

Trends in male and female healthy life expectancy in Russian Federation (years 1994-2010)

Abstract: Trends in mortality and health using healthy life expectancy indicators were analyzed using Rosstat mortality statistics data and RLMS survey data on health. All rounds included general question on self-rated health. It allowed making comparisons over time using longitudinal sample design (quasi panel) representative of Russian population by key socio demographic parameters. Hypotheses on healthy life expectancy dynamics were tested using indicator of average length of life in “very good”, “good” or “average” health after age thresholds (40 and 60 were chosen as ages after which onset of bad health is significant). Hypotheses of “expansion of morbidity (or health)”, “contraction of morbidity (or health)” and “dynamic equilibrium” were chosen for explanation of Russian male and female health trends.

Methodological and theoretical framework:

Sullivan’s period life table technique was used to construct time series of healthy life expectancy indicators for males and females [Sanders, 1964; Sullivan,1971] implying life table calculation and estimation of share of respondents in “bad” or “very bad” health by sex and age. SRH indicator has shown stability across time and surveys conducted [Ramonov, 2013] and showed reliable results predicting mortality and severe health outcomes among Russian males and females [Perlman, Bobak, 2008].

Several hypothetic scenarios of health dynamics starting from 2004 (the starting year of positive life expectancy dynamics) were analyzed:

- Expansion of morbidity (or “bad or very bad” general health) [Gruenberg, 1991; Kramer 1980];
- Contraction of morbidity [Fries, 1983];
- Dynamic equilibrium [Manton, 1982].

To check hypothesis of dynamic equilibrium average number of years lived in “very bad” health separately was used as indicator of severe health outcomes.

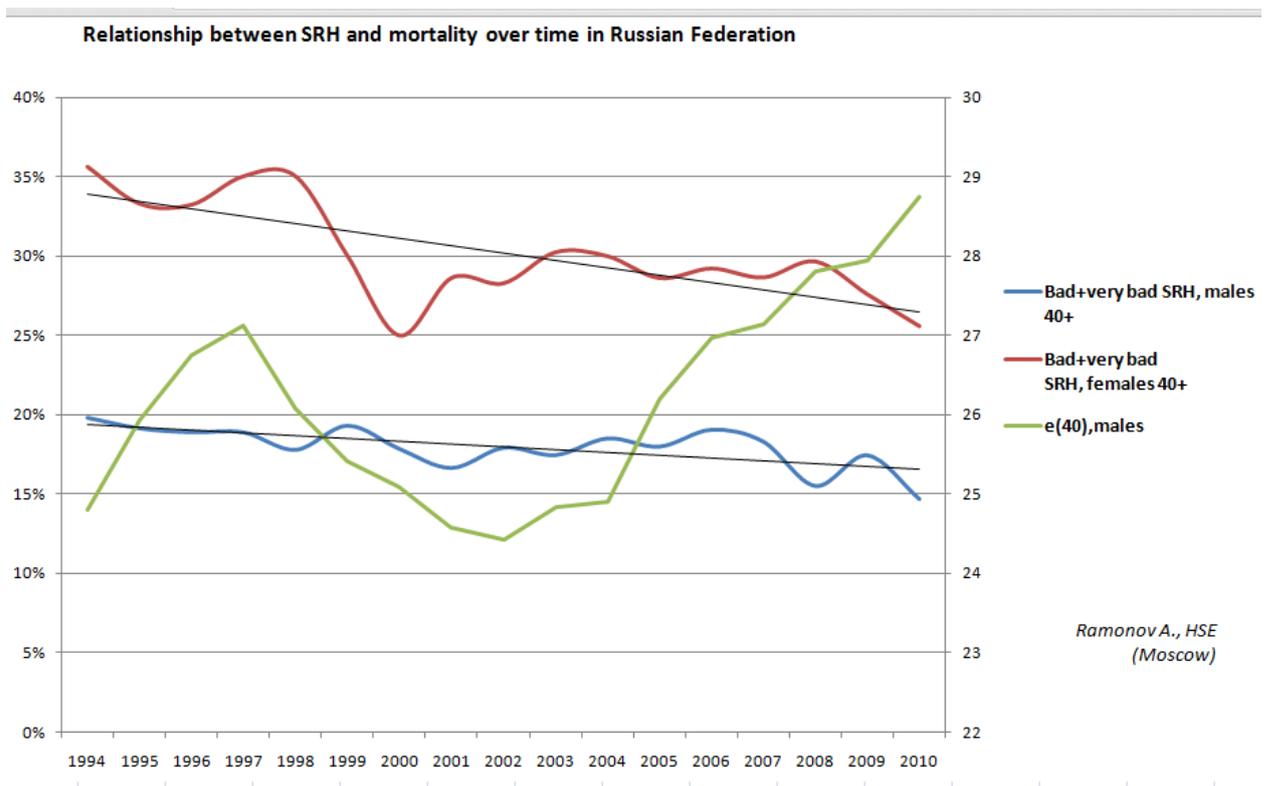


Fig. 1. Trends in bad (“bad”+“very bad”) self-rated health (overall) among men and women aged 40+ (Russian Longitudinal Monitoring Survey representative sample) – left axis. Male life expectancy at age 40 (right axis)

Key findings:

- Since 1994 general dynamics of self-rated health in Russian Federation was stable and positive – share of those, rating their health as ‘bad’ and ‘very bad’ health among 40+ was steadily declining. Declining trend in incidence of bad health was more significant for females, than for males. Difference in incidence of bad health between females and males remained significant – 11% in 2010.
- Since 2004 female healthy life expectancy at age 40 grew faster than life expectancy following “contraction of morbidity” scenario.
- Dynamics of male self rated-health was not similar to sharp variations in male mortality in early 2000-s. A possible explanation of this phenomenon is that the majority of deaths among males those years occurred largely due to external causes and alcohol-related deaths and was not anticipated by health deterioration. Conclusion corresponds to previous findings [Perlman, Bobak, 2008].
- From 1994 to 2002 temporary variations in female self-rated health were observed – corresponding to variations in male life expectancy. Relationship between marital status and self-rated health in Russia was indicated to be significant for males [Bobak, Pikhart, Hertzman, Rose, Marmot, 1998]. More evidence needed to explain contradictory relationship between female self-rated health and male mortality.
- Issues of sample attrition, selection bias due to health deterioration and institutionalization could be of key significance while using representative survey data. More attention should be paid to these topics while constructing panel survey design among the elderly.

1. Bobak M., Kristensen M., Marmot M. Life span and disability: a cross sectional comparison of Russian and Swedish community based data. *BMJ*, 2004.
2. Bobak M., Pikhart H., Hertzman C., Rose R. and Marmot M. Socioeconomic factors, perceived control and self-reported health in Russia. *Soc. Sci. Med.* Vol. 47, No. 2, pp. 269-279, 1998
3. Fries J. The compression of morbidity. *Milbank quarterly.* 61(3),, 1983 p.397-419
4. Gruenberg E. The failure of success. *Milbank Memorial Foundation/Health and society.* 1951. Vol. 55, p. 3-24
5. Kramer D. The rising pandemic of mental disorders and associated chronic diseases and disabilities. *Psychiatria Scandinavica* 62, 1980 p. 182-297.
6. Manton K. Chancing concepts of of morbidity and mortality in the elderly population. *Milbank Memorial Foundation/Health and society.* Vol.60(2), - 1982. p. 183-244.
7. Manton K. A Longitudinal Study of Functional Change and Mortality in the United States. *Journal of Gerontology* 43(5): 1988. pp. 153-161.
8. Perlman F., Bobak M. Determinants of self rated health and mortality in Russia – are they the same? // *International Journal for Equity in Health.* 2008.№ 7.
9. Ramonov A. PhD thesis. "Summary health indicators in Russian Federation: methodology and measurement design" <http://www.hse.ru/sci/diss/79980333>
10. Sanders B. Measuring community health levels// *American journal of public health.*1964. № 54.
11. Shkolnikov V., Andreev, E., Leon D., McKee M., Meslé F., Vallin J. Mortality reversal in Russia. The story so far. *Hygiea Internationalis*, 2004-12.
12. Sullivan D. A single index of mortality and morbidity// *HSMHA health report.* 1971. № 86.