

Application of Health Expectancy Research on DHS Data: A Case of Bangladesh

Md. Ismail Tareque^{1,2,3}, Yasuhiko Saito², Kazuo Kawahara¹

1. Department of Health Policy Science, TMDU, Tokyo 113-8519, Japan

2. ARISH, Nihon University, Tokyo, 102-8251, Japan


3. Department of Population Science and HRD, University of Rajshahi, Bangladesh

Introduction

- ❑ Life expectancy is increasing all over the world which does not mean a healthier population (Jagger et al. 2008)
- ❑ The average life expectancy at birth in Bangladesh has increased from 53 years in 1975 to 69 years in 2010



Bangladesh

Flag	
Area	147,570 km ²
Population	148 million
Density	964.42/km ² (9th)
<u>HDI</u> (2011)	0.500 (low) (146th)

Introduction

Year	Life Expectancy (Year)	Year	Population (Million)
1970-1975	36.0	1971	67.9
1975-1980	52.9	1974	69.6
1980-1985	55.6	1981	82.9
1990-1995	60.8	1991	107.8
2000-2005	65.9	2001	131.9
2010-2015	69.4	2011	148.0

Source: World Population Prospectus, 2010 and Bangladesh Population Census, 2011.

Introduction

- ❑ There are concerns of HIV/AIDS, tuberculosis, malaria, heart disease, diabetes, asthma, cancers
- ❑ Health expectancy researches are very rare and very little has been done in this field for Bangladesh

Objectives and Definition

- ❑ To examine the change in work days loss free life expectancy for only Bangladeshi currently married males of age 30-54 years who were employed for whole years between year 2004 and 2007.
- ❑ Work loss days are the days in which a person missed work at a job or business or regular activities because of illness or injury.
- ❑ Illnesses include:
 1. Tuberculosis
 2. Asthma
 3. Diabetes
 4. High Blood Pressure
 5. Heart Problem
 6. Malaria/Fever and
 7. Jaundice/Hepatitis.

Data and Methods

□ Sullivan method (1971)

Two key pieces
of information

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graph TD; A[Two key pieces of information] --> B[Standard period life tables]; A --> C[Proportion of unable days to work by age];
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Standard period
life tables

Proportion of unable
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Standard period
life tables

Proportion of unable
days to work by age

Center for Health and Population Research,
Scientific Reports produced by International
Centre for Diarrhoeal Disease Research,
Bangladesh (ICDDR,B)

Bangladesh Demographic and Health
Surveys (BDHS),
carried out in year 2004 and 2007
(BDHS 2004 and BDHS 2007)

Cautions Taken

- ❑ The present analyses confined only currently married males aged 30-54 years who works throughout the year and who did not have other type diseases that prevent them from doing regular activities.

Table 1: Percentage distribution of male by marital status and age group, 2001

Age group	Currently married	Others (never married, widowed/divorced/separated)
30-34	87.7	12.3
35-39	95.0	5.0
40-44	96.3	3.7
45-49	97.0	3.0
50-54	96.1	3.9

Source: Bangladesh Population Census, 2001.

Figure 1: Selection of sample for 2007 year

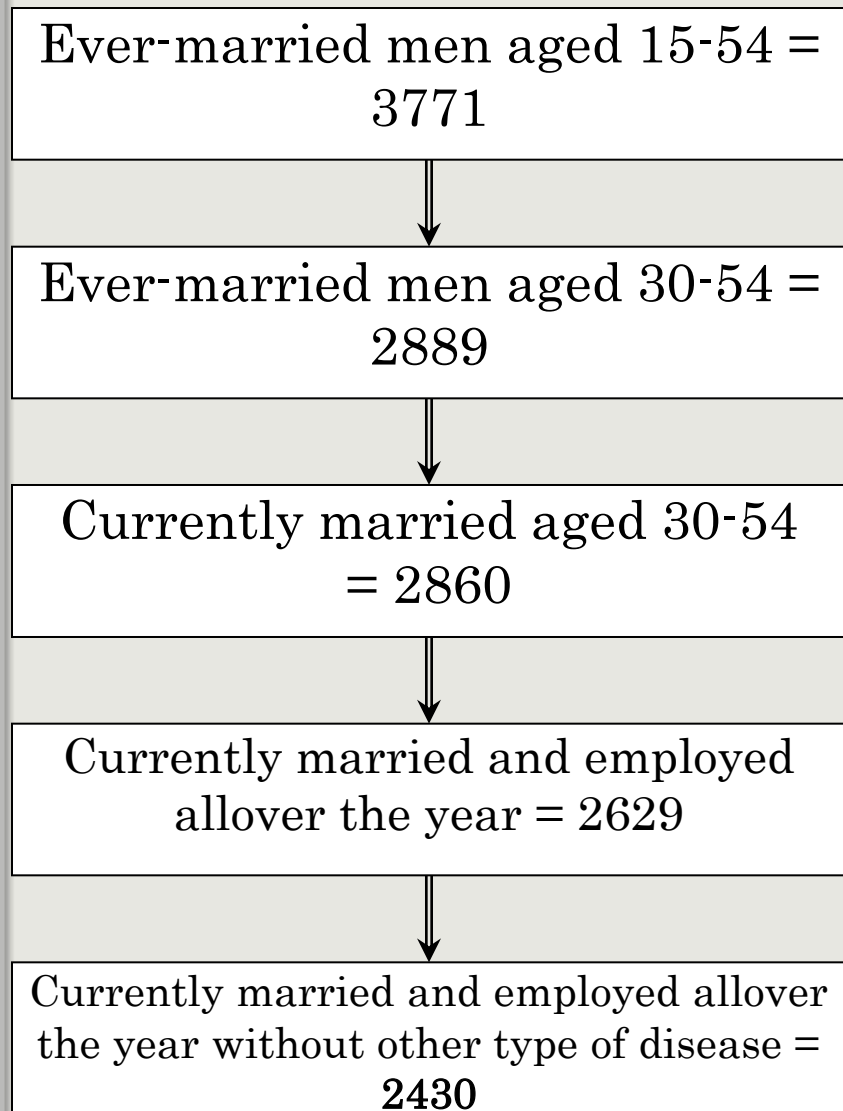
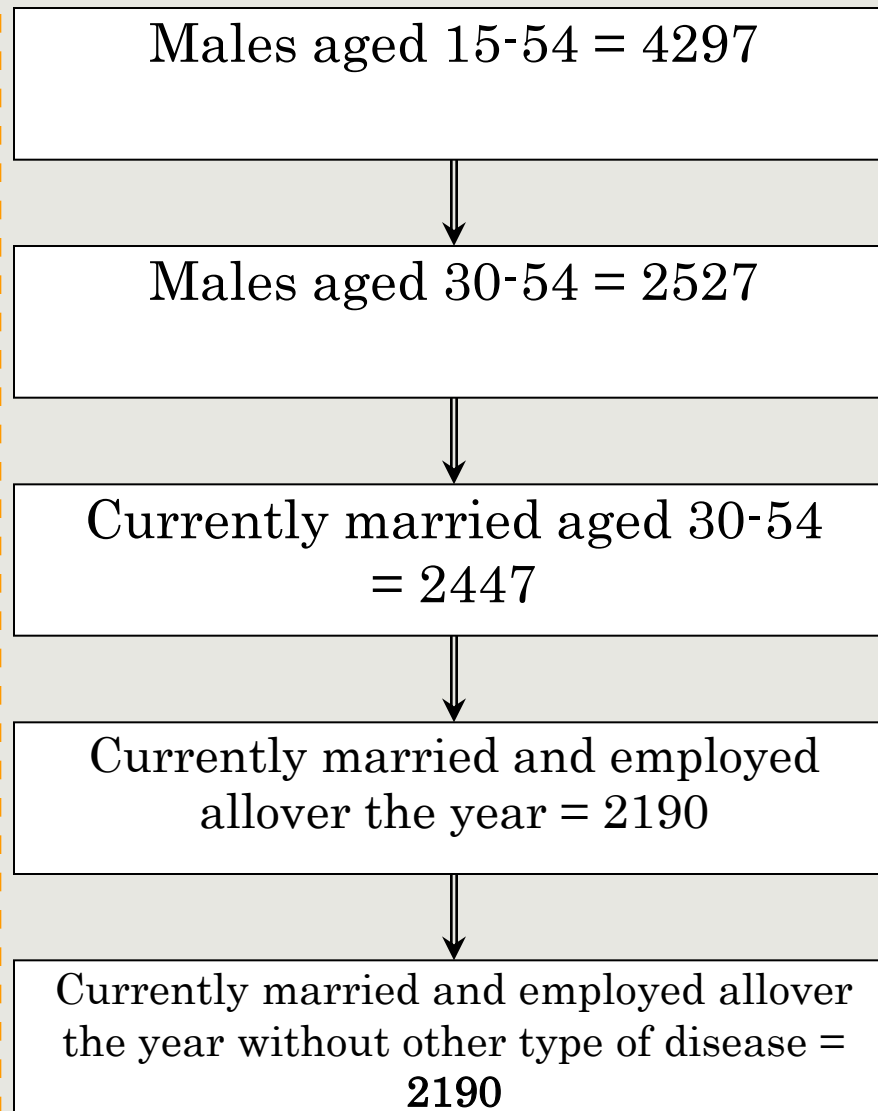


Figure 2: Selection of sample for 2004 year



Data and methods – at a glance

- ❑ Sullivan method (Sullivan 1971) to compute the work loss days free life expectancy between 2004-2007.
- ❑ Age specific proportion of life unable to work due to specific seven illnesses obtained from the 2004 and 2007 BDHS.
- ❑ SAS 9.1 (SAS Institute Inc., Cary, NC, USA) was used for extracting data from BDHS surveys and sample weights were used to accommodate the survey designs.

Results

Table 2: Mean number of work loss days during last 3 months preceding the surveys

Year 2007		
Age group	Mean number of work loss days	Number of respondents
30-34	6 1.44	423
35-39	1.96	590
40-44	1.42	495
45-49	2.08	480
50-54	12 2.97	442
Total		2430

Year 2004		
30-34	11 2.67	464
35-39	2.63	453
40-44	2.84	457
45-49	2.83	358
50-54	16 3.89	178
Total		1910

Table 3: Number (percentage) of respondents, had been prevented from doing normal work or regular activities due to selected 7 diseases

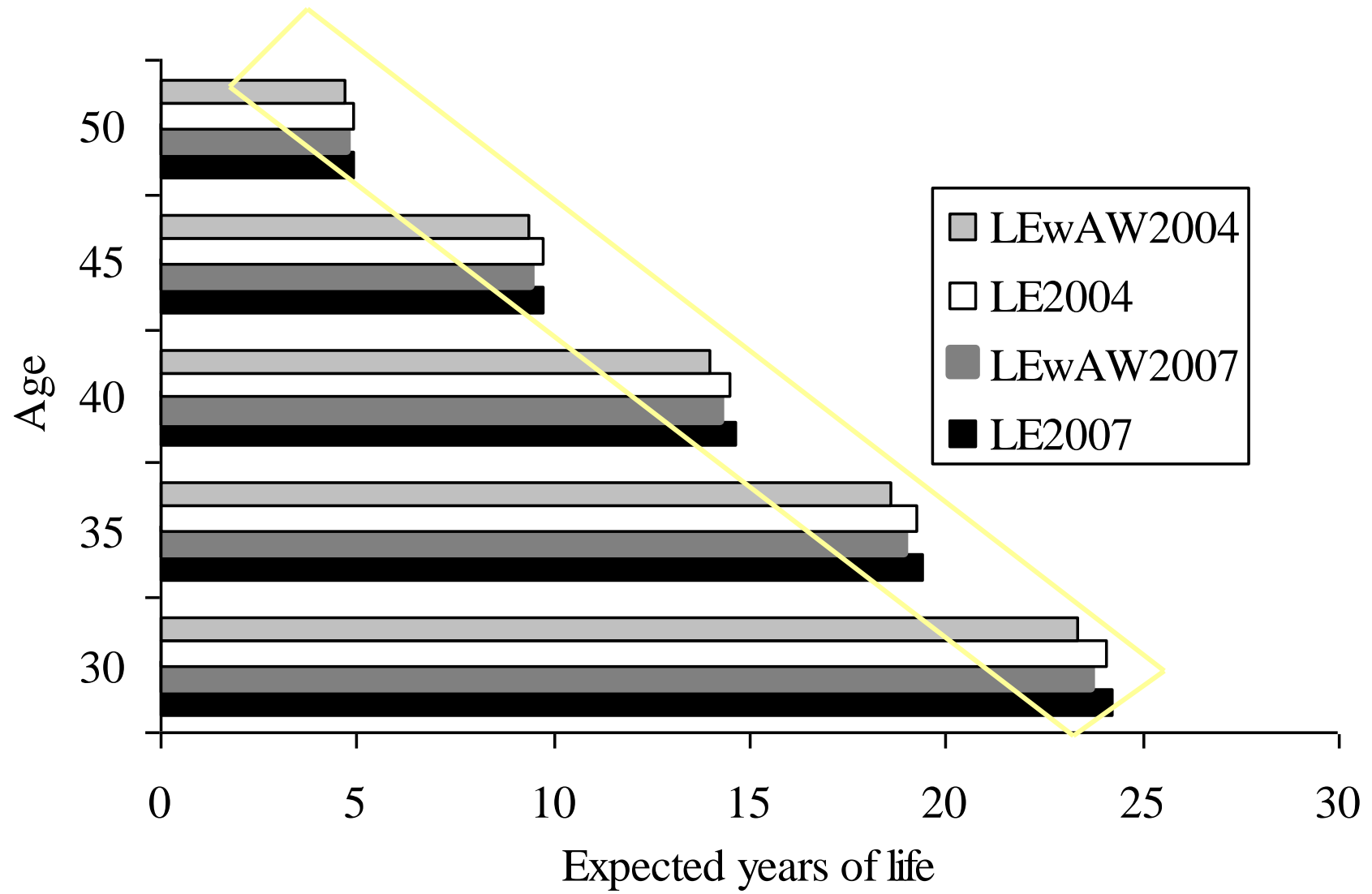
Year 2007	
Diseases	Total Population
Malaria/Fever	↓ 262 (82.33)
HP	30 (9.53) ↑
Jaundice/Hepatitis	18 (4.74) ↑
HBP	18 (4.67) ↑
Diabetes	8 (1.69) ↑
Asthma	↓ 6 (1.29)
Tuberculosis	↓ 2 (0.94)
Year 2004	
Malaria/Fever	317 (82.61)
HP	34 (8.92)
Jaundice/Hepatitis	19 (3.64)
HBP	12 (2.57)
Asthma	9 (1.92)
Tuberculosis	7 (1.81)
Diabetes	6 (1.48)

Notes: HP= Heart Problem, HBP=High Blood Pressure.

Table 4: Life expectancy and work loss days free life expectancy by age and year

Year 2007						
Age	Life expectancy	Work loss days free life expectancy	95% CI	Proportion of life able to work		
30	24.2	23.7	(23.6-23.8)	97.8		
35	19.4	19.0	(18.8-19.1)	97.7	0.1	
40	14.6	14.3	(14.2-14.4)	97.6		
45	9.7	9.5	(9.4-9.6)	97.2		
50	4.9	4.7	(4.6-4.8)	96.7		
Year 2004						
30	24.1	23.3	(23.1-23.5)	96.7		
35	19.3	18.6	(18.4-18.8)	96.6		
40	14.5	14.0	(13.8-14.2)	96.5		
45	9.7	9.4	(9.2-9.5)	96.3		
50	4.9	4.7	(4.6-4.8)	95.7		

Figure 3: Difference among LE and LEwAW during 2004 - 2007



Notes: LE indicates life expectancy; LEwAW indicates life expectancy with ability to work.

Continuation of Table 4.....

Difference among work loss days free life expectancies during 2004-2007

Age	Standard error for 2007	Standard error for 2004	Differences in work loss days free life expectancy from 2007 to 2004	z static
30	0.07	0.11	0.40	2.21*
35	0.07	0.10	0.34	2.07*
40	0.06	0.09	0.30	1.96*
45	0.05	0.09	0.10	0.74 ^{ns}
50	0.04	0.07	0.04	0.32 ^{ns}

Notes: * indicates $p < 0.025$; ns indicates not statistically significant.

Summary and Discussion

- ❑ Average work loss days for age groups have been decreased in 2007
- ❑ Significant increase in work loss days free life expectancy in 2007
- ❑ Diseases prevalence were not in a single direction

Summary and Discussion

- ❑ Improvement in work loss days free life expectancy may be due to WHO contributions between 2004-2007
- ❑ Contribution of the Strategic Investment Plan (SIP) 2003-2010 for modernization of the health sector, and the implementation of Health Nutrition and Population Sector Programme (HNPSP) 2003-2010
- ❑ Institutionalized population was not taken into account due to unavailability of data

Conclusion and Future Work

- ❑ Insights about how many days of work life the Bangladeshi males had due to the 7 diseases between 2004 and 2007
- ❑ For further improvement in work loss days free life expectancy and controlling the diseases, similar researches should be done
- ❑ Keeping consistent questions and orders over time are needed
- ❑ Using Bangladesh Household Income and Expenditure Survey (HIES) data, health expectancy calculation is the next step

Thank you very much

