

Symposium on Successful Ageing Research Collaboration Meeting

Date : 21 April, Monday, 10 am , 2014

Venue : Korea Institute for Health and Social Affairs, Seoul

National University of Singapore

Korea Institute for Health and Social Affairs

Symposium on Successful Ageing Research Collaboration Meeting

Contents

Ageing & Mental Well-Being ----- **Associ Prof. Paulin Tay Straughan** and NUS team
(Vice-Dean, Faculty of Arts & Social Sciences: Deputy Head,
National University of Singapore)

Merging Data ----- **Ms. Min Hye Kim and Associ Prof. Paulin Tay Straughan**
(National University of Singapore)

How lonesome?: Social Isolation in Korean Elderly ----- **Assoc Prof. Joonmo Son**
(**Department of Sociology**, National University of Singapore)

Health Plan2020 and the Elderly Health Indicators ----- **Dr. Eun Jin Choi**
(Research Fellow, Korea Institute for Health and Social Affairs)

Ageing & Mental Well-Being: The Case of Seoul & Singapore

Paulin Straughan
Kim Min Hye



Project Overview

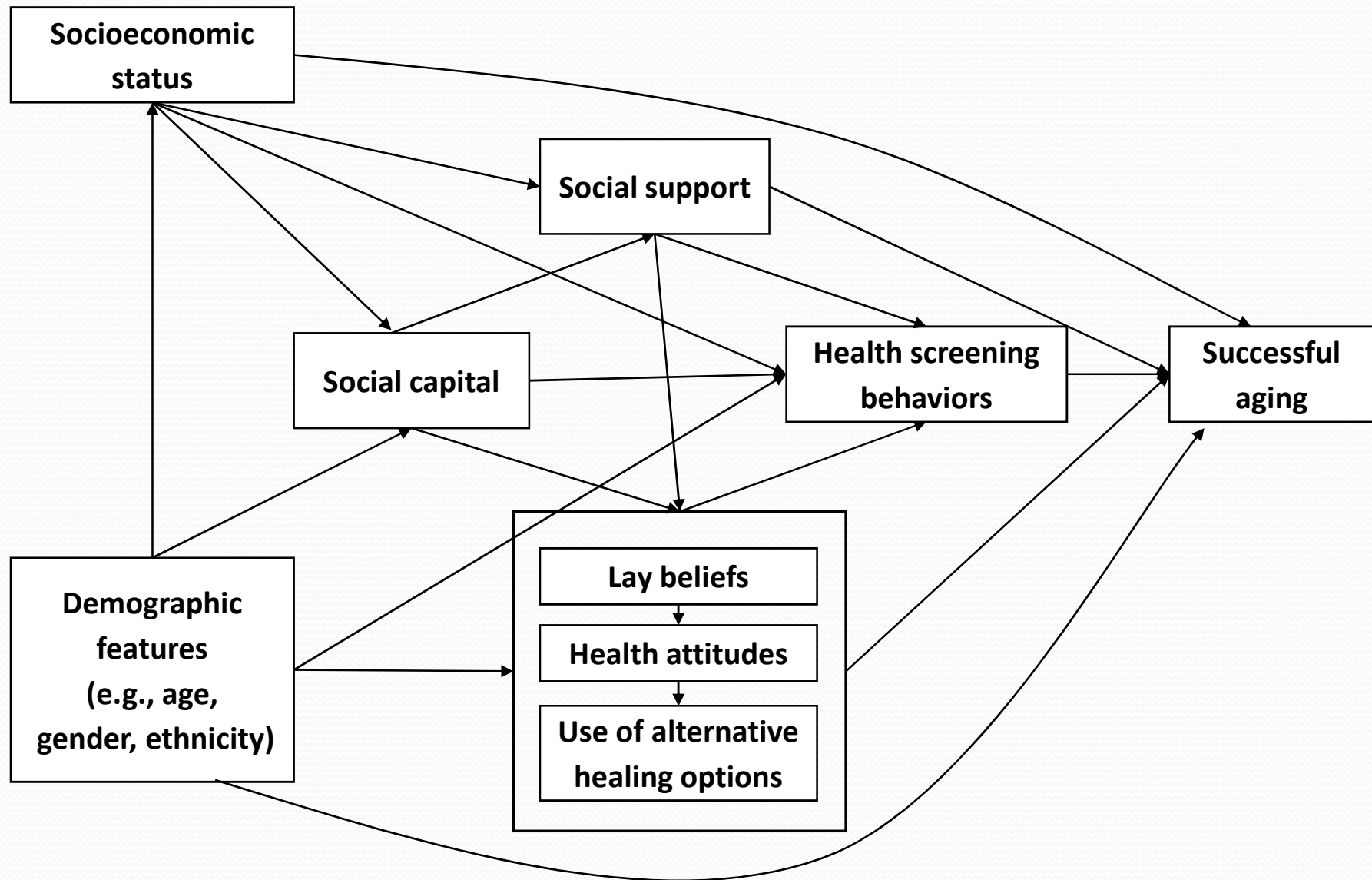
- Multidisciplinary approach to promoting longevity, health & successful ageing



Key Themes in Project

- The dynamics of lay belief systems as well as traditional health belief systems
- Trust in the medical profession
- Power of social networks
- Effects of social determinants
- Elements of successful aging
- Health screening behaviors

Conceptual Model





Research Questions

- To investigate the relationship between social determinants & mental wellness
- Seoul & Singapore → lessons on cultural differences?
- Survey data conducted from May to September in 2012
- Target population: 50 -69 years old



Why Singapore & S. Korea?

- Overall similarities
 - Geographically located in (East) Asian region
 - Confucian culture
 - A highly rapid and condensed industrialization & modernization
 - Similar levels of life expectancy
 - In 2012, 81.2 years in Singapore/ 80.7 years in South Korea
 - Similar level of development
 - In 2012, Singapore ranked 18th and South Korea ranked 12th out of 186 countries in terms of overall Human Development Index

Health Expenditure, total (% of GDP)

	2009	2010	2011	2012
Korea	7.10	7.29	7.38	7.54
Singapore	4.48	4.15	4.19	4.65

(Source: World Bank, *World Development Indicators*, <http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS>)

(Note: Total health expenditure is the sum of public and private health expenditure. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation.)

Health expenditure per capita (current US\$)

	2009	2010	2011	2012
Korea	1,204	1,498	1,652	1,703
Singapore	1,704	1,893	2,144	2,426

(Source: World Bank, *World Development Indicators*, <http://data.worldbank.org/indicator/SH.XPD.PCAP>)

(Note: Total health expenditure is the sum of public and private health expenditure. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation.)



Why Singapore & S. Korea?

- Differences
 - National health insurance (Korea) vs Self-funded health care model (Singapore)
 - Ethnically homogeneous (Korea) vs multi-ethnic (Singapore)



Respondents

(weighted)	Singapore	Seoul
# of respondents	1,540	1,203
Response Rate	77.0 %	50.1 %
Median age	57 years	57 years
Median years of education	10 years	12 years



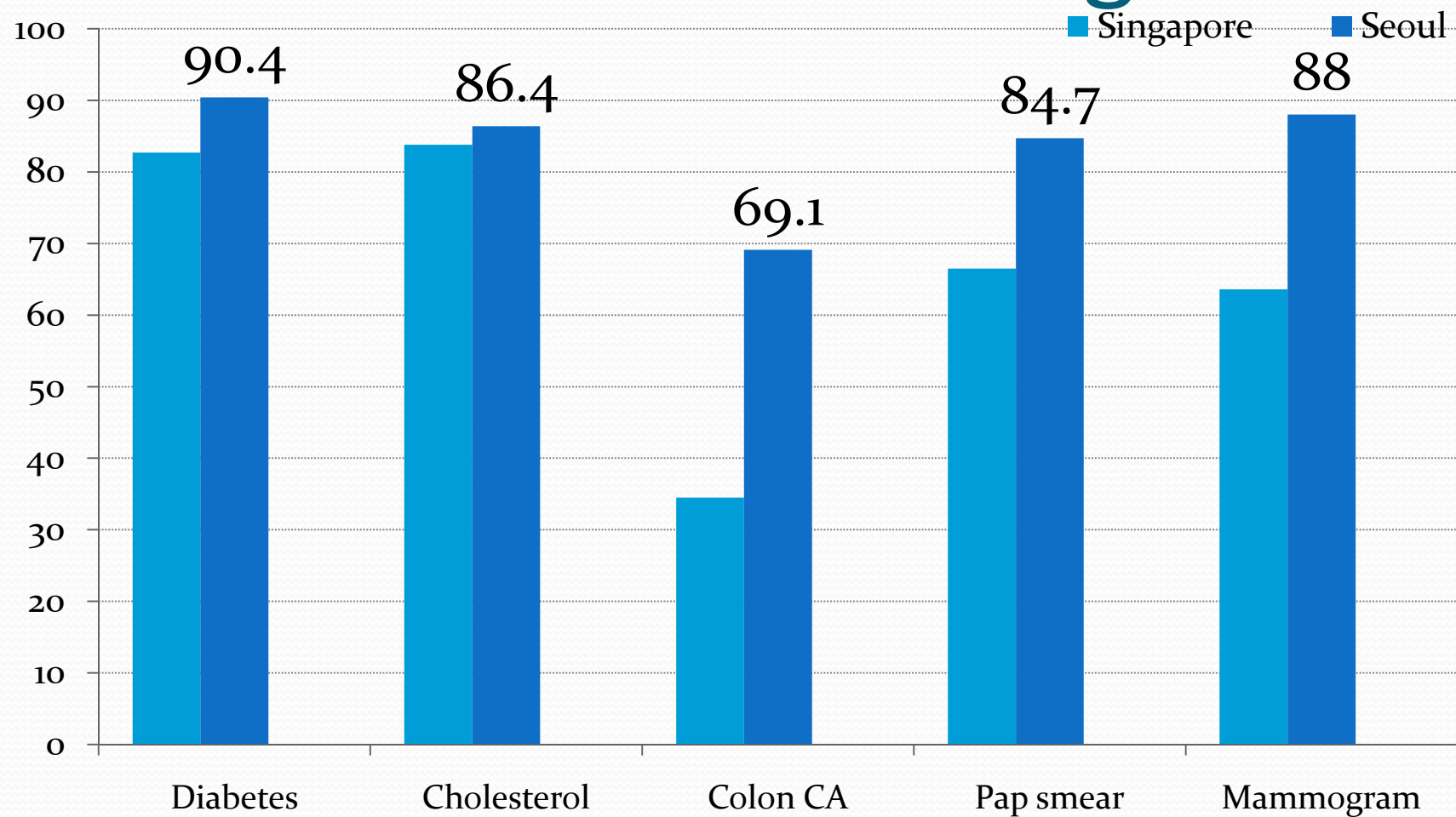
Respondents: Gender

	Singapore	Seoul
(%, weighted)		
Male	49.2	48.3
Female	50.8	51.7
Total	100.0	100.0

Respondents: Ethnicity

(%, weighted)	Singapore	Seoul
Chinese	81.8	-
Malay	11.0	-
Indian	6.1	-
Others (Singapore)	1.1	-
Korean	-	99.8
Others (Korea)	-	.2
Total	100.0	100.0

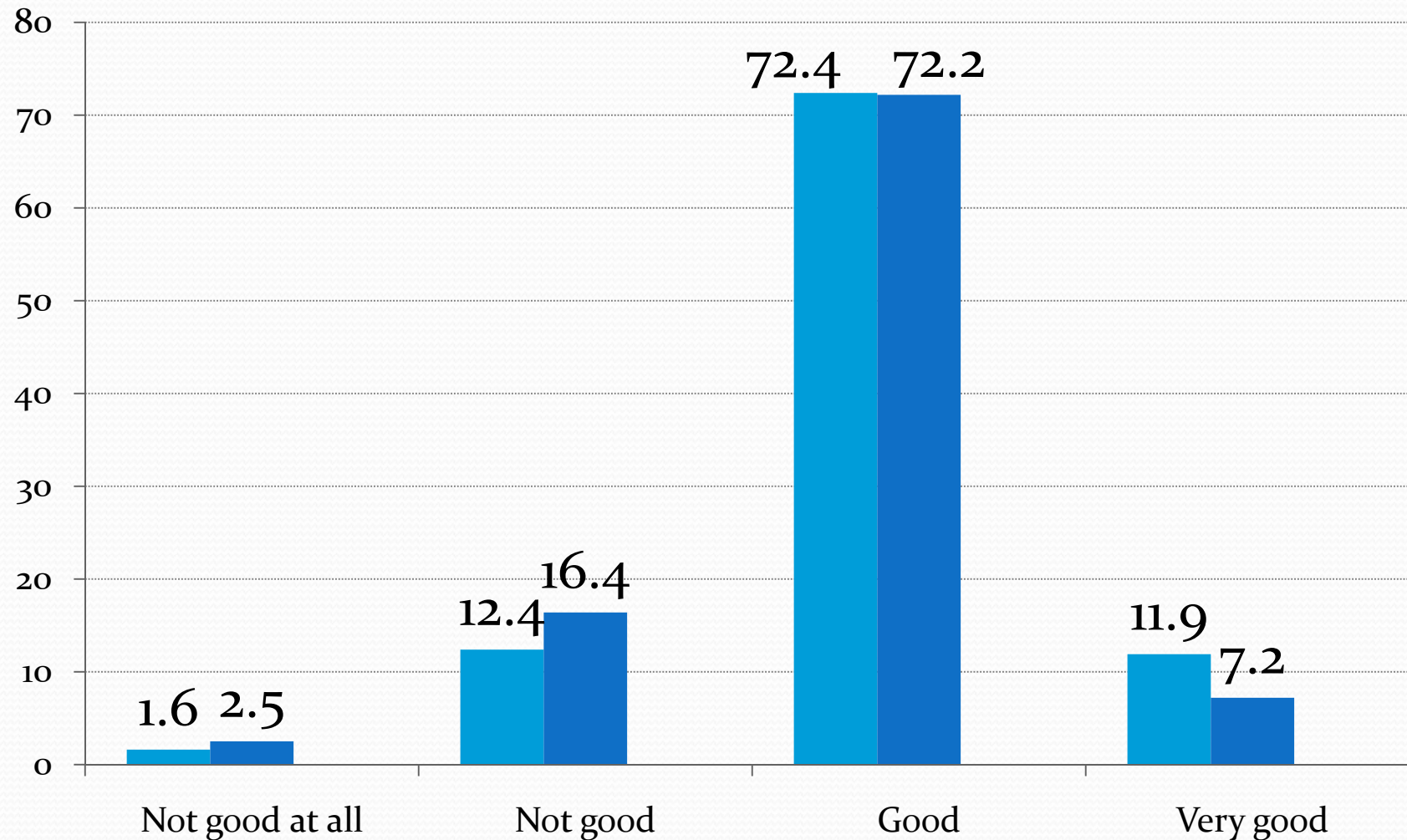
Attendance at Screening Tests



Self-rated Health

(%)

■ Singapore ■ Seoul





Mental Wellness ($\alpha = .708$)

Sub-items

Are you basically satisfied with your life?

Do you feel that your life is empty?

Do you feel happy most of the time?

Do you often feel helpless?

Do you think that most people are better off than you are?



Social Support ($\alpha = .950$)

Sub-items

Someone to help you if you were confined to bed

Someone who shows you love and affection

Someone to have a good time with

Someone to confide in or talk to about yourself or your problems

Someone who hugs you

Someone to get together with for relaxation

Someone to prepare your meals if you were unable to do it

Someone to help with daily chores if you were sick

Someone to share your most private worries and fears

Someone to turn to for suggestions about how to deal with a personal problem

Someone to do something enjoyable with

Someone to love and make you feel wanted

Factors in Model

- **Social determinants:**
 - Gender
 - Ethnicity
 - Age
 - Marital status
 - Education
 - Housing
 - Household income
 - Religion
- **Social support (composite index)**
- **Trust towards health-related institutions**
- **General Trust (“Most people can be trusted”)**
- **Health history**
 - Cancer
 - Cardiovascular disease or Stroke
 - Hypertension
 - Diabetes
 - Bone or Joint Problems
 - Bronchitis, emphysema, asthma, pneumonia

		Singapore	Seoul
Male		√-	
Ethnicity (reference: Chinese)	Malay		
	Indian		
	Others		
Age		√+	
Marital Status (reference: currently married)	Never married		
	Separated/Widowed		
	Widowed		
Education (reference: tertiary)	Primary	√-	√-
	Secondary		√-
[Singapore] Housing (reference: private housing)	HDB 1/2 rooms	√-	
	HDB 3 rooms +		
[Seoul] Housing (reference: owned)	Rented/free housing		√-
Household income (median)			
Trust on Ministry of Health [Singapore]/ Ministry of Health and Welfare [Seoul]			
Trust on Health Promotion Board [Singapore]			√+
Korea Centres for Disease Control and Prevention/National Health Insurance System [Seoul]			
Most people can be trusted (reference: need to be very careful)		√+	
Social support		√+	√+
Have a religion (reference: do not have a religion)			
Health history: Cancer			
Health history: Cardiovascular disease or Stroke			√-
Health history: Hypertension			
Health history: Diabetes			√-
Health history: Bone or Joint Problems		√-	
Health history: Bronchitis, emphysema, asthma, pneumonia			√-
Adjusted R Square		.112	.122



Findings & Implications

- **Social support**
- Class matters
 - Education (both)
 - Housing (both)
- Trust matters
 - Trust towards public institutions (in Seoul)
 - General trust (in Singapore)
- **Health History**



Seoul & Singapore – *why the differentials?*

- Political climate
- Cultural factors
- Other?

Merging data

- Singapore and Korean data were merged into a single file
 - country=1 (Singapore), country=2 (Seoul), [and country=3 (Shanghai)]
 - variables are arranged based on the order of Singapore questionnaire

Q47 STATEMENT	Not Important -----Very Important				DK
How important is your religion to you?	1	2	3	4	5

44. 선생님께서 종교가 얼마나 중요하다고 생각하십니까?

- ① 전혀 중요하지 않음
- ② 중요하지 않음
- ③ 중요함
- ④ 매우 중요함
- ⑤ 모르겠음



Merging data

- Some variables have different sub-categories

Q48rc Q48. Respondent's residence. (recoded)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 HDB 1-room	56	2.0	3.6	3.6
	2 HDB 2-room	23	.8	1.5	5.1
	3 HDB 3-room	349	12.7	22.7	27.8
	4 HDB 4-room	629	22.9	40.8	68.6
	5 HDB 5-room	310	11.3	20.1	88.8
	6 HDB executive, maisonette, mutigeneration, and HUDC	53	1		
	7 Private apartment/condominium	31	1		
	8 Landed property	89	3		
	Total	1540	56		
Missing	System	1203	43		
Total		2743	100		

Q48rc2 [Korean version] Q48. Respondent's residence. (recoded)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Detached house	536	19.5	44.6	44.6
	2 Apartment	414	15.1	34.4	79.0
	3 Row house	97	3.5	8.1	87.0
	4 Multiple household house	129	4.7	10.7	97.8
	5 House in buildings for business use	24	.9	2.0	99.8
	6 Others	3	.1	.2	100.0
	Total	1203	43.9	100.0	
Missing	System	1540	56.1		
Total		2743	100.0		

Merging data

- Some are “Korean only” variables

Q472 [Korea only] Q45. Height (unit; cm)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	140	2	.1	.2	.2
	142	1	.0	.1	.2
	145	5	.2	.4	.7
	146	1	.0	.1	.7
	147	5	.2	.4	1.2
	148	7	.3	.6	1.7
	149	2	.1	.2	1.9
	150	56	2.0	4.7	6.6

Q473 [Korea only] Q46. Weight (unit; kg)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	40	3	.1	.2	.2
	41	1	.0	.1	.3
	42	1	.0	.1	.4
	43	5	.2	.4	.8
	44	1	.0	.1	.9

Weighting data

- Singapore: Post-Stratification weight
- To adjust over- and under- representations of certain characteristics (e.g. gender)
- Specific age, gender, and ethnicity
- Census 2010
- E.g. 51-year-old Chinese Male
 - Population: 24,187 (Total # of population: 855,246)
 - Proportion: $24,187 / 855,246 = \underline{.028281}$
 - Sample: 29 (Total # of sample: 1,540)
 - Proportion: $29 / 1540 = \underline{.018831}$ (**under-represented**)
 - Weight: $0.028281 / 0.018831 = \mathbf{1.50185}$

Weighting data

- Singapore: Post-Stratification weight

age4gr Age group (4 categories: 50 - 54 yrs.; 55 - 59 yrs.; 60 - 64 yrs.; and 65 - 69 yrs.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 50 - 54 yrs.	401	26.0	26.0	26.0
	2 55 - 59 yrs.	452	29.4	29.4	55.4
	3 60 - 64 yrs.	376	24.4	24.4	79.8
	4 65 - 69 yrs.	311	20.2	20.2	100.0
	Total	1540	100.0	100.0	

age4gr Age group (4 categories: 50 - 54 yrs.; 55 - 59 yrs.; 60 - 64 yrs.; and 65 - 69 yrs.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 50 - 54 yrs.	538	35.5	35.5	35.5
	2 55 - 59 yrs.	441	29.1	29.1	64.6
	3 60 - 64 yrs.	340	22.4	22.4	87.0
	4 65 - 69 yrs.	197	13.0	13.0	100.0
	Total	1516	100.0	100.0	

Weighting data

- Seoul: Design weight
- To adjust over- or under-sampling of cases or disproportionate stratification
- 2009 resident registration statistics
- Four broader districts
- 25 “Gu (district)”s

〈표 1-1〉 서울특별시의 권역별 분류

권역별	구
강북권	종로구, 중구, 용산구, 성북구, 강북구, 도봉구, 노원구
강남권	동작구, 관악구, 서초구, 강남구, 송파구
강서권	은평구, 서대문구, 마포구, 양천구, 강서구, 구로구, 금천구, 영등포구
강동권	중랑구, 성동구, 광진구, 동대문구, 강동구

〈표 1-2〉 조사대상의 총화 분류기준¹⁾

권역별	계	남	여
계	2,454,432	1,184,808	1,269,624
강북권	573,224	274,854	298,370
강남권	602,807	288,407	314,400
강서권	798,647	386,653	411,994
강동권	479,754	234,894	244,860

권역별	세대 ²⁾	집락(반) ³⁾
계	4,192,752	87,823
강북권	957,157	19,578
강남권	1,077,012	22,446
강서권	1,350,633	29,181
강동권	807,950	16,618

주: 1) 2011년 서울시 주민등록인구, 만 50~69세

2) 2011년 서울시 주민등록세대

3) 2009년 주민등록자료의 통반 수)

Choi, E.-J., Yoo, S., Son, C., Oh, Y., & Yeo, J. (2012). Social capital and its impact on health promoting behavior *Research report 2012-49*. Seoul: Korean Institute of Health and Social Affairs, p.23.

Weighting data

- Seoul: Design weight

age4gr Age group (4 categories: 50 - 54 yrs.; 55 - 59 yrs.; 60 - 64 yrs.; and 65 - 69 yrs.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 50 - 54 yrs.	425	35.3	35.3	35.3
	2 55 - 59 yrs.	324	26.9	26.9	62.2
	3 60 - 64 yrs.	256	21.3	21.3	83.5
	4 65 - 69 yrs.	198	16.5	16.5	100.0
	Total	1203	100.0	100.0	

age4gr Age group (4 categories: 50 - 54 yrs.; 55 - 59 yrs.; 60 - 64 yrs.; and 65 - 69 yrs.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 50 - 54 yrs.	839244	34.0	34.0	34.0
	2 55 - 59 yrs.	793981	32.2	32.2	66.2
	3 60 - 64 yrs.	473105	19.2	19.2	85.4
	4 65 - 69 yrs.	361120	14.6	14.6	100.0
	Total	2467450	100.0	100.0	

How lonesome?: Social Isolation in Korean Elderly

Joonmo Son

NUS Sociology

KIHASA Workshop, April 21, 2014

Two indicators

- Extensity in social capital scale
 - Position generator probed if a respondent knew any of 10 job-holders.

1. Secondary school teacher
2. Personnel manager in a large company
3. Computer programmer
4. Pharmacist
5. Hairdresser
6. Nurse
7. Receptionist
8. Medical doctor
9. Cleaner
10. Operator in a factory

- The extensity measure ranges from 0 to 10.

Two indicators

- Size of social support network (MOS)
 - A global question asking the number of close ties
 - *About how many close friends and close relatives (including family members) do you have? (someone you feel at ease with and can talk to about what is on your mind)*

Number: _____

Extensity

extensity	Freq.	Percent
1	302	25.10
2	214	17.79
3	97	8.06
4	49	4.07
5	23	1.91
6	7	0.58
7	11	0.91
8	3	0.25
10	5	0.42
Total	1,203	100.00

No social capital

Weighted mean: 1.23

	nosc
nosc	1.00000
	1203
age	0.1051
	0.0003
	1203
female	-0.0655
	0.0230
	1203
married	-0.0607
	0.0353
	1203
working	-0.0353
	0.2210
	1203
educ	-0.0797
	0.0057
	1201
medhincome	-0.1358
	0.0000
	1199
exercise	-0.0843
	0.0034
	1203
health	-0.1161
	0.0001
	1185
depress	0.0618
	0.0320
	1203
volmem	-0.0579
	0.0447
	1203

Profile of social isolates:

Older males who are unmarried and physically and mentally sick, have low SES, do not exercise regularly, and are not active member of voluntary associations

Negative binomial regression
 Dispersion = mean
 Log pseudolikelihood = -3593320

Number of obs = 1179
 Wald chi2(10) = 74.35
 Prob > chi2 = 0.0000

extensity	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
age	-.0134054	.0079297	-1.69	0.091	-.0289472	.0021364
					.0828446	.4494847
married	-.0466831	.1256563	-0.37	0.710	-.292965	.1995987
working	.0114793	.086929	0.13	0.895	-.1588983	.1818569
					.0288511	.1924255
medhincome	.0350697	.0195857	1.79	0.073	-.0033177	.073457
					.0382978	.1037021
health	.1109651	.1313533	0.84	0.398	-.1464826	.3684128
depress	-.0483016	.0279758	-1.73	0.084	-.1031332	.00653
volmem	.0668748	.0432786	1.55	0.122	-.0179496	.1516992
_cons	.2591492	.5544232	0.47	0.640	-.8275004	1.345799
/lnalpha	-.7630963	.1657316			-1.087924	-.4382683
alpha	.4662206	.0772675			.3369151	.6451527

Size of social support network

numsupport	Freq.	Percent
0	27	2.24
1	79	6.57
2	178	14.80
3	244	20.28
4	161	13.38
5	228	18.95
6	78	6.48
7	25	2.08
8	25	2.08
10	125	10.39
12	5	0.42
15	8	0.67
20	14	1.16
30	3	0.25
43	1	0.08
50	1	0.08
53	1	0.08
Total	1,203	100.00

Weighted mean: 4.74

Linear regression

Number of obs = 1179
 F(10, 1168) = 4.20
 Prob > F = 0.0000
 R-squared = 0.0395
 Root MSE = 3.847

numsupport	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
age	.0140031	.0239223	0.59	0.558	-.0329323	.0609385
female	-.0217435	.2768743	-0.08	0.937	-.5649701	.5214831
					.3892254	1.601444
working	-.1858202	.278472	-0.67	0.505	-.7321816	.3605411
educ	-.0143315	.1468705	-0.10	0.922	-.302491	.2738279
medhincome	.0624796	.0784427	0.80	0.426	-.0914248	.2163839
exercise	.0254369	.0511545	0.50	0.619	-.0749281	.125802
health	-.2608014	.3900506	-0.67	0.504	-1.02608	.5044767
					-.3637473	-.0122771
					.16028	1.264624
_cons	3.015342	1.596956	1.89	0.059	-.1178819	6.148566

Conclusion

- Social isolation is a precursor of morbidity and mortality.
- Both social capital and social support measures indicate that Korean elderly are socially isolated.
- Male deficit in social capital (extensity) is remarkable while size of social support network is contingent on marital status and active involvement in voluntary associations.

Health Plan2020 and the Elderly Health indicators

Eun Jin Choi
Research Fellow

History of Health Plan in Korea

- Legal base : National Health Promotion Act(1995) proposed by the Ministry of Health and Welfare in Korea, was enacted. By this act, tobacco tax began to be earmarked for the National Health Promotion fund.
- The First National Health Plan, HP2010, was developed in 2002. The HP2010 was amended in 2005. This amendment was partly due to increased health promotion fund. The government raised tobacco tax for increasing health promotion fund in December, 2004. The tobacco price raised was about 500 Won, which was about 29% increase.

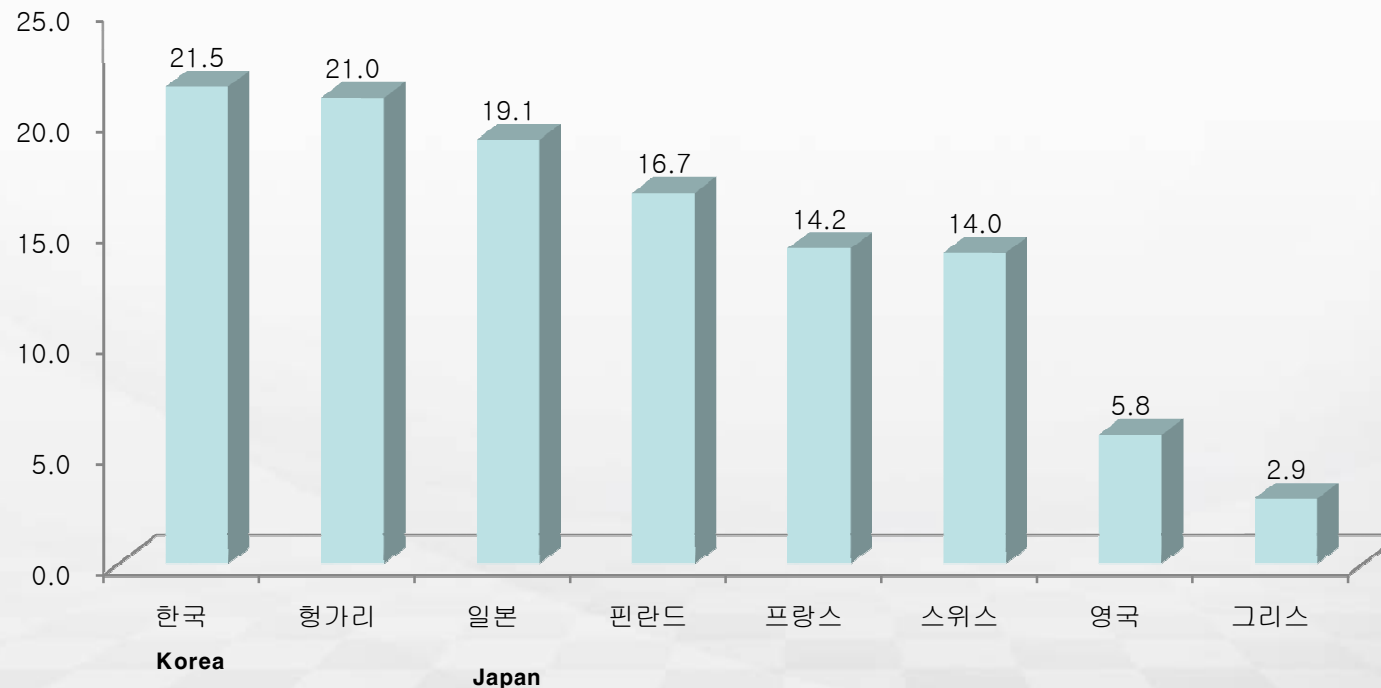
Chronic diseases

- **Lifestyle related chronic diseases**
 - **Cancer, Cardiovascular diseases, diabetes**
 - **Cancer deaths and cancer death rate per 100,000 persons increased annually**



Suicide rate

- **Rising suicide rate**
 - In Korea, 21.5(2006) per 100,000 persons(OECD average 11.1)



1. HP 2020 Framework

1

**General direction based on
Health issues and
related environment**

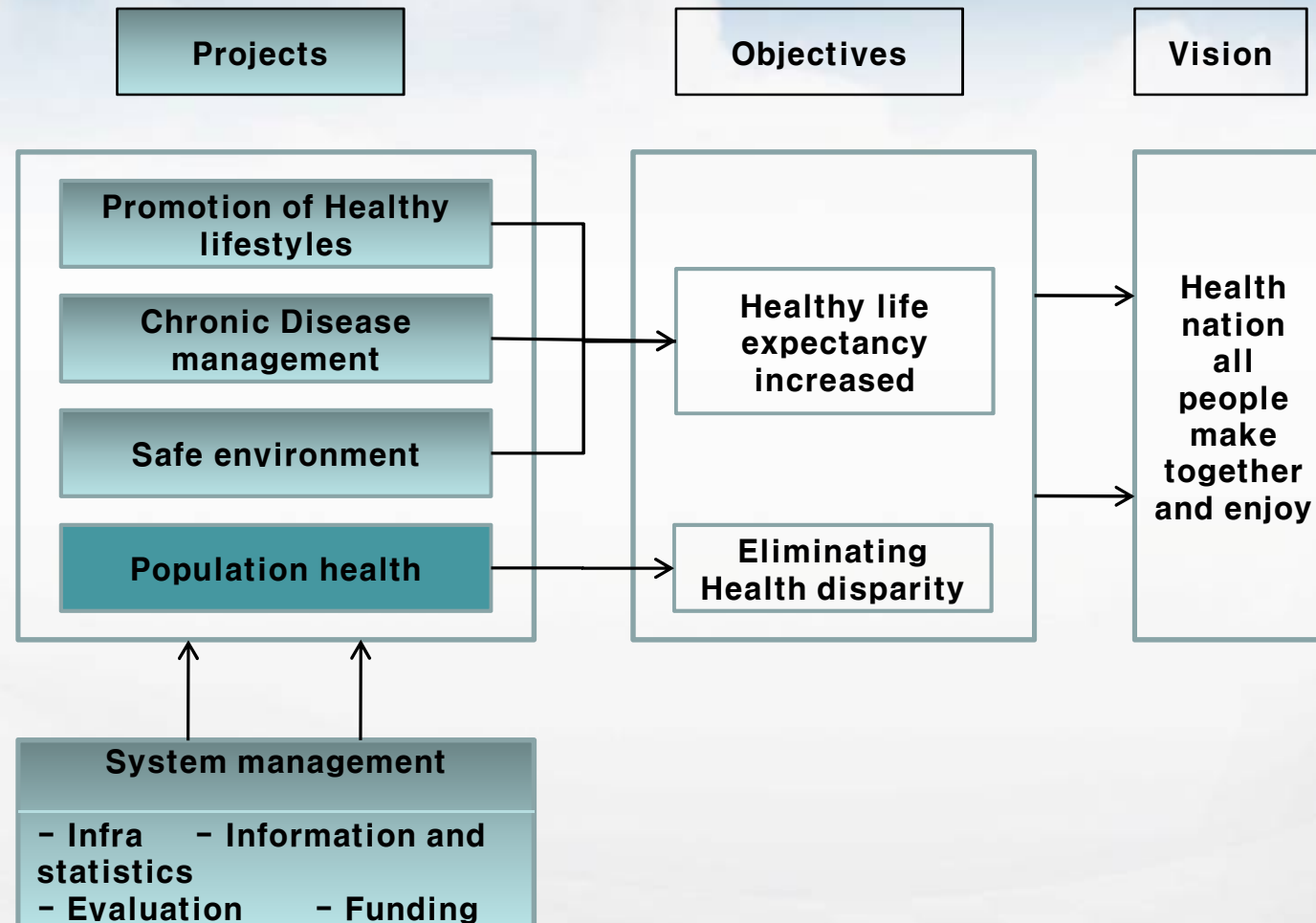
2

**Consistent with the
evaluation of HP 2010**

3

**Direction based on WHO
Definition of health promotion
Policy**

2. HP 2020 Frame



2-1. Focus areas

Determinants of health

Healthy lifestyles

Health service

Social physical environment

Individual socio-economic context

Focus areas

Promotion of HL

Disease management

Safe environment

Population health (Elderly health)

Objectives

① Healthy life expectancy

② Health equity



2-2. development of focus areas

Determinants of Health			Focus areas
category	subcategory	branches	
Individual factors	Individual factor	Biomedical factor	Population health
		Emotional factor	
	Socio-economic	Socio-economic factor	
	Health behavior	Health lifestyle Utilization of health service	Promotion of healthy lifestyle
Environmental factors	Health service environment	Health promotion	Disease prevention
		Health service	Disease management
	Social environment	Social environment	Safe environment
	Physical environment	Physical environment	

2-3. Development of Project areas

HP 2020	WHO health promotion	HP 2010 evaluation	Current situation
<ul style="list-style-type: none"> -Healthy lifestyle -preventive disease management -safe environment -population health - Implementation system management 	<ul style="list-style-type: none"> -Change determinants of health -Focusing on health behavior, health service, social and physical environment (comprising 34~81% of all determinants of health) 	<ul style="list-style-type: none"> -Mixture of diseases and population groups -Lack of consideration on implementation system 	<ul style="list-style-type: none"> -Increasing elderly population with chronic diseases and economically dependant -Social polarization(health disparity) -Increased chronic diseases and newly emerging infectious diseases -Rising health care cost due to aging population and need for quality care -Healthy lifestyle indicators(tobacco use, alcohol use , obesity)

General Health policy Indicators for the Elderly in Korea

- Dental health : preserving 20 natural teeth for those aged 65 to 74 (about 50%) , periodic dental screening
- Physical health : maintaining abilities of daily living and instrumental abilities of daily living
- Prevention of dementia
- Increasing health screening
- Preventing falls
- Preventing hazardous drinking
- Balanced diet based on the recommended nutrition intake

Policy Indicators for mental health

- Increase services for depression treatment
- Increase prevention service accessibility for those with suicide ideation and suicide attempts
- Stress awareness and management behavior

Thank you.