

# **Health Status, Functional Disability and Quality of Life: An Assessment of Wellbeing of India's Older Population**

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## **Abstract**

Owing to the decline in fertility, mortality, and improvement in longevity, the number of the older persons is increasing in India. To successfully address the challenges of the rapidly growing older population, it is essential to have an understanding of wellbeing of the older population. In this study, we examine the socio-demographic differentials with respect to health status, functional disability, and quality of life of the older population in India. The study uses the data from the World Health Organization sponsored "Study on Global Ageing and Adult Health (SAGE-INDIA)" of 2007. This pioneering survey gathered information from 6560 persons (aged 50 years and over) from six Indian states. All the three indicators of wellbeing shows that wellbeing is better for males than females, and that wellbeing deteriorates with increasing age. Wellbeing is positively associated with higher levels of education and economic status. This study shows that the outcome indicators vary significantly by socio-demographic characteristics. Any programme aimed at improving the wellbeing of the older population should be targeted to those who are poor, the aged, female, and uneducated. Social security measures, including pensions and health insurance are also crucial in ensuring the quality of life and wellbeing of the older population in India.

## Background

It is well known that ageing is a challenge for both the society and the policy makers. Any act to improve the wellbeing of the older population will be greatly influenced by the prevailing knowledge about their wellbeing. There has been significant improvement in health and wellbeing of population in India in the last four decades. Expectancy of life at birth has increased since 1971 by fourteen years for men and nineteen years for women. This advance owes to the three fold reduction in the infant mortality rate and the decline of total fertility rate from 5.2 to 2.5 during the period. The total fertility rate has reduced by half over the period. As a result, the population in India will be ageing at a rate that is much faster than that experienced in many of the developed countries in the first half of the 21st century ([United Nations, 2001](#)). The window of time for action for successfully addressing the challenges of the rapidly growing older population is limited. The number of people aged 50 years and above in India will increase from 13.4 percent in 2001 to 22.6 percent in 2026 ([Government of India, 2006](#)).

**Table 1:** Life expectancy at birth, Infant Mortality Rate, and Total Fertility Rate in India during 1970 - 2010.

Life expectancy at birth			Year	IMR	TFR
Year	Males	Females			
1970-75	50.5	49.0	1971	129	5.2
1980-85	55.4	55.7	1981	110	4.5
1991-95	59.7	60.9	1991	80	3.6
2000-05	62.3	63.9	2001	66	3.1
2006-10	64.6	67.7	2010	47	2.5

Source: Compendium of India's Fertility and Mortality Indicators, 1971-2007: Based on the Sample Registration System (SRS), Registrar General of India, Government of India, 2009 and Sample Registration System Statistical Report 2010.

Given the rate of increase in the number of older population and the complex nature of the country, there is a substantial need to understand the ageing issues to improve the quality of life and wellbeing of older population ([Raju, 2011](#)). The needs and problems of the elderly vary significantly according to their age, economic status, health, living status, and other such background characteristics. The health, in general tends to deteriorate as people get older.

Literature on health has consistently shown that the economic status has a direct bearing on the health status and quality of life of older population ([Mullis, 1990](#); [Ng, Hakimi, Byass, Wilopo, & Wall, 2010](#); [Ryff, 1995](#); [Van Minh, Byass, Chuc, & Wall, 2010](#)). Studies have also shown that older population who had better education and higher socio-economic status experienced better health and better quality of life ([Mullis, 1990](#); [Ryff, 1995](#)).

With the increasing changes in the household structure and in the roles and responsibilities of older population in India, it is imperative to look at their perceived health status, disability, and quality of life. A clear understanding of the health status, disability, and quality of life of older population and its contributing factors is crucial to respond effectively and efficiently to the various needs of the older population. The purpose of this paper is to look at the overall subjective wellbeing of the individual by assessing the health status, functional disability and quality of life of people aged 50 years and over in India. Knowledge about factors that lead to wellbeing among the older population can be of significance, in improving the lives of older population.

## **Data and Methods**

### **Data**

The study relied on data from the World Health Organization sponsored Study on Global Ageing and Adult Health (WHO-SAGE) in India. SAGE is part of global longitudinal study implemented in six countries – China, India, Ghana, Mexico, Russia, and South Africa. The survey represents one of the main sources for studying health and wellbeing of the older persons in age 50 and above and their social determinants. In India, SAGE was conducted in six states – Assam, Karnataka, Maharashtra, Rajasthan, Uttar Pradesh, and West Bengal. The study in India was conducted by International Institute for Population Sciences (IIPS) in 2007. SAGE covered a nationally representative sample of 10600 households across the six states. Our analysis greatly relies on the information gathered from 6,560 people aged 50 years and over, from the sample households.

### **Measurements**

#### **Outcome variables**

In this study, self-rated health, functional disability (WHODAS), and quality of life (WHOQoL) are taken as outcome variables. Self-rated health is one of the basic measures to assess an

individual's perceived sense of well-being. It was primarily assessed by asking questions on eight different domains of health namely mobility, self-care, pain and discomfort, cognition, interpersonal activities, sleep and energy, affect, and vision. Respondents were asked the extent to which they have difficulty in, or experience problems with, carrying out a task or an action. Two questions are asked about each health domain. Each response is rated on a five point scale (none = 1, mild = 2, moderate = 3, severe = 4, and extreme = 5). A summary health status score was generated and later converted into 0-100 scale. A lower score would mean a better health status and vice-versa.

WHO Disability Assessment Schedule – WHODAS 2.0 was used to assess functional disability. Functional disability was calculated by rating difficulty experienced by respondents in performing certain activities during the past 30 days prior to the interview on 12 items. Each response was rated on a five point scale (none = 1, mild = 2, moderate = 3, severe = 4, and extreme = 5) ([WHO, 2010](#)). From the responses, a WHODAS summary score was generated. The generated summary score ranged from 12-60 which was later converted to 0-100 scale. The higher the score the higher will be functional disability and vice-versa.

Quality of life was measured using the World Health Organisation Quality of Life (WHOQoL) scale. WHO defines “quality of life as the individual's perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns” (The WHOQOL Group, 1994). In this study WHOQoL is measured by asking how satisfied are the older population with the following issues 1) health; 2) yourself; 3) your ability to perform daily living activities; 4) your personal relationships; 5) the conditions of your living place; 6) how you rate your overall quality of life; 7) Do you have enough energy for your everyday life?; and 8) Do you have enough money to meet your needs. Based on these eight questions covering domains of personal and social wellbeing of individuals, WHOQoL score has been generated. The scores for quality of life ranged from 8 to 40 and were transformed to 0 -100 scale to correspond to other scores. A very low score would mean a very high quality of life and vice versa.

### **Independent variables**

We considered factors that could be associated with health status, functional disability, and quality of life that included; age, sex, education, marital status, household asset score (wealth quintile),

place of residence, and working status. We classified age into four categories; 50-59 years, 60-69 years, 70-79 years and 80 years and over. Education was recorded into no formal education; less than eight years of formal education; nine to twelve years of formal education; and twelve years or more of formal education. We categorised marital status into two categories: currently married; and presently single (i.e. those who had never married or widowed or separated). To understand the potential association of economic status in with the outcome variables, we used a household asset score. The household asset score was generated using principal component factor analysis from 19 variables. Working status was recoded into three categories: those who are currently working; those who have worked but currently not working; and those who have never worked.

A logistic regression model has been used in the analysis to understand the relationship of various variables to health status, functional disability, and quality of life. The median values of scores of health status (39), functional disability (36.7), and quality of life (50) were taken as the threshold for defining higher and lower scores. The reliability of variables used in constructing the summary scores was tested using Cronbach's alpha. The scale reliability coefficient for health status, functional disability, and quality of life were 0.92, 0.87, and 0.86 respectively.

## **Results**

About forty five percent of the sample population belonged to the age group 50 - 59 years while about thirty four percent were aged between 60 and 69. Only 21 percent of the sample population were above 70 years of age and over (Table 1). Education level was low in the study population. About fifty two percent had no formal education. Only eighteen percent had more than 9 years of formal education. More samples were from the highest wealth quintile as the quintiles are population based. About three by fourth of the population was from rural areas. One by fourth of the population was presently single (either widowed or living separately, or never married).

**Table 1.** Background characteristics (%) of the study population in India, 2007.

<b>Variables</b>	<b>Respondents (N=6560)</b>
<b>Age group</b>	
50-59	44.8
60-69	34.1
70-79	16.1
80+	5.0
<b>Sex</b>	
Male	50.4
Female	49.6
<b>Education</b>	
No formal education	51.8
Less than 8 years	30.1
9 to 12 years	12.5
More than 12 years	5.7
<b>Marital status</b>	
Currently married	74.1
Currently Single	25.9
<b>Economic status</b>	
1 <sup>st</sup> quintile	16.3
2 <sup>nd</sup> quintile	18.7
3 <sup>rd</sup> quintile	18.5
4 <sup>th</sup> quintile	21.6
5 <sup>th</sup> quintile	25.0
<b>Place of residence</b>	
Urban	25.6
Rural	74.5
<b>Working status</b>	
Currently working	40.4
Currently not working (but have worked before)	31.5
Never worked	28.1

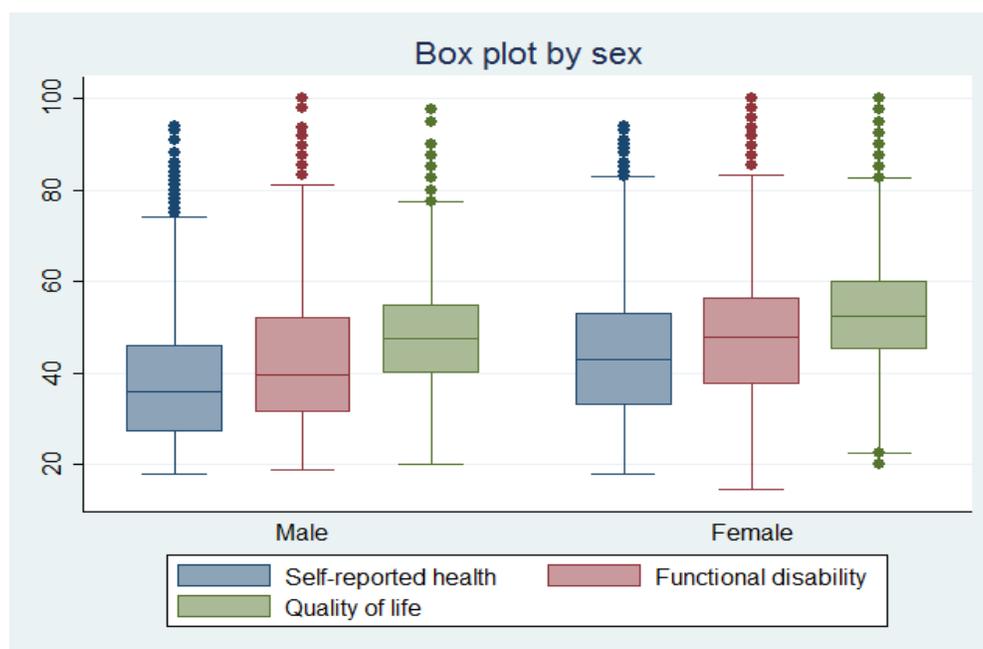
Means and standard deviations of the outcome variables assessed in the study population (3256 women and 3304 men) are shown in Table 2. All the three outcome variables show differences in the mean score between women and men. High differences were observed in health status ( $44 \pm 14$  vs.  $38 \pm 14$ ) and functional disability ( $49 \pm 15$  vs.  $43 \pm 14$ ) scores. In all the indicators, higher scores were observed for women, indicating lower health status, higher disability, and lower quality of life.

**Table 2.** Comparison of outcome variables between older women and older men in India, 2007.

Outcome Variable	Women (N=3256)		Men (N=3304)		Total (N=6560)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Self-rated health	43.97	14.33	37.71	13.51	40.78	14.26
Functional Disability	48.89	14.60	42.85	14.00	45.81	14.61
Quality of life	52.50	12.28	49.09	11.84	50.76	12.18

The distribution of health status, functional disability and quality of life scores for older women and men in the study population is presented with the help of a boxplot in Figure 1. The medians and their respective inter quartile ranges for older women were: 42 (33.0-52.0) for health status; 48.9 (37.5-56.3) for functional disability; and 52.5 (45.0-60.0) for quality of life. The median scores were lower for men indicating higher health status, better functional ability, and better quality of life. The medians and their respective inter quartile ranges for older men were: 36 (28.0-46.0) for health status; 41.7 (31.3-52.1) for functional disability; and 50.0 (42.5-57.5) for quality of life. The comparison between older women and older men on all the three outcome variables revealed significant differences.

**Figure 1.** Box plot showing the distribution of scores of self-rated health, functional disability and quality of life by sex, India 2007.



The central line represents the median, and the lower and upper limits represent the 25th and 75th percentiles, respectively. The vertical lines represent the minimum and maximum scores.

**Table 3.** Factors associated with health status, functional disability and quality of life of persons aged 50 years and over in India, 2007.

Characteristics	Health status	WHODAS	WHOQoL
<b>Age group</b>			
50-59 <sup>®</sup>			
60-69	0.69*** (0.58 - 0.83)	0.67*** (0.56 - 0.81)	0.79** (0.65 - 0.95)
70-79	0.45*** (0.34 - 0.59)	0.40*** (0.31 - 0.52)	0.61*** (0.47 - 0.8)
80+	0.33*** (0.23 - 0.48)	0.25*** (0.17 - 0.35)	0.34*** (0.23 - 0.49)
<b>Sex</b>			
Male <sup>®</sup>			
Female	0.76** (0.61 - 0.94)	0.86 (0.7 - 1.05)	0.96 (0.77 - 1.19)
<b>Education</b>			
No Education <sup>®</sup>			
Less than 8 years	1.36** (1.12 - 1.65)	1.46*** (1.21 - 1.77)	1.05 (0.86 - 1.28)
9 to 12 years	1.99*** (1.44 - 2.73)	2.22*** (1.6 - 3.08)	1.53** (1.08 - 2.15)
More than 12 years	3.07*** (2 - 4.71)	4.92*** (3.13 - 7.73)	1.9** (1.25 - 2.89)
<b>Marital status</b>			
Currently married <sup>®</sup>			
Currently Single	0.77** (0.63 - 0.94)	0.77** (0.63 - 0.93)	0.79** (0.64 - 0.97)
<b>Economic status</b>			
1 <sup>st</sup> quintile <sup>®</sup>			
2 <sup>nd</sup> quintile	1.48** (1.14 - 1.92)	1.47** (1.15 - 1.88)	1.8*** (1.37 - 2.37)
3 <sup>rd</sup> quintile	1.51** (1.16 - 1.96)	1.42** (1.1 - 1.83)	2.23*** (1.72 - 2.9)
4 <sup>th</sup> quintile	1.69*** (1.3 - 2.21)	1.66*** (1.27 - 2.15)	3.33*** (2.57 - 4.32)
5 <sup>th</sup> quintile	2.35*** (1.8 - 3.07)	2.04*** (1.56 - 2.66)	6.26*** (4.7 - 8.32)
<b>Place of residence</b>			
Urban <sup>®</sup>			
Rural	0.73** (0.58 - 0.93)	1.07 (0.85 - 1.34)	0.97 (0.76 - 1.23)
<b>Working status</b>			
Currently working <sup>®</sup>			
Currently not working (but have worked before)	0.5*** (0.41 - 0.62)	0.52*** (0.43 - 0.64)	0.54*** (0.44 - 0.67)
Never worked	0.54*** (0.43 - 0.68)	0.54*** (0.43 - 0.68)	0.49*** (0.39 - 0.62)

\*p<=.10 \*\*p<=.05, \*\*\*p<=.001

Source: Study on Global Ageing and Adult Health (SAGE-INDIA), (IIPS and WHO, 2012).

Logistic regression shows that there was a gradient in the expected direction in the relationship between increasing age and better health status, lower WHODAS, and higher WHOQoL. As age increases health status deteriorates, disability increases, and quality of life goes down. Those who are aged 80 year and over were 75% more likely to report higher disability as compared those who are aged 50-59 years.

The analysis reveals that women report significantly poorer health status and higher disability, although they do not report a lower quality of life. Women may objectively have lower quality of life but they may not regard it as a lower quality of life. Women were 24% more likely than men to report poor health.

Increasing number of years of education has a significant positive impact on health status. Lower levels of education are related to increase in WHODAS. The relationship between number of years educated and WHOQoL is less significant as compared to health status and WHODAS. Living conditions also can greatly affect the health of the elderly. Those who are currently single are 27% more likely to report poor health status, higher WHODAS and lower WHOQoL.

There was an increase in the expected direction in the relationship between increasing economic status and all the outcome variables. However, inequality in terms of economic status was huge in quality of life that measures satisfaction with one's life. People in the richest quintile were 2 times more likely to report better health and better functional ability while they were 6 times more likely to experience better quality of life as compared to those who are in the poorest quintile. After controlling other independent variables, the influence of economic status reduced for health and functional disability. However, the effect of economic status lessened only marginally for quality of life even after controlling other independent variables. This shows that the subjective wellbeing of older population greatly depends on the economic status of the individual.

Those who have worked but are currently not working and those who have never worked are 50% more likely to report poor health status, higher WHODAS and poorer WHOQoL. In our study sample only 40% of all respondents are working. The rest of the 60% of the respondents are 50% less likely to report better health status, better ability, or high WHOQoL.

## **Discussion**

When absolute number is considered, India has the second largest older population in the world. Understanding and improving the wellbeing of this huge population is a challenge before India. In this study we assess socio-demographic differentials in the subjective wellbeing of people aged 50 years and over in India by measuring their health status, functional disability (WHODAS), and quality of life (WHOQoL). Higher years of education and better economic status are positively

related to better health status, lower levels of WHODAS and high WHOQoL. Women, those who are currently single, and those who have worked but currently not working are negatively related to better health status, lower levels WHODAS, and higher WHOQoL. Results show that age, sex, years of education, marital status, economic status, and working status have significant relationship with health status, WHODAS, and WHOQoL. All the three wellbeing indicators, although measuring different dimensions of wellbeing, showed similar patterns by socio-demographic characteristics. In India, the economic status of households assumes great relevance in the absence of social security measures for majority of the older population in India. Social security and economic assistance in the form of pensions, health insurance, and other benefits can help the older population in improving the overall wellbeing and quality of life of older population in India. These findings have considerable relevance for formulating the policies and programmes for older population in India.

## References:

- Government of India. (2006). Population Projections for India and States 2001-2026. New Delhi: Office of the Registrar General & Census Commissioner.
- Mullis, Randolph J. (1990). Measures of Economic Well-Being as Predictors of Psychological Well-Being. *Social Indicators Research*, 26(2), 119-135.
- Ng, N., Hakimi, M., Byass, P., Wilopo, S., & Wall, S. (2010). Health and quality of life among older rural people in Purworejo District, Indonesia. *Glob Health Action*, 3.
- Raju, S. Siva. (2011). Studies on Ageing in India: A Review *BKPAI Working Paper No. 2*. New Delhi: United Nations Population Fund (UNFPA).
- Ryff, Carol D. (1995). Psychological Well-Being in Adult Life. *Current Directions in Psychological Science*, 4(4), 99-104. doi: 10.2307/20182342
- The WHOQOL Group. (1994). Development of the WHOQOL: Rationale and current status. *International Journal of Mental Health*, 23(3), 24-56.
- United Nations. (2001). *World Population Ageing: 1950-2050*. New York: Department of Economic and Social Affairs, Population Division.
- Van Minh, H., Byass, P., Chuc, N. T., & Wall, S. (2010). Patterns of health status and quality of life among older people in rural Viet Nam. *Glob Health Action*, 3.
- WHO. (2010). Measuring health and disability Manual for WHO disability Assessment Schedule (WHODAS 2.0). In N. K. T.B. Üstün, S. Chatterji and J. Rehm (Ed.). Geneva: World Health Organization.