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Health Status of Old Age Population in Bulgaria

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Abstract

This article examines the health status of the population in Bulgaria at age 65 by gender during the period 2006-2014. The health status is examined by some of the most frequently used demographic indicators, namely life expectancy, based on mortality data and healthy life years and healthy life expectancy, based on mortality, life expectancy and self-perceived health. The main results show that despite of the observed increase in life expectancy at age 65 in Bulgaria during the period it is the lowest compared to other European countries. The share for both men and women reported their health status as without limitations in respect to daily activities decline, while those reported their health status as good increase. These contradictory facts reflect on the measures of health status. Thus, the trend in healthy life years for both sexes decline over the period, whereas the trend in healthy life expectancy increases. Compared with the other European countries, the expected number of years without limitations in Bulgaria is among the largest, while the healthy life expectancy is the lowest. These differences could be explained by the different levels in mortality and the nature of the measures of health status themselves.

Keywords: health status, self-perceived health status, life expectancy, healthy life years, healthy life expectancy

Introduction

Life expectancy (LE) at birth increases as a result of the decrease in the mortality rate, the improvement in the socio-economic conditions and last but not least due to the progress in medicine and health care. As a consequence of the increasing life expectancy and the decrease in the fertility and mortality rates, the relative share of the people in old age increases. One of the major issues related with the increase in the life expectancy of the population is what part of the population lives in good health and what part lives in bad health. Good health has great importance for the socio-economic wellbeing of every nation. Health is of great significance not only for society at large but also for every person and his or her family. Health is essential for the individual's participation in society as well. Increasing the number of years without limitations and of the years lived in good health is one of the main goals of the EU health policy.

The issue about the years lived in different health statuses concerns the population in all ages and to a great extent the elderly population.

In demography among the most widely used measures of the health status of the population are: Healthy Life Years (HLY), Healthy Life Expectancy (HLE), Activities in Daily Living (ADL), Disability Adjusted Life Expectancy (DALE), and Life Expectancy with Chronic Disease (LEwCD). These indicators are particularly useful in the assessment of the health status, of the quality of life of the population and for developing policies for improvement of the population's health status and life in good health. The use of these indicators allows for comparison of the health status of a population, among certain groups of the population and among different countries over time.

The aim of the present article is to examine the health status of the population aged 65 by gender during the period 2006-2014 in Bulgaria on the basis of two measures: HLY and HLE, thus evincing what part of the life of the population in old age is lived in good health. These two health status measures combine the mortality rate data, as well as life expectancy and disability data about the population.

Data and method

The analysis of the health status of old age population in Bulgaria is based on two widely used measures and namely: Healthy Life Years (HLY) and Healthy Life Expectancy (HLE), calculated by Eurostat.

For the calculation data on the mortality rate and on the self-perceived¹ health status are used, obtained from the Eurostat EU-SILC (Statistics on Income and Living Conditions) module dedicated to health. [Eurostat, 2016 (2)]

Data on Bulgaria in SILC is available for the period 2006-2014. In 2006, though, the definition used for calculating HLY in Bulgaria is different from the one used for other countries. [Eurostat, 2016 (1)]

HLY (also called disability-free life expectancy or DFLE) is calculated on the basis of data on mortality, morbidity and disability assessed on the basis of self-perceived health status.

Self-perceived health status is determined based on the question from the questionnaire of SILC: For at least the past six months, to what extent have you been limited because of a health problem in activities people usually do?

There are three possible answers: severely limited, limited but not severely, and not limited at all.

On the basis of the answer to this question as people in good health are determined only the people who have replied that they have no limitations, i.e. they have no health issues and as people in bad health are determined the ones who have responded that they have a health issue (severely limited or limited but not severely).

For 2006 the following question was asked: During the last 12 months did you have problems with your health that limited you in your daily activities? and there are two possible answers: "yes" and "no".

Self-perceived general health is the basis for the calculation of HLE. The calculation of health status is based on the question: How is your health in general? The possible answers are: very good, good, fair, bad or very bad. In "good health" are considered the respondents who have given one of the following answers: "very good", "good" and "fair", and in bad health – the ones who have replied with „bad" and „very bad".

The data necessary for calculating the two measures is data about the mortality rate by age and the relative share of the people who have themselves determined their health status. The Sullivan method (Sullivan, 1971) is used. Its main advantage is the simple calculation and interpretation of the results.

The Sullivan method involves the construction of life tables.

The formula for calculating HLY and HLE is:

$$h_0 = \sum_{x=0}^{\omega} {}_1L_x \cdot \pi_x,$$

where ${}_1L_x$ is the person's years lived between exact age x , and π_x is the proportion of people at age x who perceived their health as with limitations or bad in general.

Results

In table 1 by sex is presented the relative share of the population aged 65 in Bulgaria of respondents who have replied to questions about self-perceived general health status and self-perceived long-standing limitations in usual activity due to health problem from EU-SILC. It can be seen from the table that the share of men above 65 who determine their health as one without limitations is approximately 87%, and the share of women - 85%. A considerable decrease, though, is observed

¹ In literature instead of *self-perceived* health the following terms also are used: *self-assessed*, *self-rated* and *self-reported*.

in 2014 (62,2% in the male group and 55,9% in the female group respectively), while the share of elderly people with limitations increases.

In 2006 more than 85% of the men in old age determined their health as good. In 2014 this relative share increased to 89,3% or by 4,3%. The relative share of women who determine their health as good is lower by approximately 6%. In 2014 this share increased to 86,5% and as a result of this considerable increase compared to the male group, the difference between the two sexes decreased twice.

Table 1. Self-perceived long standing limitations in usual activities due to health problem and self-perceived general health status in Bulgaria at age 65 by sex (2006 and 2014) (in %)

Self-perceived health status	2006		2014	
	Males	Females	Males	Females
1. Self-perceived long standing limitations in usual activities due to health problem				
Some and severe limitations	13,4	15,3	37,8	44,1
No limitations	86,6	84,7	62,2	55,9
2. Self-perceived general health status				
Bad and very bad	14,9	21,1	10,7	13,5
Very good, good and fair	85,1	78,9	89,3	86,5

Table 2 presents the change in the life expectancy, HLY and HLE of age 65 by sex in Bulgaria.

In 2006 the life expectancy of age 65 is respectively 13,2 years for men and 16,3 years for women and the difference between the both sexes is 3,1 years. Until 2014 the life expectancy increased by 0,9 years for men and by 1,3 years for women, retaining the difference of 3 years between men and women.

HLY or life expectancy without limitations of age 65 in Bulgaria as well as life expectancy in general is higher for women in comparison to men. In 2006 and 2007 the number of years expected to be lived by men without limitations in all their remaining life due to a health problem is respectively 11,4 and 11,6 years while for women it is respectively 13,7 and 14,2 years or more than 2 years in comparison with men. After 2007 HLY decrease in both sexes. In 2014 they are already 8,7 years for males and 9.6 years for females. The differences between them also decrease and total up to one year.

In 2006 in Bulgaria, the life expectancy in good health at the age of 65 is higher for males compared to females and increases for both sexes. The increase in the male group is from 8 to 9,9 years or by 1,9 years while in the female group the increase is bigger – from 7,7 to 11,4 years or by 3,7 years. Thereby in 2014 life expectancy is by 1,5 years higher for females.

The decrease in HLY in the period from 2006 to 2014 is explained with the considerable decrease in the relative share of the people in the 65 age group in both sexes who have responded that they have no limitations in their usual daily activities due to a health problem. On the other hand, in the same period, the relative share of the male and female respondents who replied that they are in good health has increased which led to the increase in HLE.

Table 2. Life expectancy, healthy life years, and healthy life expectancy at age 65 in Bulgaria (2006-2014)

Year	LE at age 65		HLY at age 65		HLE at age 65	
	Males	Females	Males	Females	Males	Females
2006	13,2	16,3	11,4*	13,7*	8,0	7,7
2007	13,3	16,5	11,6	14,2	8,2	8,7
2008	13,6	16,8	8,8	9,4	8,8	9,6
2009	13,8	17,0	8,5	9,3	9,4	9,9
2010	13,8	17,1	8,9	9,9	9,6	10,4
2011	14,0	17,3	8,6	9,7	9,9	10,8
2012	13,9	17,3	8,7	9,5	9,9	10,9
2013	14,2	17,9	8,7	9,9	:	:
2014	14,1	17,6	8,7	9,6	9,9	11,4

*HLY are calculated by using different definition

: Data are not available

The comparison of LE, HLY and the percentage of years without limitations in correlation to life expectancy at age 65 by sex between Bulgaria and some of the European countries in 2014 shows that the life expectancy of elderly people in both sexes in Bulgaria, is lower than the average for the EU and lower than the life expectancy in the other compared countries (table 3). Only in Latvia the life expectancy of males is lower than the one in Bulgaria. In Bulgaria the expected number of years without limitations is bigger in both sexes in comparison with the average for the EU as well as from the average for Germany, Italy, Latvia, Hungary and Romania.

Gender differences in life expectancy and in the expected number of years without limitation in Bulgaria are higher than the EU average and than the average for Germany and Romania, but smaller than the average for the rest of the countries.

The percentage of the expected number of years without limitations at age 65 in Bulgaria is 61.6 for men and 54.4% for women and is highest in both sexes, as compared both to the average for the EU and for the other countries. It is expected that in 2014 men aged 65 in Bulgaria will live by 7.2% more of their remaining years without limitations compared to women. This difference is less than the average for the EU countries, but higher than the one in Germany and Latvia. The larger percentage of years in the total life expectancy expected to be lived without limitations in Bulgaria compared to other countries, in particular those from Western Europe, is to some extent due to the low life expectancy (LE) in Bulgaria. This is one of the reasons for the higher percentage for men in comparison to women in Bulgaria.

Table 3. Life expectancy, healthy life years, and healthy life years as a percentage to the total life expectancy at age 65 in Bulgaria and some European countries in 2014

Countries	LE at age 65			HLY at age 65			HLY at age 65 (in % of the total LE)		
	Males	Females	Difference	Males	Females	Difference	Males	Females	Difference
European Union (28 countries)	18,2	21,6	-3,4	8,6	8,6	0,0	47,2	39,8	7,4
Bulgaria	14,1	17,6	-3,5	8,7	9,6	-0,9	61,6	54,4	7,2
Germany	18,2	21,4	-3,2	6,8	6,7	0,1	37,5	31,5	6,0
Spain	19,3	23,5	-4,2	10,1	9,4	0,7	52,2	40,2	12,0
France	19,7	24,0	-4,3	10,4	10,7	-0,3	52,9	44,7	8,2
Italy	19,2	22,8	-3,6	7,8	7,3	0,5	40,6	32,1	8,5
Latvia	13,8	19,0	-5,2	4,0	4,6	-0,6	29,1	24,1	5,0
Hungary	14,6	18,6	-4,0	6,0	6,1	-0,1	41,3	32,6	8,7
Romania	14,7	18,1	-3,4	5,9	5,7	0,2	40,3	31,5	8,8

The number of years expected to be lived in good health by the population aged 65 in Bulgaria in 2014 was again higher in women compared to men with values of 11.4 and 9.9 years (table 4). In comparison to other countries, HLE in Bulgaria in both sexes is significantly lower than the EU average, as well as than the HLE in Western Europe. Compared to the countries in Eastern Europe, the HLE is higher only in Latvia.

Table 4. Healthy life expectancy at age 65 in Bulgaria and some European countries in 2014

Countries	HLE at age 65		
	Males	Females	Difference
European Union (28 countries)	14,4	15,9	-1,5
Bulgaria	9,9	11,4	-1,5
Germany	15,6	17,9	-2,3

Spain	15,7	17,0	-1,3
France	16,1	18,7	-2,6
Italy	13,7	14,7	-1,0
Latvia	8,5	10,5	-2,0
Hungary	9,9	10,0	-0,1
Romania	11,4	12,5	-1,1

Discussion

From 2006 to 2014 the LE of the population aged 65 in Bulgaria has increased as a result of the decrease due to the mortality. Regardless of this increase, the LE is the lowest compared to other European countries (with the exception of that of men in Latvia) and it is due to the fact that the mortality in Bulgaria is the highest among EU countries.

The results of the analysis of the change in HLY and HLE in Bulgaria during this period show that irrespective of the increase in life expectancy, the number of expected years without limitation decline, while life expectancy in good health increases. Compared with the other countries, included in the analysis, the expected number of years without limitation (HLY) in Bulgaria is among the largest, while HLE is among the lowest. The differences could be explained by the different levels of mortality and the nature of the measures themselves, at the core of which is the self-perceived health status.

The self-perceived health is considered a good preliminary assessment of mortality and survival of the population [Mossey, J. M. & Shapiro, E (1982), Idler, E.L. & Benyamini, Y. (1997), Cott, C.A. et al. (1999), Eriksson, I. et al. (2001), Boardman, J. D. (2006)]. This measure, however, has some limitations. One of them is that it is based on a subjective assessment of the individual for his or her health and it is also dependent on the individual's educational, cultural and social level of functioning. The longitudinal study EU-SILC, used in this article, does not include people living in social and health care institutions, who, in most cases, are in poorer health and have limitations associated with a health problem. Thereby, the relative share of the people in poor health is underestimated in the study. On the other hand, in international comparisons the differences in health status measured through indicators, at the core of which is self-perceived health, may reflect not only differences in health but also cultural differences between different nationalities.

Irrespective of the shortcomings of these measures (HLY and HLE) to a certain extent they overcome the problems associated with the measurement of health status and comparability in different time periods, countries and groups of the population by eliminating the influence of its size and age structure. They are also an evaluation of part of the concept of quality of life, especially among people in the old ages, measuring the years that they are expected to live without limitations, disability or poor health in general.

In the focus of a future analysis will be the reasons for the existence of gender differences in HLY and HLE in Bulgaria and their decomposition into components due to mortality and different health status, as well as their comparison with other European countries.

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