Health Expectancy Research in Asian Countries

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Ageing in the Twenty-First Century: A Celebration and A Challenge





HelpAge International age helps

In collaboration with: UNDESA, FAO, ILO, OHCHR, UN AIDS, UNDP, UN Habitat, UNHCR, UNICEF, UN Women, WFP, WHO, ECA, ECE, BCLAC, ESCAP, ESCWA, GAA, HelpAge USA, IFA, INPEA, IOM



World Health Organization

WORLD REPORT ON AGEING AND HEALTH

Overview of the Presentation

- Brief Introduction to Health Expectancy
 - Concept of Health Expectancy, Concept of Health, Measures of Health Expectancy, Data Sources, Methods of Computing Health Expectancy
- Recent studies conducted in the region
- Future direction



Conquering suffering Enriching humanity

Report of the Director-General



World Health Organization Geneva 1997

Message from the Director-General

n today's rapidly changing world, some traditional attitudes towards human health, suffering and disability need to be urgently reviewed.

For example, infectious diseases can no longer be regarded as restricted to developing countries. This is clear from the evidence of their international resurgence and the intercontinental spread of AIDS. Nor can chronic noncommunicable diseases continue to be judged only as problems of the richer nations. They are emerging at an alarming rate in poorer regions, unwelcome additions to the infections which still flourish there.

Until now, the term for this phenomenon – the "double burden" of disease – has usually been applied only to developing countries. But it can no longer be confined to these countries alone; it has expanded into a double threat to global health. In the battle for health in the 21st century, infectious diseases and chronic diseases are twin enemies that have to be fought simultaneously on a global scale.

We dare not turn our back on infectious diseases, for they will return with a vengeance if we do. The lessons of AIDS, tuberculosis, malaria, cholera and *Escherichia coli* food-poisoning outbreaks must not be forgotten. In addition to the many millions of people a year who are killed by infectious diseases, hundreds of millions of others are afflicted by them. This was the theme of *The World Health Report* 1996.

But neither can we ignore the growing burden in suffering and disability represented by noncommunicable diseases and conditions – cancer, circulatory disease, metabolic and hormonal imbalances, mental disorders, musculoskeletal conditions – most of which are chronic; they invariably afflict the sufferer with pain and disability, for years and even decades. This, too, is the plight of hundreds of millions. Confronting these chronic conditions, and the crisis of suffering that goes with them, is the theme of *The World Health Report* 1997.

Health is being increasingly affected by a number of factors over which the individual has little control, and over which the conventional health sector also has little sway: social and economic circumstances, labour-saving technologies, and the information and communication revolutions. People in poorer countries are now acquiring many of the unhealthy lifestyles and behaviours of the industrialized world: sedentary occupations, inadequate physical activity, unsatisfactory diets, tobacco, alcohol and drugs. Populations in richer countries continue to live with all these risks. Problems are aggravated by the international spread of misleading information about consumer products. All these factors together will lead to a global increase in premature ill-health from chronic diseases.

Worldwide, life expectancy has increased dramatically during the last decades of the 20th century. But in celebrating our extra years, we must recognize that increased longevity without quality of life is an empty prize, i.e. *health* expectancy is more important than *life* expectancy.

Unlike many infectious diseases, the majority of chronic diseases are preventable but cannot as yet be cured. The emphasis must therefore be on preventing their onset, delaying their develop-

Increased longevity without quality of life is an empty prize. Health expectancy is more important than life expectancy.

Message

Increased longevity without quality of life is an empty prize. Health expectancy is more important than life expectancy.

Pioneers of Health Expectancy Research

- Sanders, B. (1964): "Measuring Community Health Level," <u>American Journal of Public Health</u>, 54:1063-1970
- Sullivan, D.F. (1966): <u>Conceptual Problems in</u> <u>Developing an Index of Health. Vital and Health</u> <u>Statistics</u>, Series 2 (17), Washington, DC: National Center for Health Statistics.
- Sullivan, D.F. (1971) "A Single Index of Mortality and Morbidity," <u>HSMHA Health Reports</u>, 86, pp. 347-354.

REVES

- REVES is the French acronym of for the International Network on Health Expectancy and the Disablement Process (Réseau Espérance de Vie en Santé). REVES was established in 1989 to promote and disseminate concept of health expectancy as a measure of population health.
- URL: <u>http://reves.site.ined.fr/en/</u>

Health Expectancy

Figure 1: General model of health transitions [WHO, 1984]: The observed mortality and hypothetical morbidity and disability survival curves for females in the United States of America in 1980.



 e_0^{**} and e_{60}^{**} are the number of years of autonomous life expected at birth and at age 60, respectively. M_{50}^{**} is the age to which 50% of females could expect to survive without loss of autonomy.

Health Expectancy: Concept

Life Expectancy = Healthy Life Expectancy + Unhealthy Life Expectancy

86 Years of Life = 82 Years of Healthy Years + 4 Years of Unhealthy Years

- 4 years of unhealthy years do not mean the last 4 consecutive years of life.
- Can be divided more than 2 categories if categories are mutually exclusive.

Example of Health Expectancy

TABLE 2—Expected Years of Life Spent in Various States of Health, at Birth and at Ages 20–64, 65, and 85 Years, by Gender United States, 1970–2010

State of Health	1970, Mean (95% CI)	1980, Mean (95% CI)	1990, Mean (95% CI)	2000, Mean (95% CI)	2010, Mean (95% CI)
			Males		
At birth					
Total	67.0	70.1	71.8	74.1	76.2
Free of disability	56.5 (56.4, 56.6)	57.2 (57.1, 57.4)	58.8 (58.6, 58.9)	60.0 (59.9, 60.2)	61.0 (60.9, 61.2)
With disability in community	10.0 (9.8, 10.1)	12.2 (12.1, 12.4)	12.4 (12.3, 12.6)	13.6 (13.4, 13.7)	14.7 (14.6, 14.9)
Institutionalized	0.6 (0.6, 0.6)	0.6 (0.6, 0.7)	0.7 (0.6, 0.7)	0.5 (0.5, 0.6)	0.4 (0.4, 0.5)
			Females		
At birth					
Total	74.6	77.6	78.8	79.5	81.0
Free of disability	62.7 (62.6, 62.8)	62.8 (62.6, 63.0)	63.9 (63.8, 64.0)	64.6 (64.4, 64.7)	65.4 (65.3, 65.6)
With disability in community	10.9 (10.7, 11.0)	13.4 (13.3, 13.6)	13.4 (13.3, 13.6)	13.8 (13.6, 14.0)	14.8 (14.6, 15.0)
Institutionalized	1.1 (1.0, 1.2)	1.4 (1.3, 1.5)	1.5 (1.4, 1.5)	1.1 (1.0, 1.2)	0.8 (0.8, 0.9)

Source: Crimmins, Zhang and Saito, 2016, ion and American Journal of Public Health

Health Expectancy

can be considered as

A family of summary measures of population health

Able to Answer the Question:

Are we living longer healthy lives as well as longer lives?

What is the evidence to answer to this question?

Longer HE and Higher % of HE

TABLE 3—Percentage of Expected Life in Various States of Health, at Birth and at Ages 20–64, 65, and 85 Years, by Gender: United States, 1970–2010

	Males, %				Females, %					
State of Health	1970	1980	1990	2000	2010	1970	1980	1990	2000	2010
At birth										
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Free of disability	84.2	81.6	81.8	81.0	80.1	84.0	80.9	81.1	81.3	80.7
With disability in community	14.9	17.4	17.3	18.4	19.3	14.6	17.3	17.0	17.4	18.3
Institutionalized	0.9	0.9	0.9	0.7	0.5	1.5	1.8	1.8	1.4	1.0
At ages 20–64 y										
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Free of disability	85.5	83.4	84.4	84.0	84.0	87.4	84.8	85.0	84.6	84.2
With disability in community	14.0	16.1	15.3	15.8	16.0	12.1	15.0	14.5	15.1	15.1
Institutionalized	0.7	0.5	0.5	0.2	0.2	0.5	0.5	0.2	0.2	0.2
At age 65 y										
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Free of disability	51.2	47.8	49.1	50.9	52.5	54.2	50.5	52.0	55.0	56.7
With disability in community	45.0	48.0	46.6	46.0	45.2	39.2	41.5	39.9	39.3	39.4
Institutionalized	3.8	4.2	4.3	3.1	2.3	6.6	8.0	8.1	6.3	4.4

Source: Crimmins, Zhang and Saito, 2016, ion and American Journal of Public Health

What are summary measures of population health?

measures that combine information on mortality and morbidity to indicate the health of a particular population

Why do we need summary measures of population health?

often used measure of health, i.e. "life expectancy," does not serve the purpose any more for the aging population with increasing prevalence of chronic diseases monitor the level of and change in physical and/or mental well-being of a population (may be social too)

Potential use of Summary Measures

- comparing health of a particular country over time
- comparing health across countries (very important for some)
- identifying and quantifying overall health inequalities among subpopulations
- identifying and quantifying effects of morbidity on overall population health

Health Expectancy in Policy

- EU: EuroStat--Healthy life years as indicator of population health
- EU: Target for a two-year increase in healthy life years at birth from 2010 to 2020
- USA: First appeared in "Healthy People 2000" as one of priorities and continued in "Healthy People 2010" and "Healthy People 2020"
- Japan: First priority to increase health expectancy for the next decades in the health promotion guideline released in 2012 by the MHLW
- WHO: DALY, DALE, HALE

http://www.eurohex.eu/

Advanced research on European health expectancies

C WELCOME

eurthex

About JA:EHLEIS

Country reports

Training material

Publications

Health module

Bibliography

Useful links

Site contents

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Healthy Life Years

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Database

Home

EurOhex is a website which provides access to research on health expectancies in Europe. It includes a database on health indicators comprising life expectancies and Healthy Life Years (HLY) for 27 European countries.

From 2011 onwards projects on health expectancies are conducted in the framework of a Joint Action between the European Commission and the Member-States:



The JA:EHLEIS contributes to the European Innovation Partnership (EIP) on Active an Healthy Ageing as well as to the European Year for Active Ageing.





The JA:EHLEIS follows:

<u>http://epp.eurostat.ec.europa.eu</u> /portal/page/portal/eurostat/home/

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http://epp.eurostat.ec.europa.eu/portal/page /portal/statistics/search_database

GISCO:Geographical Information and maps Ð-Ð Metadata Concepts and definitions 🖻 🦳 Legislation and methodology 🖻 🦳 Classifications **B-**Glossaries and thesauri **Ð**-(National methodologies Euro-SDMX Metadata Structure Standard code lists SDMX data and metadata exchange



Definition of Health

- WHO: Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.
- Many measures have been used for computing health expectancy.

Health Related Classifications

- ICD: International Classification of Disease
 10th edition
- ICIDH: International Classification of Impairments, Disabilities, and Handicaps
 - Second edition of ICIDH was endorsed at the 54th World Health Assembly with the title International Classification of Functioning, Disability and Health (in short ICF) in May 2001

ICF

 The ICF puts the notions of 'health' and 'disability' in a new light. It acknowledges that every human being can experience a decrement in health and thereby experience some degree of disability. Disability is not something that only happens to a minority of humanity. The ICF thus 'mainstreams' the experience of disability and recognizes it as a universal human experience. By shifting the focus from cause to impact it places all health conditions on an equal footing allowing them to be compared using a common metric – the ruler of health and disability. Furthermore ICF takes into account the social aspects of disability and does not see disability only as a 'medical' or 'biological' dysfunction. By including Contextual Factors, in which environmental factors are listed ICF allows to records the impact of the environment on the person's functioning.

Components of ICF

- Body Functions: Mental, Sensory etc.
- Body Structure: Nervous System etc.
- Activities and Participation:
 - General Tasks and Demand (ADL, IADL)
 - Major Life Areas (economic life, religion and spirituality, community, social and civic life)
- Environmental Factors:
 - Products and technologies

Measures of Health Expectancy

- disease prevalence
- bed-disability
- self-rated health
- Global Activity Limitation Index (GALI)
- Activity of Daily Living (ADL)
- Instrumental Activity of Daily Living (IADL)
- limitation of activities (disability)

Self-Rated Health

- self reported subjective measure
- age range: 20+?
- Question wording: "Would you say your health in general is"
- "excellent, very good, good, fair or poor" (English speaking countries and Nordic European countries)
- "very good, good, fair, bad or very bad" (EU following WHO recommendation

ADLs and IADLs

- self reported but little more objective
- age range: 50+?
- Activities of Daily Living

 bathing, eating, dressing, walking, toileting
- Instrumental Activities of Daily Living

 using telephone, managing money, shopping
- response categories: yes/no, some/lot/unable
- Wording: do you have difficulty, can you do, do you need help (vary by culture: eating)

Limitation of Activities

- self reported measure
- age range: ?
- activities can vary by age
 - playing, go to school, work, taking care of oneself
- question used to compute HE in the US and Japan

Global Activity Limitation Index (GALI)

- self reported measure
- based on ICF and measures participation
- age range: 15+? (working for younger ages)
- Wording: "For the past 6 months at least, to what extent have you been limited because of a health problem in activities people usually do?"
- Response categories: "not limited" "limited but not severely" "severely limited"

EUROPEAN JOURNAL OF PUBLIC HEALTH 2003; 13 (3 SUPPLEMENT): 6-14

Creating a coherent set of indicators to monitor health across Europe The Euro-REVES 2 project

JEAN-MARIE ROBINE, CAROL JAGGER AND THE EURO-REVES GROUP *

Washington Group's Disability Questions

- self reported measure
- based on ICF and measures functioning
- age range: 5+? (working on younger ages)
- short set: 6 questions for census
 - seeing, hearing, walking, cognition, self-care, communication
- long set: for health interview survey, etc.

Washington Group's -- continued

- Wording: "The next question ask about difficulties you may have doing certain activities because of a health problem." "Do you have difficulty seeing even if wearing glasses?"
- Response categories:
 - "no difficulty"
 - "some difficulty"
 - "a lot of difficulty"
 - "cannot do it at all"

Health Expectancy & Measures Used

"health states in question"

- self-rated health \rightarrow healthy life expectancy
- specific disease \rightarrow stroke-free life expectancy
- impairments \rightarrow impairments-free life expectancy
- functional limitation \rightarrow disability-free life expectancy
- ADL limitation \rightarrow active life expectancy
- dementia \rightarrow dementia-free life expectancy

Acronyms of Summary Measure

- Health Expectancy
 - **DFLE**: Disability-Free Life Expectancy
 - ALE: Active Life Expectancy
 - HLY: Healthy Life Years
- GBD
 - DALY: Disability-Adjusted Life Year
 - HALE: Health-Adjusted Life Expectancy
 - DALE: Disability-Adjusted Life Expectancy
 - HLE: Healthy Life Expectancy

Methods of Computing Health Expectancy

- Prevalence-Based (Sullivan) Method (1971)
- Double Decrement Life Table Method (1983)
- ✓ Multistate Life Table Method (1989)
- ✓ Grade of Membership (GoM) Approach (1993)
- ✓ The Global Burden of Disease Approach (1997)
 DALY, DALE, HALE
- ✓ Microsimulation Method (1995)
- ✓ Bayesian Approach (2003)

Sullivan Method

- Daniel F. Sullivan
 - 1966: "Conceptual Problems in Developing an Index of Health"
 - 1971: "A Single Index of Mortality and Mobidity"
- Data: Life Table, Prevalence Rates, Institutionalization Rates
- easy to calculate and collect data
- applied by many countries to compute health expectancy

Multistate Life Table Method

Method existed but applied to Health Expectancy Research by

Rogers A., Rogers R., Branch (1989) Rogers R., Rogers A., Belanger (1989) Rogers A., Rogers R., Belanger (1990)

Multistate Life Table Method



Data Used to Compute Health Expectancy

Cross Sectional Data

- Sullivan Method (need Life Tables)

- Longitudinal or Panel Data
 - Double Decrement Life Table Method
 - Multistate Life Table Method
 - GOM Method
 - Simulation Method

<u>http://content.iospress.com/articles/statistical</u>
 <u>-journal-of-the-iaos/sji00840</u>

Statistical Journal of the IAOS 30 (2014) 209–223 DOI 10.3233/SJI-140840 IOS Press

The methods and materials of health expectancy

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Trends in Disability-Free Life Expectancy Among Chinese Older Adults

Jufen Liu Gong Chen, PhD Xinming Song, PhD Peking University, Beijing, China Iris Chi, DSW University of Southern California Xiaoying Zheng, PhD Peking University, Beijing, China Journal of Aging and Health Volume 21 Number 2 March 2009 266-285 © 2009 Sage Publications 10.1177/0898264308328978 http://jah.sagepub.com hosted at http://online.sagepub.com

Objectives: This study evaluates trends in disability-free life expectancy (DFLE) of Chinese adults aged 60 and older. **Methods:** Based on two national disability surveys in 1987 and 2006 as well as mortality data from World Population Prospects, the Sullivan method was used to calculate DFLE. **Results:** DFLE increased from 13.0 to 13.9 years at age 60 and from 1.2 to 1.5 years at age 90 in1987 and 2006, respectively. The proportion of DFLE increased after age 75. The proportion of DLE_x with severe disability decreased while that of least disability increased. Onset of disability was delayed from 0.3 years to 4.7 years across disability types. **Conclusions:** Trends in DFLE by age and severity of disability as well as the delayed onset of disability provide evidence for the compression of morbidity among the oldest old in China. But a similar trend was not found among the young-old.



Open Access

Regional variations in and correlates of disabilityfree life expectancy among older adults in China

Jufen Liu^{1,2†}, Gong Chen^{1†}, Iris Chi³, Jilei Wu¹, Lijun Pei¹, Xinming Song¹, Lei Zhang¹, Lihua Pang¹, Youli Han⁴, Xiaoying Zheng^{1*}

Abstract

Background: Considerable socioeconomic and health inequalities have been reported in China. However, because of a lack of appropriate data, limited research has been conducted on variations in disability-free life expectancy (DFLE) among older adults. This study aimed to use the most up-to-date disability survey data to explore geographical variations in DFLE at age 60 in China and to identify the socioeconomic and health care factors that partially account for these variations.

Methods: This study used 2006 mortality data extrapolated from the 1990 and 2000 Census and disability data from a national disability survey conducted in 2006. Disability was performance based and was diagnosed by trained physicians. DFLE was calculated by region using the Sullivan method. Multiple linear regression models by gender were conducted to explore correlates of DFLE.

Results: DFLE at age 60 varied widely by region, from 11.2 to 20.8 years in 2006. Per capita gross domestic product, proportion of urban residents, and access to health care were the primary factors associated with geographical variations in DFLE.

Expected Lifetime with and without Cataract among Older Adults in China

Vanessa Yong • Danan Gu • Min Chen • Yasuhiko Saito

Abstract Despite its curability by a simple and low-cost surgical procedure, cataract remains the leading cause—accounting for almost one-half—of all blindness in the world. The problem is particularly severe in developing countries, and with the ageing of populations and increasing life expectancy, the burden of cataract disease is expected to increase substantially in the coming years. Using a demographic approach, this study examined the prevalence of cataract and estimated lifetime with and without cataract among older adults in China, a rapidly ageing country with the world's largest population. Data came from the 2002 Chinese Longitudinal Healthy Longevity Survey and life tables in the same year. Sullivan's method was used. The results indicated that overall, 5.7% percent of Chinese aged 65 and over reported having cataract that is diagnosed by an ophthalmologist. Cataract increases with age, affects women more than men, and is higher in urban than rural areas. At age 65, men and women can expect on average 0.7 years (4.7%) and 1.2 years (7.3%) of remaining life with cataract, respectively. The corresponding figures for urban and rural older adults are 1.7 (9.8%) and 0.6 (4.1%) years. The prevalence rates and life expectancy with cataract were likely underestimated given the low levels of eye examinations to detect eye diseases among the Chinese, particularly in rural areas.

Changes in total and disability-free life expectancy among older adults in China: Do they portend a compression of morbidity?

Zachary Zimmer^{1*}, Mira Hidajat², and Yasuhiko Saito^{3,4}

Abstract: The purpose of this research is to determine whether disability-free life expectancy (DFLE) in China has been increasing more rapidly than total life expectancy (TLE). Such a scenario would be consistent with a compression of morbidity, a situation that is especially desirable in a country experiencing rapid population aging and gains in old-age longevity. Using the Chinese Longitudinal Healthy Longevity Study, an exponential survival regression is used to calculate TLE. The Sullivan method is then employed for computing DFLE. Results for a 65 and older sample are compared across data collected during two periods, the first with a 2002 baseline and a 2005 follow-up (N=15,641) and the second with a 2008 baseline and a 2011 follow-up (N=15,622). The first comparison is by age and sex. The second comparison divides the sample further by rural/urban residence and education. The ratio of DFLE/TLE across periods provides evidence of whether older Chinese are living both longer and healthier lives. The findings are favorable for the total population aged 65+, but improvements are only statistically significant for females. Results also suggest heterogeneous compression occurring across residential status with the urban population experiencing more favorable changes than their rural counterparts. Results both portend a compression of morbidity and continuing disadvantage for rural residents who may not be participating in population-wide improvements in health.



Gender Differences in Health Expectancies across the Disablement Process among Older Thais

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Results

The average number of years lived with and without morbidity and disability as measured by multiple dimensions of health varied and gender differences were not consistent across measures. At age 60, males could expect to live the most years on average free of depression (18.6 years) and ADL disability (18.6 years) and the least years free of chronic diseases (9.1 years). Females, on the contrary, could expect to live the most years free of ADL disability (21.7 years) and the least years free of IADL disability (8.1 years), and they consistently spent more years with all forms of morbidity and disability. Finally, and for both genders, years lived with cognitive impairment, depression and ADL disability were almost constant with increasing age.



Regional and Gender Differences in Years with and without Mobility Limitation in the Older Population of Thailand

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 Institute for Population and Social Research, Mahidol University, Salaya, Phutthamonthon, Nakhon

Results

At age 60, females compared to males, spent significantly fewer years without mobility limitation (male-female = 3.2 years) and more years with any limitation (female-male = 6.7 years) and with severe limitation (female-male = 3.2 years). For both genders, years lived with severe limitation were remarkably constant across age. Significant regional inequalities in years lived without and with limitation were evident, with a consistent pattern by gender in years free of mobility limitation (Central ranked the best and the North East ranked the worst). Finally, both males and females in the South had the longest life expectancy and the most years of life with severe mobility limitation. J. Biosoc. Sci., (2014) 46, 462–479, © Cambridge University Press, 2013 doi:10.1017/S002193201300062X First published online 8 Nov 2013

CHANGING AGE PATTERNS OF MORBIDITY VIS-À-VIS MORTALITY IN INDIA

PERIANAYAGAM AROKIASAMY AND SURYAKANT YADAV¹

Department of Development Studies, International Institute for Population Sciences, Mumbai, India Summary. The combined effects of decreased fertility and mortality coupled with increasing survivorship across most ages have been upsetting the levels and age patterns of morbidity and mortality in India. This study examined data from the National Sample Survey (NSS) and Sample Registration System (SRS) of India. The results reveal marked structural changes in the age patterns of morbidity and mortality. The analysis also tested whether morbidity contours are being compressed or expanded, connecting it with the ongoing processes of demographic and epidemiological transition. The Sullivan (1971) method was used to estimate the health ratio over three time periods to ascertain the expansion of morbidity. The results reveal an exceptional rise in the prevalence rate of chronic non-communicable diseases in ages 60 and above. The proportion of unhealthy years of the total life expectancy has increased more than before for all older age groups. Overall, the results confirm that an expansion of morbidity is in progress, with a heavier and cumulated concentration of morbidity in older ages. The expansion of morbidity hypothesis is validated for major categories of population: rural, urban, male and female. Older females bear a much heavier burden of chronic non-communicable diseases and are vulnerable to a higher proportion of unhealthy years. The age-structural shifts in morbidity and mortality signal the steady progress of epidemiological transition in India.

Does Increasing Longevity Lead Increasing Disability? Evidence from Indian States

Nandita Saikia Jayanta Kumar Bora^{*}

Abstract

Findings reveal that almost all types of disability increase with increasing age. There exists greater prevalence of disability in rural areas, among elderly populations and the oldest-old women in India. The disability prevalence rate is systematically more among Indian men than Indian women until age 79. Among the oldest age group (80+), Indian women are more disabled than men. Onaverage, both males and females are expected to live about two years in an unhealthy condition. In general, there exists positive association between LE and HLE.

The findings recommend that policy and intervention on disability should be prorural, pro-gender and pro-elderly to reduce the disparity in disability among the Indian population. Further, modification of census disability definition as per the International Classification of Functioning, Disability and Health model of the World Health Organization is urgently needed for accurate measurement of the disabled population in India.



Advance Access publication October 29, 2015

Research Article

Estimating the Years Lived With and Without Age-Related Sensory Impairment

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Background: The aim of this study was to estimate the expected years lived with hearing impairment, vision impairment, and dual sensory impairment among older adults.

Methods: A total of 4,160 adults (45.1% men) from two Australian community based studies were followed for up to 16 years (average 8.9 years). Hearing impairment was defined by a pure-tone average (500–4000 Hz) greater than 25 dB in the better ear. Vision impairment was defined by presenting distance visual acuity worse than 6/12 (20/40). Postliminary analyses were also conducted for moderate levels of sensory impairment. Dual sensory impairment was defined by concurrent hearing and vision impairment. Multistate Markov models were used to calculate sensory life expectancies based on transition probabilities between health states (no sensory impairment, sensory impairment, and death).

Results: Based on thresholds for mild impairment, men aged 65 had a total life expectancy of 19.4 years, and were estimated to live for 10.4 years (95% confidence interval [CI]: 9.1, 11.7) with hearing impairment, 2.8 years (95% CI: 2.4, 3.2) with vision impairment, and 2.2 years (95% CI: 1.8, 2.6) with dual sensory impairment. Women aged 65 had a total life expectancy of 23.2 years, and were estimated to live for 12.9 years (95% CI: 11.9, 13.9) with hearing impairment, 3.9 years (95% CI: 3.4, 4.4) with vision impairment, and 3.2 years (95% CI: 2.7, 3.7) with dual sensory impairment.

Conclusions: In addition to being highly prevalent, hearing and vision impairment affect older adults for substantial periods of their remaining life. Given their broad ranging impacts on health and well-being, sensory impairments are ideal targets for strategies to compress morbidity in late life.

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Vietnam

- Data: 15% sample of the most recent Census in 2009;
- Construction of life tables by sex, education & region
 - Griffith Feeney' spreadsheet: replacing the MATCH procedure in the MORTPAK software.
- Estimation of disability prevalance by sex, education & region
 - Using the ICF for Censuses;
 - 4 domains: Do you have any difficulty ... <seeing?
 hearing? walking? remembering?>
 - Four levels of difficulty: 1) Not at all; 2) Difficult; 3) Very difficult; 4) Cannot do it

Find	dings	5						
		Ma	le			Fen	nale	
Age	LE	HE	Diff.	% wo disability	LE	HE	Diff.	% wo disability
0	70.2				75.6			
5	67.5	59.1	8.4	87.6	71.9	61.5	10.4	85.5
15	57.8	49.5	8.3	85.7	62.0	51.7	10.3	83.4
40	34.3	26.3	8.0	76.7	37.9	27.8	10.0	73.5
60	18.1	11.1	7.1	61.0	20.4	11.4	9.0	55.8
80+	8.3	2.7	5.6	32.1	8.9	2.3	6.6	25.5

Possibility of Comparative Study of Health Expectancy in Asia and Pacific Using Washington Group's Short Set

 Bangladesh, Cambodia, Fiji, Kazakhstan, Pakistan, Philippines, Sri Lanka, Turkey, Vietnam

IPUMS International

• https://international.ipums.org/international/



Singapore.

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Country by sex enough?

 Table 5. Estimates of Life, Disability, and Disability-Free Life Expectancy Estimates

 for Men and Women Across Several Covariate Scenarios and Select Ages

			Men		Women			
Scenarios	Age	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

Longitudinal Study of Aging: Asia

- Survey of Health and Living Status of the Middle Aged and Elderly in Taiwan: 1989
- Indonesian Family Life Survey (IFLS)
- Chinese Longitudinal Healthy Longevity Survey (CLHLS)
- Chinese Health and Retirement Longitudinal Study (CHARLS)
- Korean Longitudinal Study of Ageing (KLoSA)

Longitudinal Study of Aging: Asia 2

- Longitudinal Aging Study in India (LASI)
- Social Isolation, Health and Lifestyles Survey
 - baseline commissioned by MCYS in 2009
 - aged 60+
 - 2nd wave--2011: Panel on Health and Aging of Singaporean Elderly (PHASE)

Longitudinal Study of Aging: Japan

- National Survey of the Japanese Elderly: 1987
- Japanese Health and Retirement Survey: 1999
- National Longitudinal Survey of Middle Aged and Elderly in Japan: 2005
- Japanese Survey of Aging and Retirement: 2007
- Nihon University Japanese Longitudinal Study of Aging: 1999

Future Direction

- Develop common health indicator or select one or set of questions already in use and include them in surveys whenever possible.
- Promote longitudinal study using common set of questions.
- Examine determinants of health and causal mechanism of improving health expectancy to increase health expectancy.