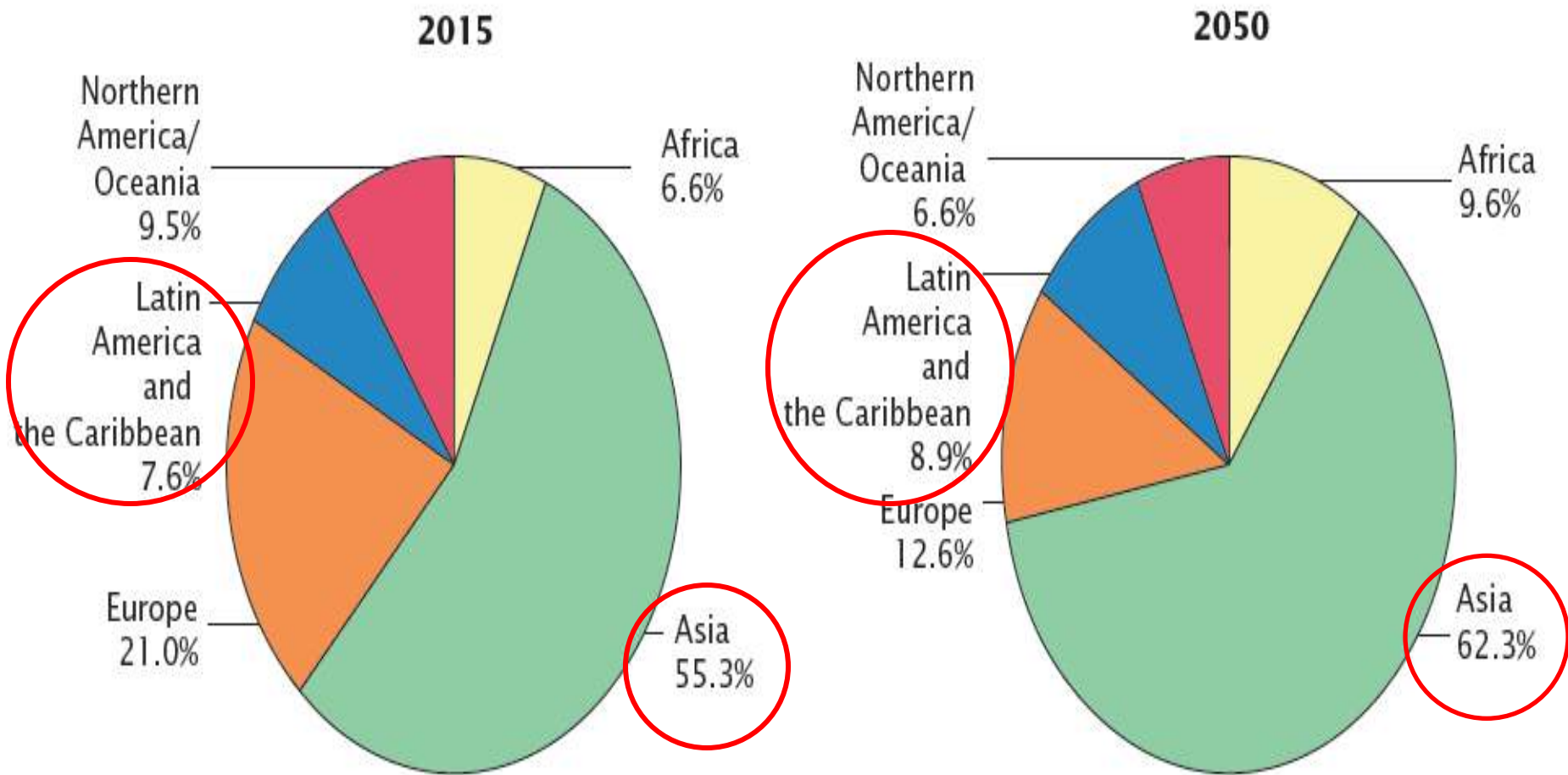
Source: U.S. Census Bureau, 2013; International Data Base.

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Indicator

- **Measurement or value that gives an idea of what something (or a situation) is like**

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Aging indicators

- Median age = The age that divides a population into 2 groups of the same size, such that half of the population is younger than this age, and the other half older
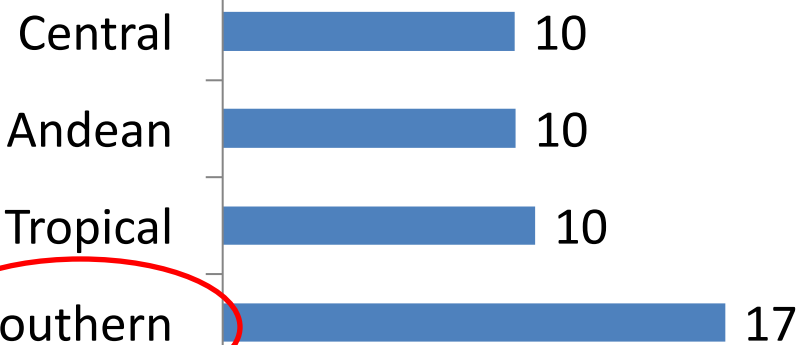
- Percent of population aged 60+ years

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Population aging indicators

Latin America — 28

Asia — 32

Average median age (years), 2015

Latin America — 11

Asia — 13

% of population aged 60+ years, 2015 (average)

Source: Computed from estimates in World Population Ageing 2015

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% of population aged 60+ years by region

Latin America

Region	Value
Central	10
Andean	10
Tropical	10
Southern	17

Asia

Region	Value
ASEAN countries	9
South & East Asia	14
High income Asia Pacific	19

Average % of population aged 60+ years

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Population aging indicators by region – median age (years)

Average median age (years)

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Summary of aging indicators

Asia

– More advanced aging status

- Median age
- % of population aged 60 y and above

– High income Asia Pacific countries oldest (Brunei, Japan, Singapore, South Korea)

Latin America

– Younger population than Asia

– Oldest are Southern Latin American countries (Argentina, Chile, Uruguay)

– Youngest are Andean Latin American countries (Bolivia, Ecuador, Peru)

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II. WHO HEALTH INDICATORS
Comparison of Asia & Latin America

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Indicators for health status

Life expectancy at birth

– The average number of years that a newborn could expect to live if he or she were to pass through life exposed to the sex- and age-specific death rates prevailing at the time of his or her birth, for a specific year, in a given country

Global average in 2015: 71.5 y

Healthy life expectancy at birth (HALE) – indicator of overall health of a population

• the average equivalent **number of years of full health** that a newborn could expect to live if they were to pass through life subject to age-specific death rates and average age-specific levels of health states for a given period

• Global average in 2015: 63.1 years

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HALE and Life Expectancy at Birth in Asia and Latin America, 2015 (years)

■ Latin America
■ Asia

males — 65.0 / 63.8

females — 68.7 / 68.0

HEALTHY LIFE EXPECTANCY AT BIRTH 2015 (average)

males — 73.5 / 71.6

females — 78.9 / 77.6

LIFE EXPECTANCY AT BIRTH 2015 (average)
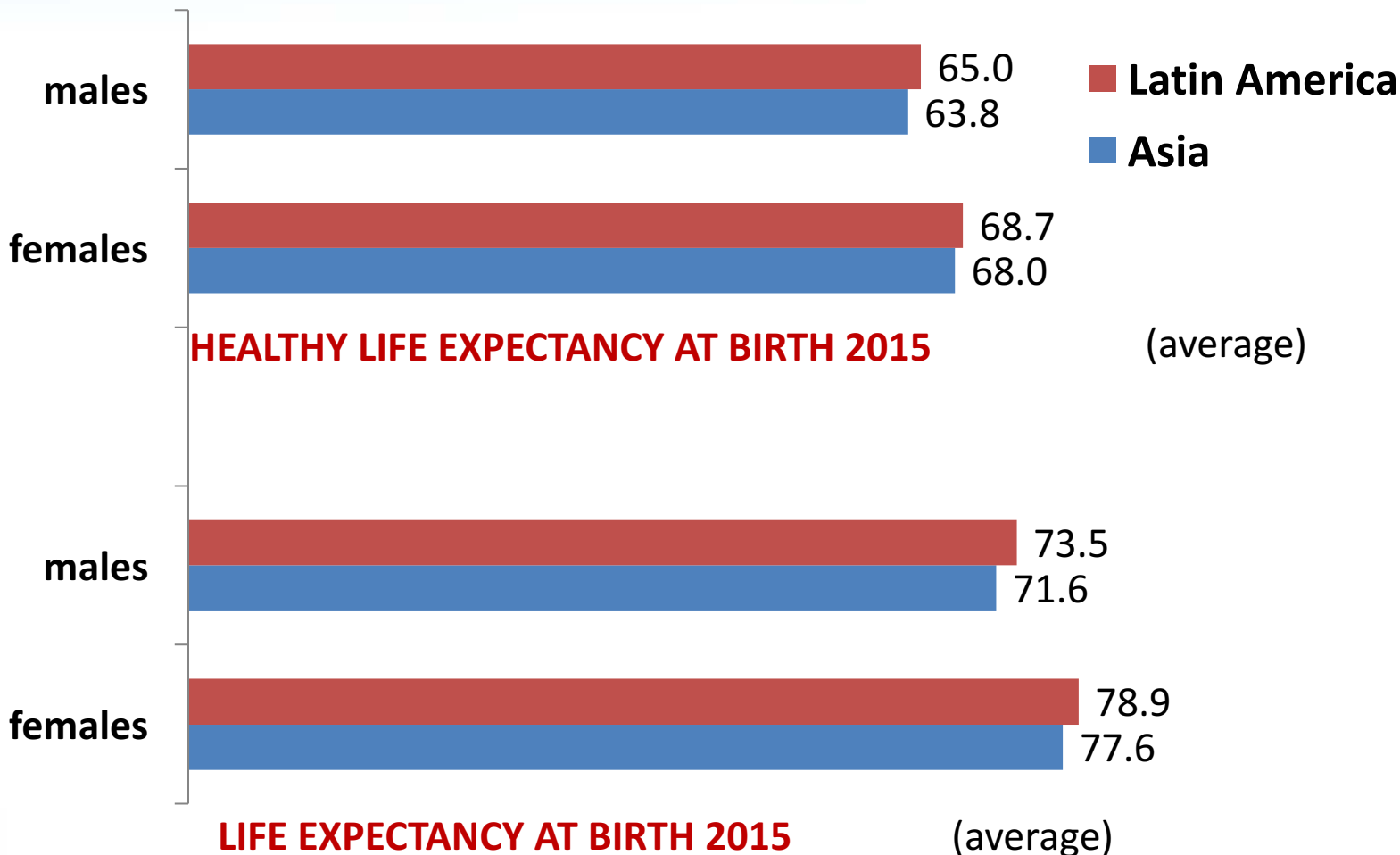
Source: Computed from World Health Statistics 2016

HALE and Life Expectancy at Birth in Asian countries, 2015 (years)

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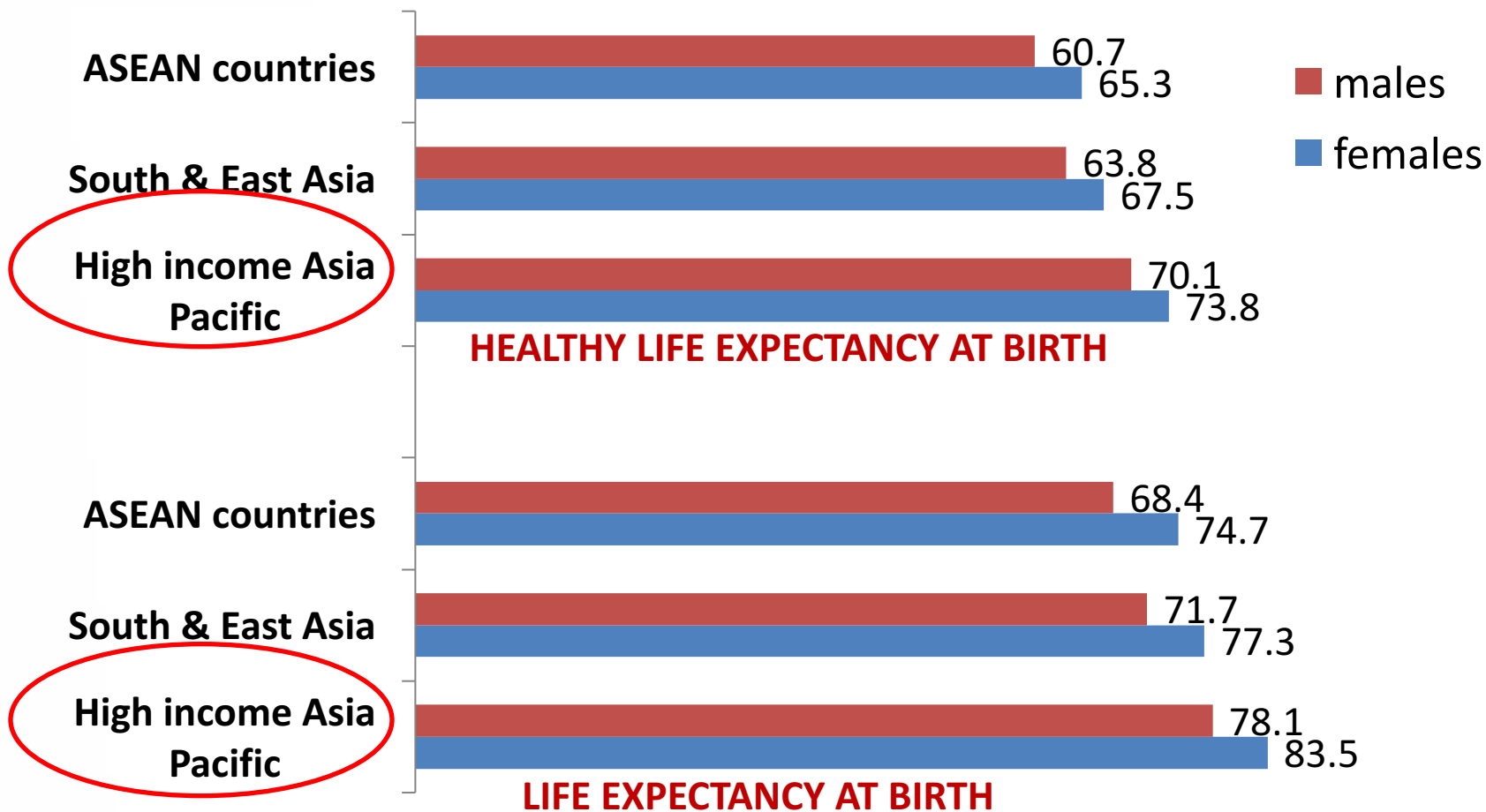
HALE and Life expectancy at Birth in Latin American countries, 2015 (years)

HEALTHY LIFE EXPECTANCY AT BIRTH

Tropical — males 62.9, females 66.9
Andean — males 65.4, females 67.9
Central — males 64.9, females 68.6
Southern — males 66.3, females 70.9

LIFE EXPECTANCY AT BIRTH

Tropical — males 71.4, females 77.6
Andean — males 74.4, females 78.0
Central — males 73.4, females 79.0
Southern — males 74.2, females 80.8

males
females

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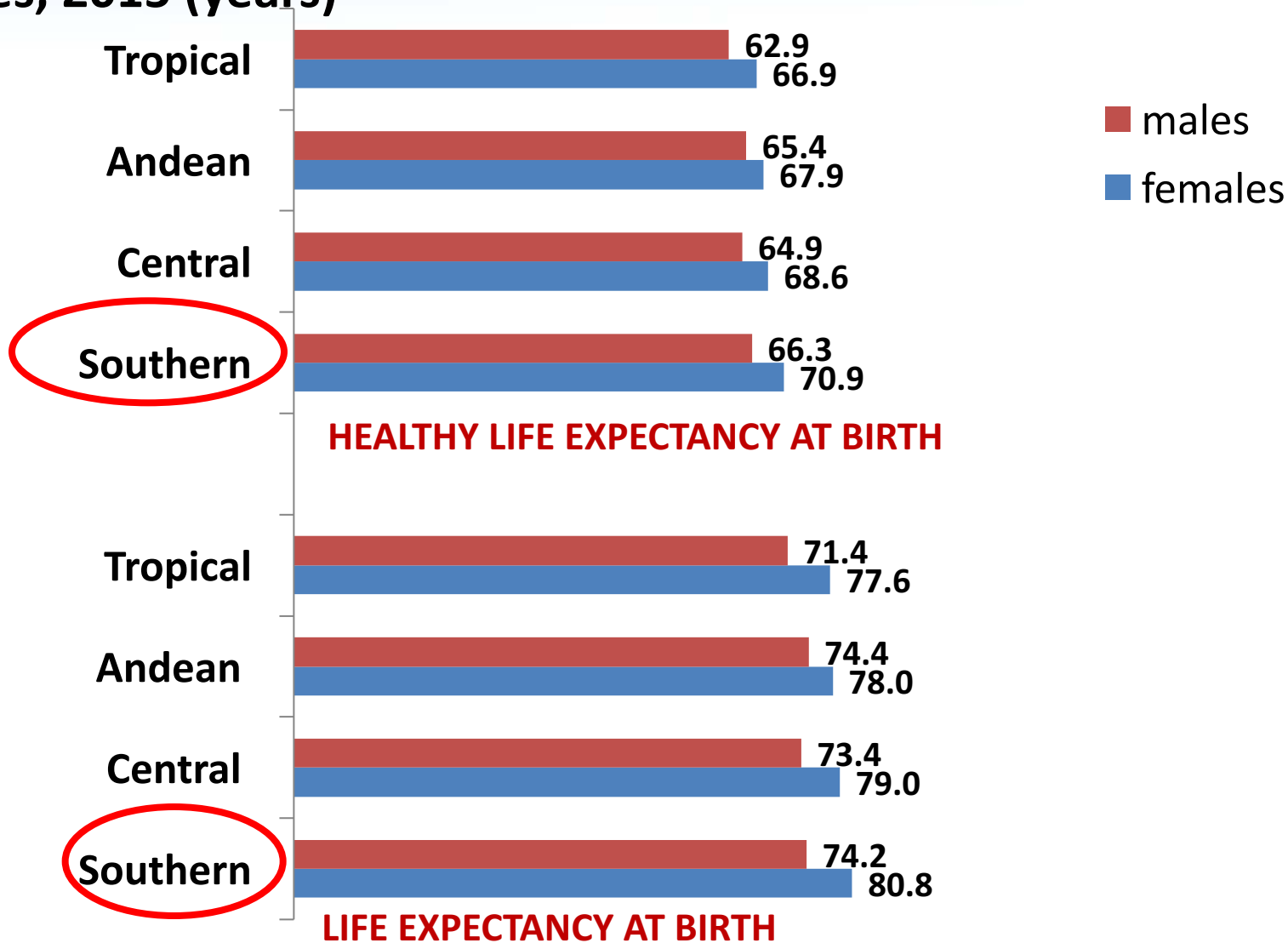
HALE IN SPECIFIC ASIAN COUNTRIES, 2015

Healthy life expectancy at birth, years
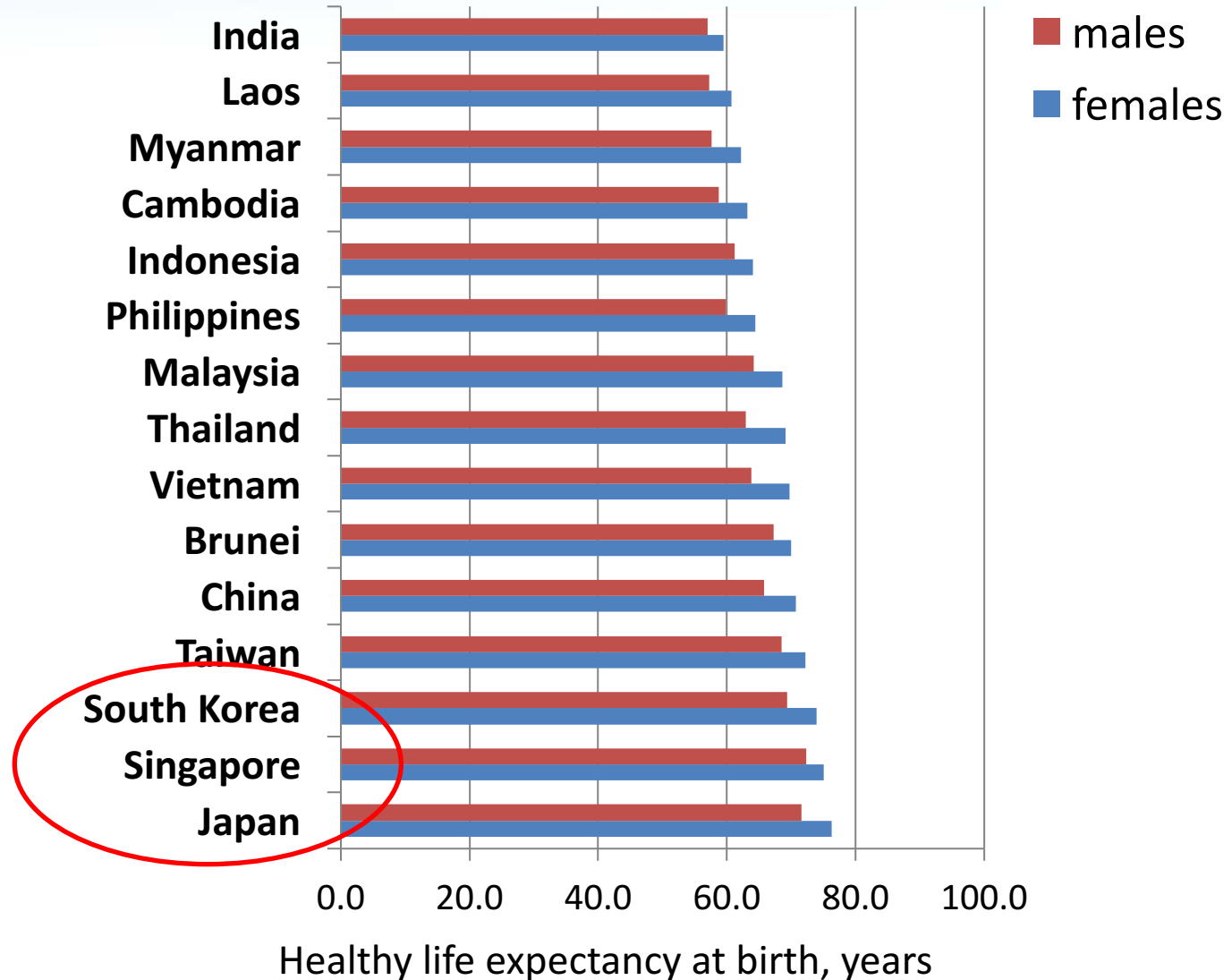
HALE IN SPECIFIC LATIN AMERICAN COUNTRIES, 2015

Healthy life expectancy at birth, years

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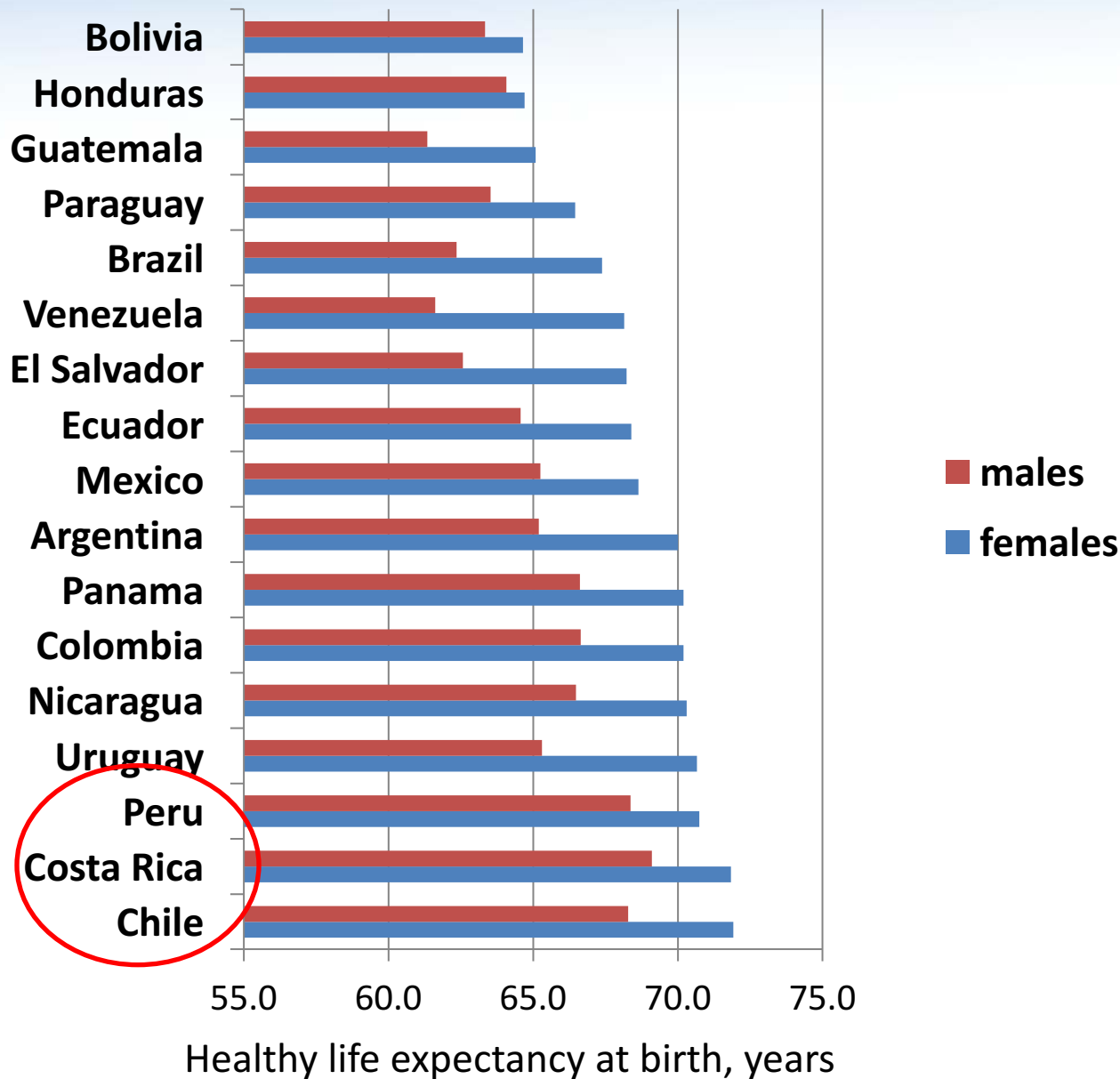
Indicators for health status

Mortality between 30 & 70 years of age from cardiovascular disease, cancer, diabetes, or chronic respiratory diseases

– Unconditional probability of dying between the exact ages of 30 and 70 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases

Probability of dying between exact ages 30 and 70 from CVD, cancer, diabetes, or chronic respiratory diseases, Latin America & Asia, 2012
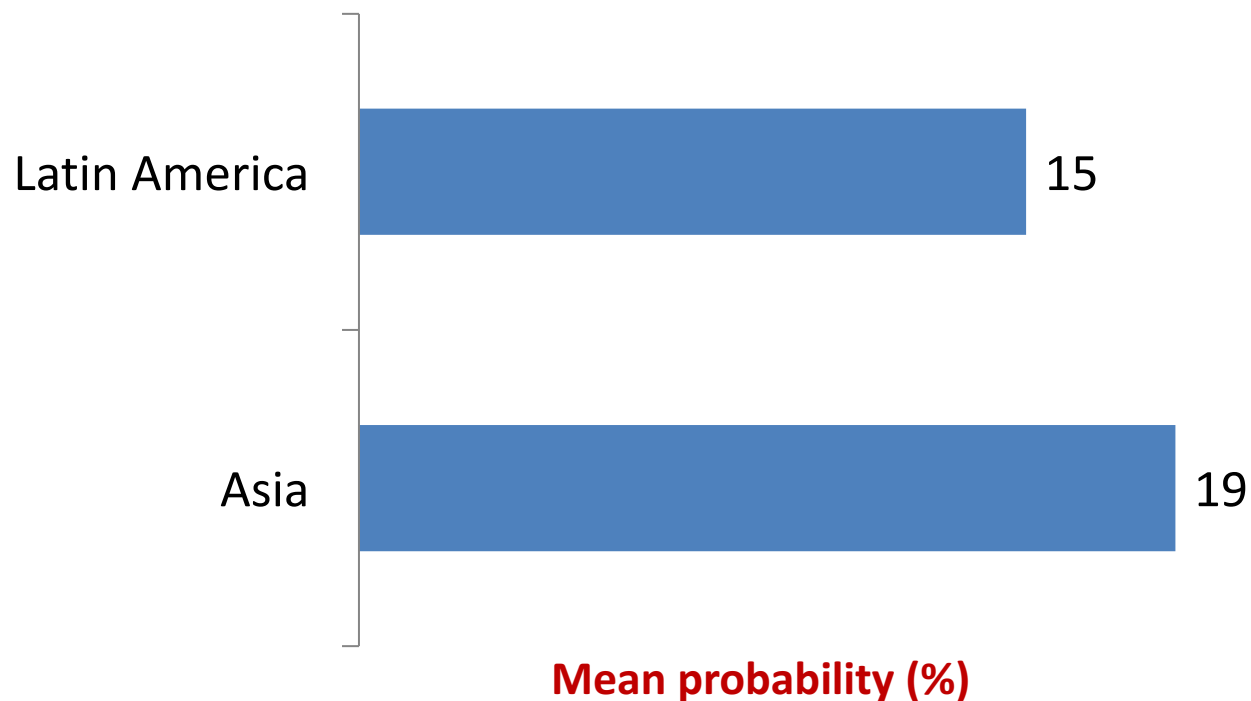
Source: Computed from World Health Statistics 2016

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Probability of dying between exact ages 30 and 70 from CVD, cancer, diabetes, or chronic respiratory disease, 2012 (by region)
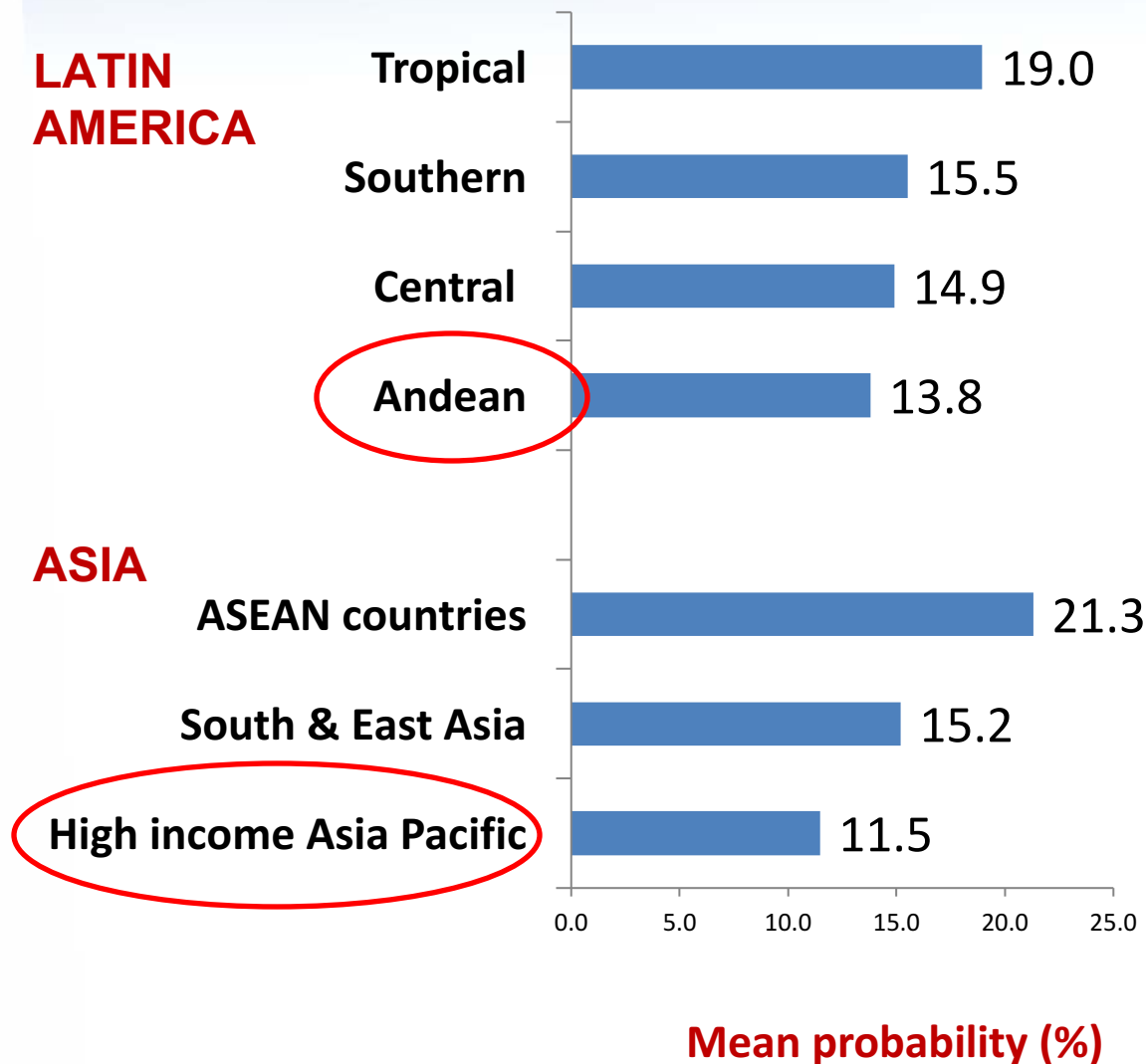
Mean probability (%)

Probability of dying between exact ages 30 and 70 from CVD, cancer, diabetes, or chronic respiratory disease in selected Asian countries, 2012
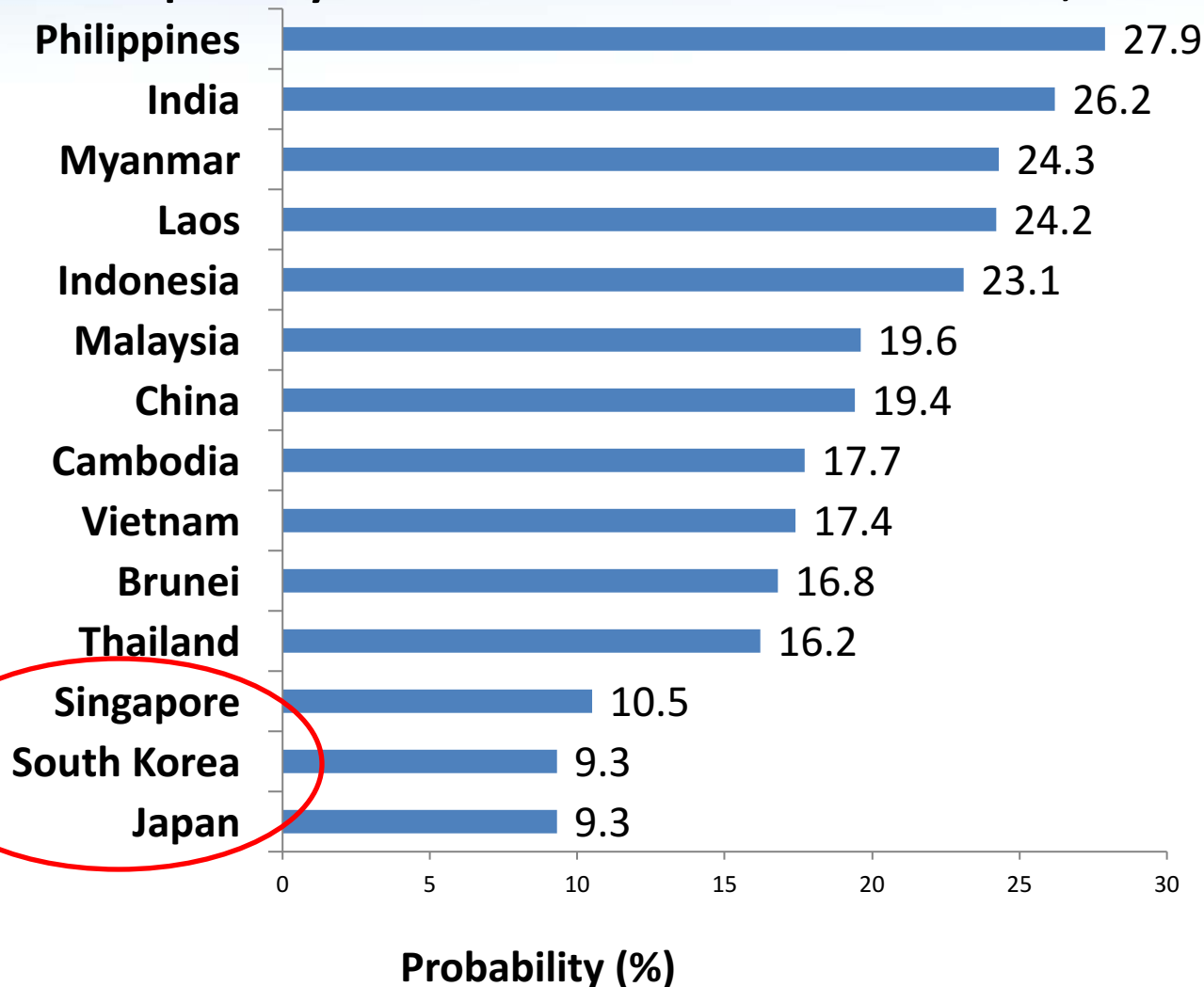
Country	Probability (%)
Philippines	27.9
India	26.2
Myanmar	24.3
Laos	24.2
Indonesia	23.1
Malaysia	19.6
China	19.4
Cambodia	17.7
Vietnam	17.4
Brunei	16.8
Thailand	16.2
Singapore	10.5
South Korea	9.3
Japan	9.3

Probability (%)

Probability of dying between exact ages 30 and 70 from CVD, cancer, diabetes, or chronic respiratory disease in Latin American countries, 2012

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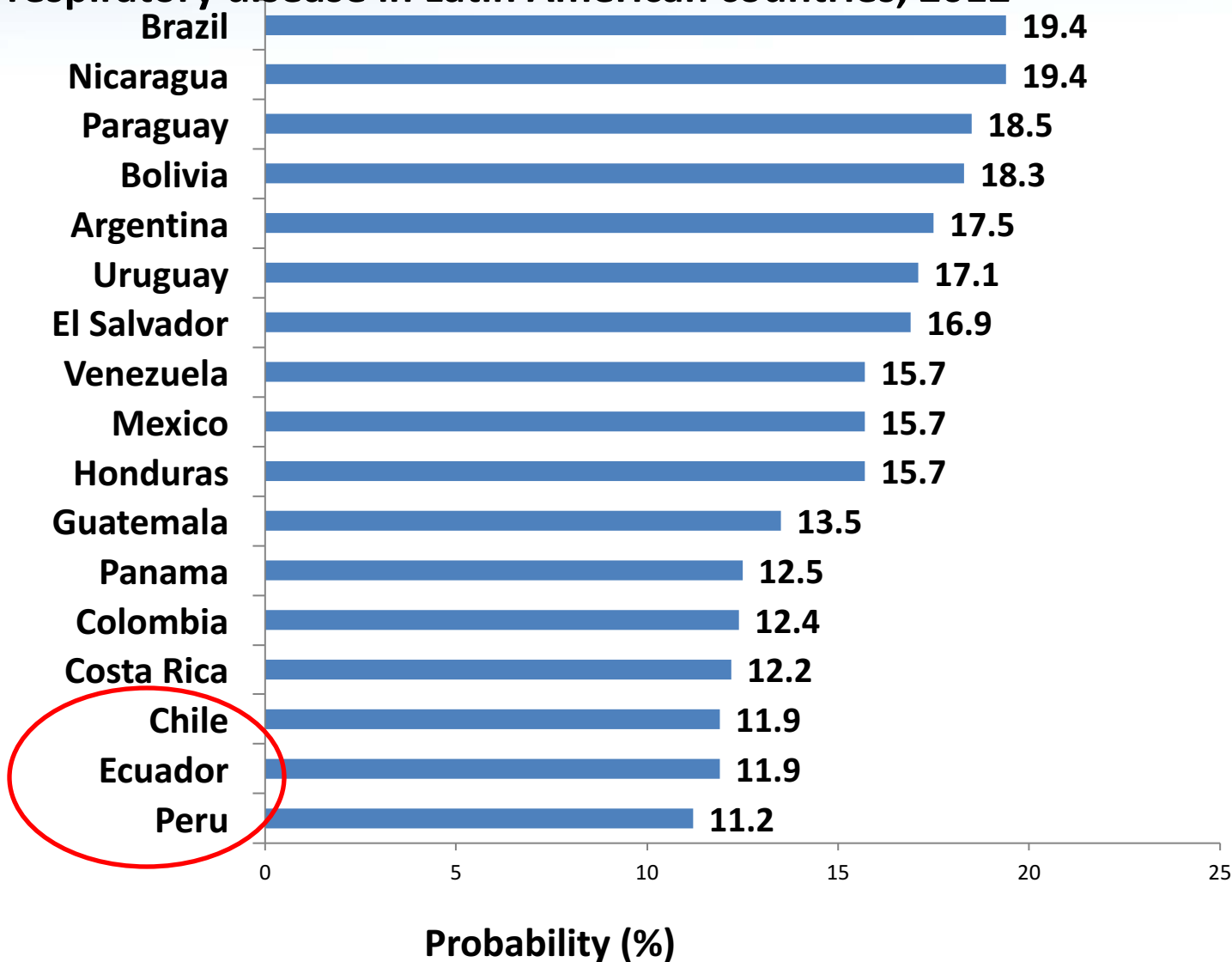
III. GLOBAL BURDEN OF DISEASE (GBD) 2015 RESULTS
Comparison of Asia & Latin America

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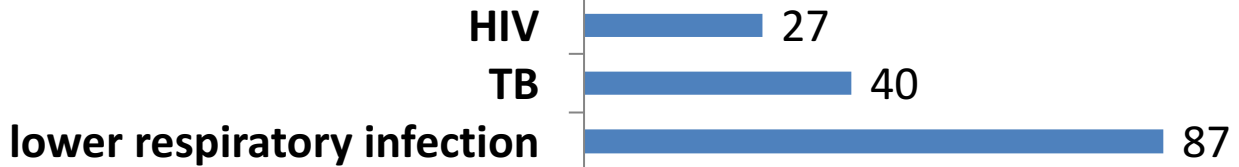
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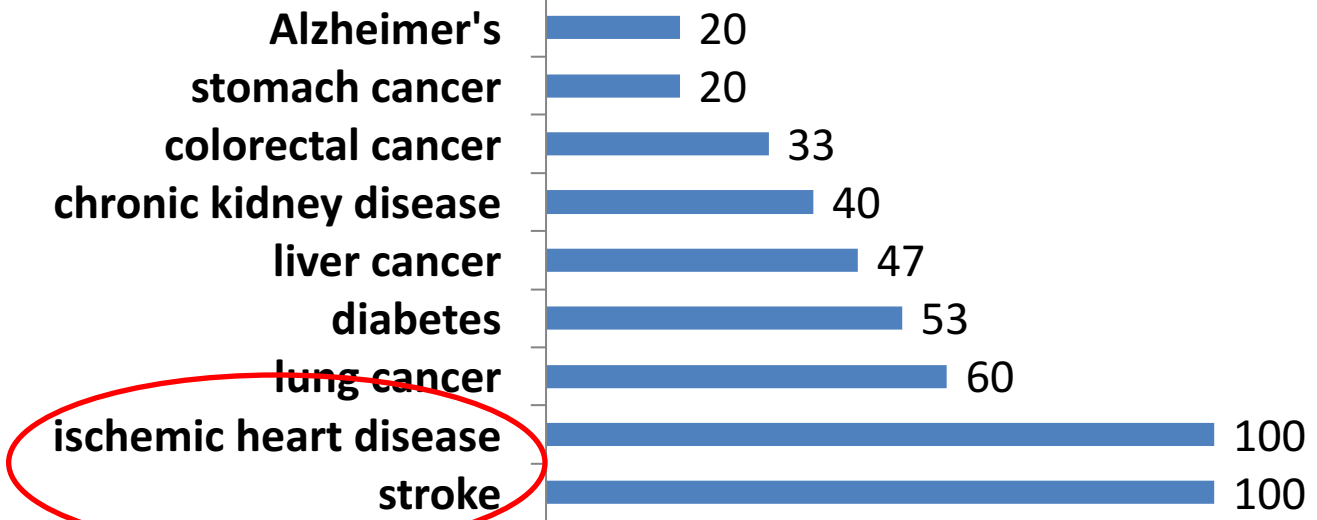
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Global Burden of Disease Study (GBD)

- Worldwide collaborative effort to measure the impact of health problems on people

- Estimates the burden of premature death and disability in a population caused by more than 300 diseases and injuries in 195 countries

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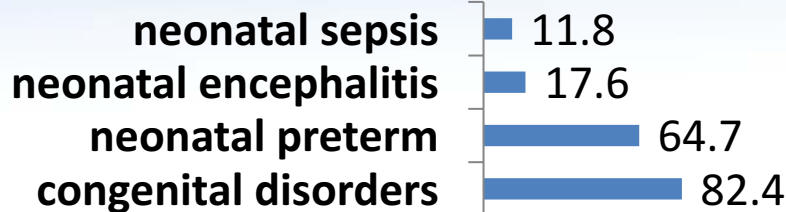Sheraton Buenos Aires Hotel & Convention Center

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- Data from the 2015 GBD studies were tallied for Asian and Latin American countries
  - Disease causes of mortality
  - Causes of disability
  - Risk factors for disease & disability (metabolic, lifestyle, dietary, environmental)

Disease causes of mortality in selected Asian countries, 2015

Neonatal causes

- neonatal encephalitis — 27
- neonatal preterm birth complications — 33
- congenital disorders — 53

Infectious disease

- HIV — 27
- TB — 40
- lower respiratory infection — 87

NCDs

- Alzheimer's — 20
- stomach cancer — 20
- colorectal cancer — 33
- chronic kidney disease — 40
- liver cancer — 47
- diabetes — 53
- lung cancer — 60
- ischemic heart disease — 100
- stroke — 100

% of countries

Disease causes of mortality in Latin America , 2015

Neonatal causes

	% of countries
neonatal sepsis	11.8
neonatal encephalitis	17.6
neonatal preterm	64.7
congenital disorders	82.4

Infectious disease

diarrhea	11.8
HIV	17.6
lower respiratory infection	76.7

NCDs

breast cancer	5.9
Alzheimer's	5.9
colorectal cancer	5.9
stomach cancer	11.8
lung cancer	17.6
COPD	35.3
diabetes	58.8
stroke	82.4
chronic kidney disease	82.4
ischemic heart disease	100
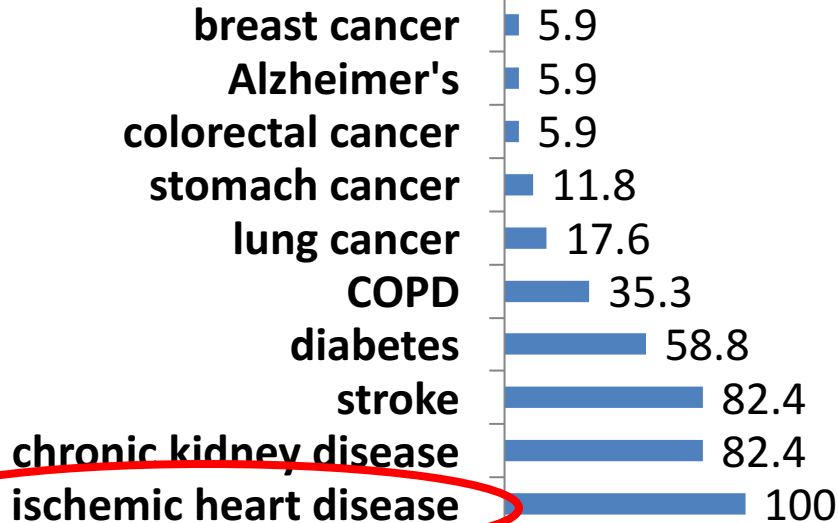
% of countries

Leading causes of disability in selected Asian countries, 2015

Nutritional causes

other nutritional deficiencies	7
nematode	7
Iron deficiency	87

Chronic conditions

COPD	7
osteoarthritis	7
asthma	53
diabetes	93
migraine	100

Mental disorders

Alzheimer's disease & other...	7
schizophrenia	20
anxiety	80
depression	100

Sense disorders

falls	20
oral disorders	20
skin & subcutaneous diseases	100
sense organ diseases	100

Musculoskeletal disorders

other msk	93
low back & neck pain	100

% of countries

Leading causes of disability in Latin America, 2015

Category	Cause	% of countries
Nutritional causes	iron deficiency anemia	88.2
Chronic conditions	asthma	94.1
	migraine	100
	diabetes	100
Mental disorders	anxiety	100
	depression	100
Sense disorders	oral disorders	64.7
	skin & subcutaneous diseases	100
	sense organ diseases	100
Musculoskeletal disorders	other musculoskeletal disorders	52.9
	low back & neck pain	100

% of countries

Risk factors associated with disability in selected Asian countries, 2015

Environmental
- hh air pollution from solid fuels — 40
- ambient particulate matter pollution — 80

Lifestyle
- low PA — 13
- smoking — 100

Dietary
- iron deficiency — 7
- diet low in nuts & seeds — 7
- suboptimal BF — 7
- unsafe water source — 13
- diet low in vegetables — 13
- childhood undernutrition — 33
- alcohol use — 47
- diet high in Na — 67
- diet low in fruit — 73
- diet low in whole grain — 100

Metabolic
- low glomerular filtration rate — 33
- high BMI — 73
- high total cholesterol — 87
- high fasting plasma glucose — 93
- high systolic bp — 100
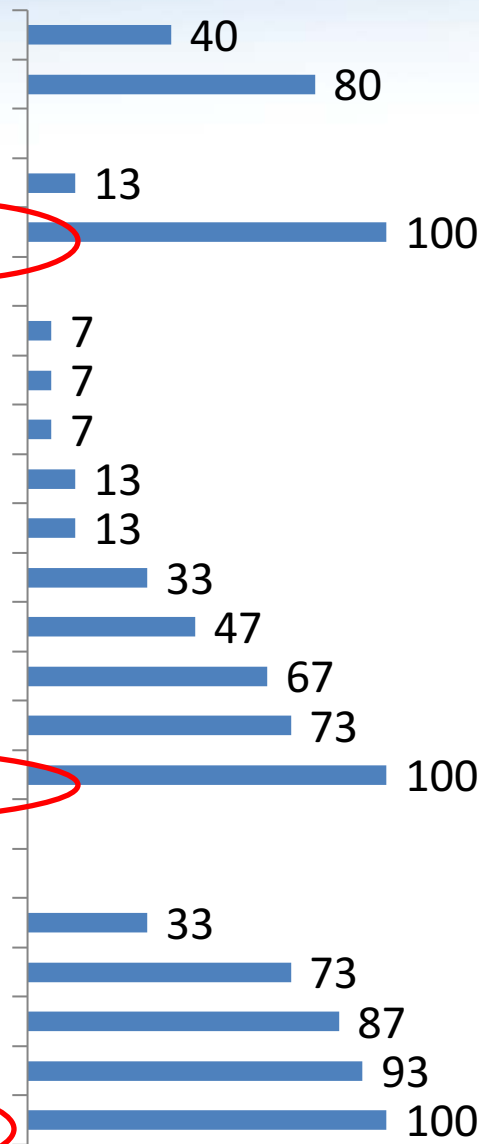
% of countries

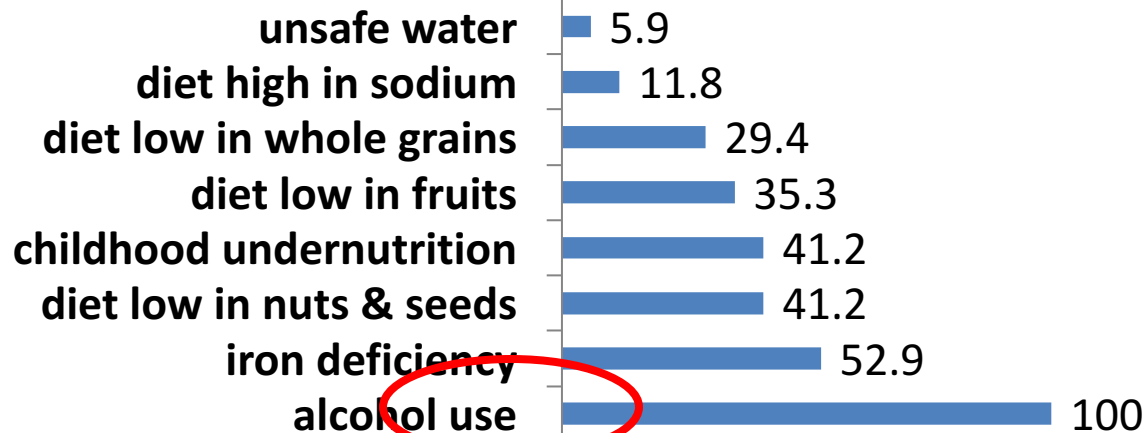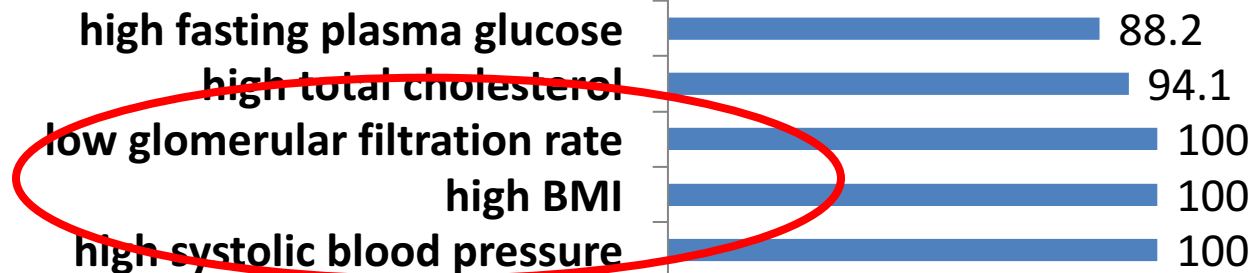# Risk factors associated with disability in Latin America, 2015

Environmental risks
- hh air pollution from solid fuels — 23.5
- ambient particulate matter… — 70.6

Lifestyle risks
- low physical activity — 5.9
- unsafe sex — 17.6
- smoking — 82.4

Dietary risks
- unsafe water — 5.9
- diet high in sodium — 11.8
- diet low in whole grains — 29.4
- diet low in fruits — 35.3
- childhood undernutrition — 41.2
- diet low in nuts & seeds — 41.2
- iron deficiency — 52.9
- alcohol use — 100

Metabolic risks
- high fasting plasma glucose — 88.2
- high total cholesterol — 94.1
- low glomerular filtration rate — 100
- high BMI — 100
- high systolic blood pressure — 100

% of countries

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Summary of GBD findings

ASIA	LATIN AMERICA
Common causes of mortality	**Common causes of mortality**
▪ Ischemic heart disease	▪ Ischemic heart disease
▪ Stroke	

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Summary of GBD findings

ASIA	LATIN AMERICA
Common causes of mortality	**Common causes of mortality**
▪ Ischemic heart disease	▪ Ischemic heart disease
▪ Stroke	
Common causes of disability	**Common causes of disability**
▪ Low back/neck pain	▪ Low back/neck pain
▪ Skin & subcutaneous disease	▪ Skin & subcutaneous diseases
▪ Sense organ diseases	▪ Sense organ diseases
▪ Depression	▪ Depression ▪ Anxiety
▪ Migraine	▪ Migraine
	▪ Diabetes

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Summary of GBD findings

ASIA	LATIN AMERICA
Risk factors for disease & disability	**Risk factors for disease & disability**
▪ Smoking	▪ Alcohol use
▪ **High systolic blood pressure**	▪ **High systolic blood pressure**
▪ Diet low in whole grains	▪ High body mass index (BMI)
	▪ Low glomerular filtration rate

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Comparison of risk factors for Latin America and Asia

Source: Computed from WHO Global status report on NCDs 2014

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Comparison of risk factors for Latin America and Asia

SMOKING

Latin America ████████████████ 20.4

Asia ██████████████████ 24.0
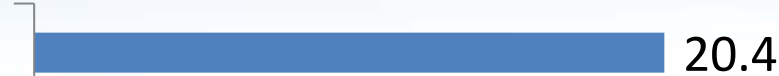
CURRENT SMOKING IN POPULATION AGE 15+ YRS (% of population), 2010

ALCOHOL

Latin America ████ 7.0

Asia ███ 5.1
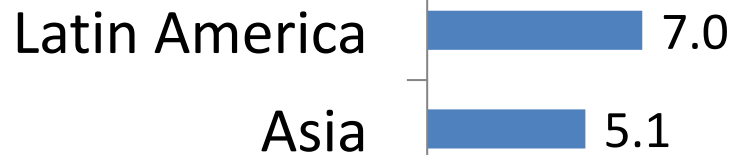
PER CAPITA CONSUMPTION OF PURE ALCOHOL (liters), 2010

Source: Computed from WHO Global status report on NCDs 2014

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Prevalence of **current tobacco smoking** in population aged 15+ years in selected Asian regions, 2012

- ASEAN countries — 28
- South & East Asia — 20
- High income Asia Pacific (Singapore, Brunei) — 16

% of population aged 15+ years

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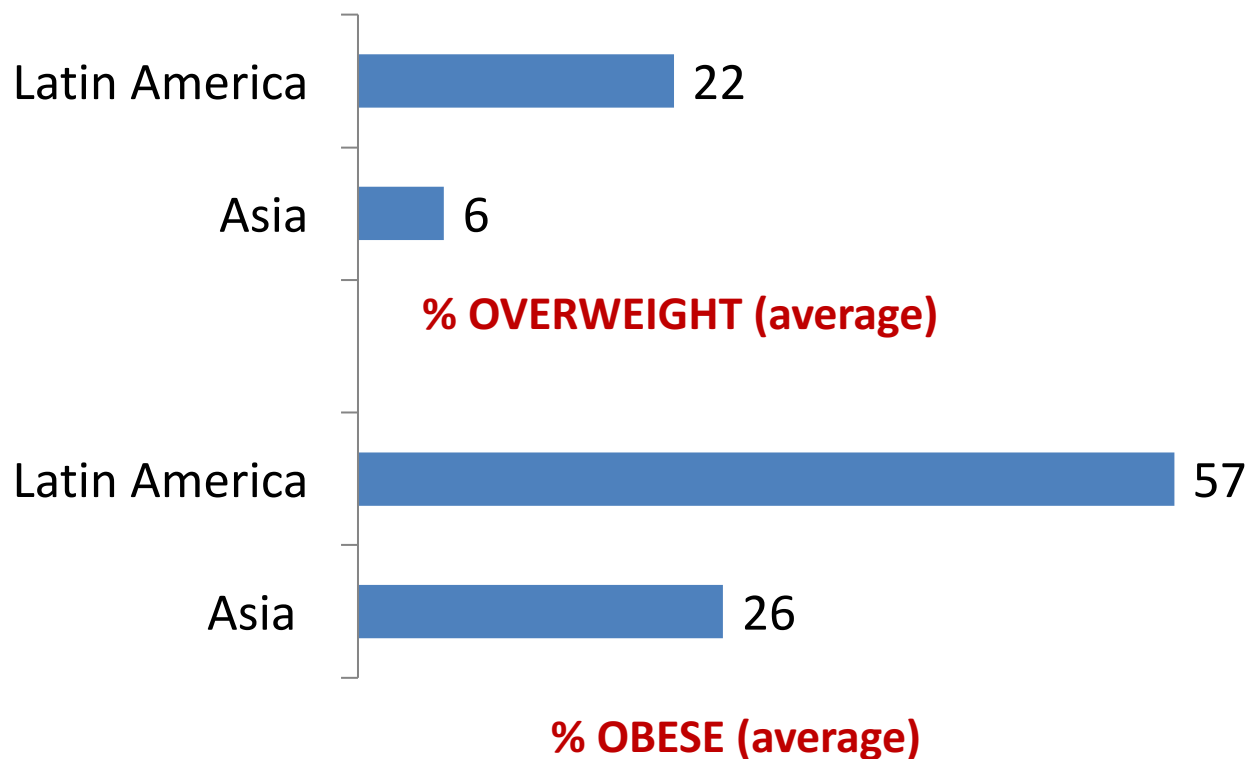
Average per capita **consumption of pure alcohol** (liters) in population aged 15+ years in Latin American regions, 2012
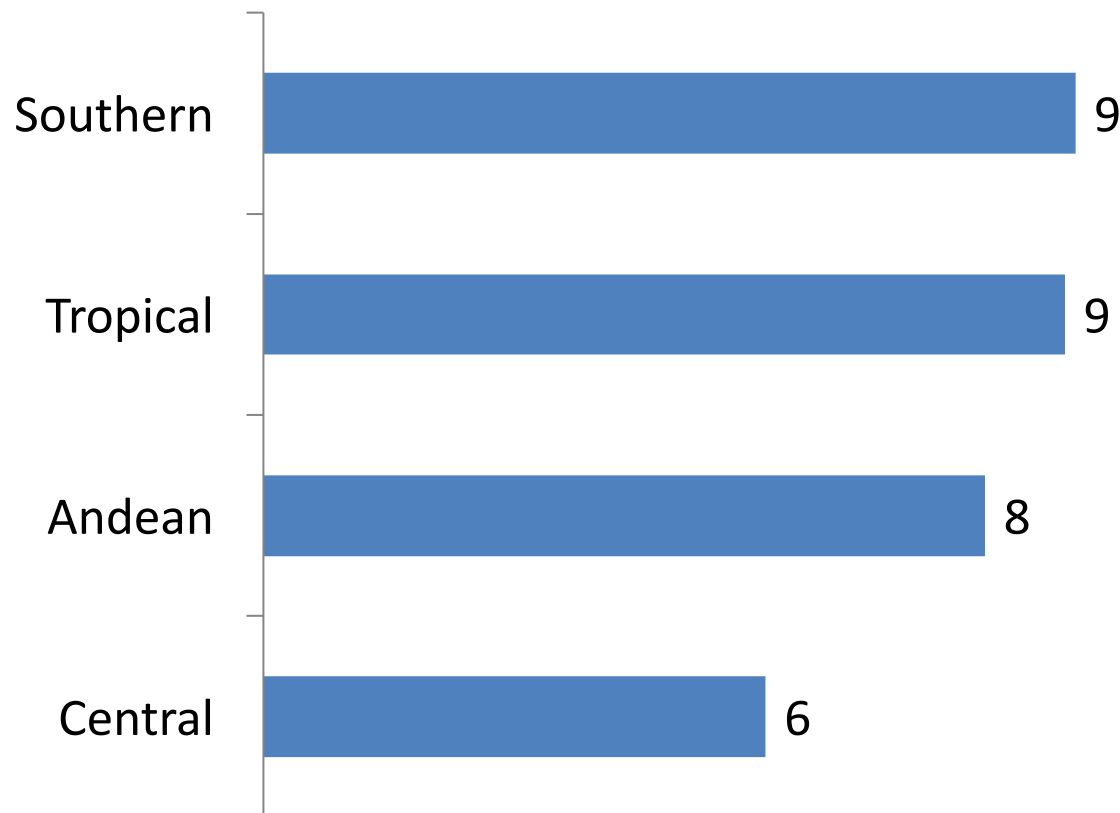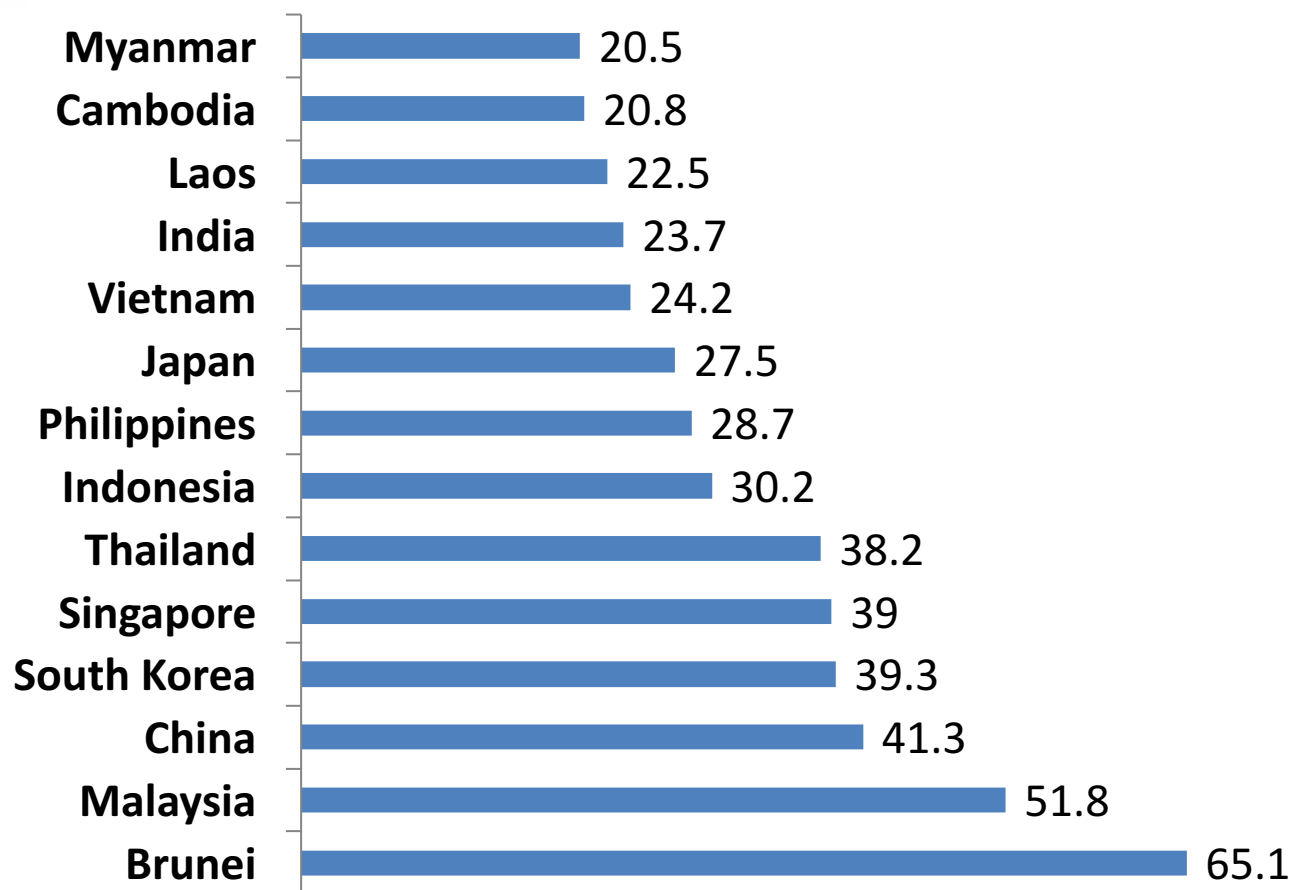
Per capita consumption of pure alcohol (liters) in population aged 15+ years

Prevalence of overweight and obesity in adults aged 18+ years, 2010, Latin America & Asia

Source: Computed from WHO Global Status Report on NCDs 2014

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Combined prevalence of overweight and obesity in adults aged 18+ years in selected Asian countries, 2010

Country	%
Myanmar	20.5
Cambodia	20.8
Laos	22.5
India	23.7
Vietnam	24.2
Japan	27.5
Philippines	28.7
Indonesia	30.2
Thailand	38.2
Singapore	39
South Korea	39.3
China	41.3
Malaysia	51.8
Brunei	65.1

% OVERWEIGHT & OBESE

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Combined prevalence of overweight and obesity in adults aged 18+ years in Latin American countries, 2010

Country	% Overweight & Obese
Paraguay	64.8
Nicaragua	66.5
Bolivia	69.2
Honduras	69.7
Guatemala	70.6
Ecuador	72.8
Brazil	74.1
Colombia	77.5
El Salvador	78.5
Peru	79.3
Costa Rica	84.7
Venezuela	87.1
Argentina	88
Uruguay	88.4
Panama	89
Chile	90.9
Mexico	92.5

% OVERWEIGHT & OBESE

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Conclusions

- Latin America have better health indicators than Asia (higher life expectancy & HALE, lower probability of dying from chronic disease between age 30-70)

- In Asia, high income is associated with better health but not in Latin America.

- Causes of mortality and disability are similar between the 2 regions.

- High blood pressure is a common risk factor for disability, but all other risk factors differ between the 2 regions.

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What One ILSI Healthy Aging Project hopes to achieve

- Examine underlying determinants (e.g., dietary, behavioral, environmental, genetic, etc.) of varying risk factors that lead to common disease outcomes in the 2 regions

- Identify/propose country- and region-specific best practices that promote healthy and successful aging.

GRACIAS