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Research Article

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Health Expectancy in Russia in 1998-2019

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Abstract

Background: *The aim of this research is to estimate the scenarios of health expectancy dynamics following life expectancy dynamics*

Methods: *Life tables including the information on health self-assessment.*

Results: *From 2004 to 2019 the value of e (20)-h (20) for males increased from 4.5 years to 5.5 years (%e (20) remained constant on the level of 11%).*

For females e (20)-h (20) decreased from 10.8 to 7.5 years (%e (20) decreased by 7% - from 20% to 13%).

Conclusion: *The positive dynamics of general health among females in Russia may be associated with a decrease in mortality from cardiovascular diseases among the elderly, which, combined with the positive dynamics of self-protective behavior, could show signs of the "cardiovascular revolution".*

Introduction

According to the "pandemic morbidity" hypothesis the life expectancy increase is due to the increase in the share of life lived with the diseases or health problems. According to the "compression of morbidity" - due to its decrease [1-3].

Previously several studies examined Russia's comparative position using healthy life expectancy indicators (HLE or HE) [4-6]. This study estimates the extent to which one of the mortality-health dynamics' hypotheses was confirmed, or, rejected in Russia.

Methodology

The period from 1998 to 2019 divided into 2 sub-periods: 1) the second wave of the Russian mortality crisis 2) the stage of positive life expectancy dynamics starting from 2004.

Self rated health status was used for the estimation of the HE indicators measured by the question "How do you assess your own health in general?" that in previous studies has shown good predictive validity was used. Prevalence of "bad" or "very bad" health was used calculated w/o the "Difficult to answer" and "Refused to answer" options [7].

New Economic School (Russian Fertility and Mortality Database, 2019) database and RLMS-HSE (Russia Longitudinal Monitoring Survey, 2019) survey database (in 2005 the household response rate - 72,2%) used.

Decomposition was used to study the gap between neighboring time-points by age (20 is chosen as initial) [8, 9].

Results

Table 1: Sample Size by Age-group, RLMS-HSE, and Representative Sample

a) Males

	r7,1998		r12,2003		r13,2004		r28,2019	
	n	n ("bad" or "very bad" general health)	n	n ("bad" or "very bad" general health)	n	n ("bad" or "very bad" general health)	n	n "bad" or "very bad" general health
0-19	1384	42	1101	20	1077	14	1325	19
20-84	3087	422	2823	370	2784	340	3927	425
85+	13	7	12	6	10	6	35	20

b) Females

	r7,1998		r12,2003		r13,2004		r28,2019	
	n	n ("bad" or "very bad" general health)	n	n ("bad" or "very bad" general health)	n	n ("bad" or "very bad" general health)	n	n "bad" or "very bad" general health
0-19	1399	42	1110	34	1074	34	1279	12
20-84	4068	958	3955	875	3931	822	5510	839
85+	66	56	60	44	57	36	152	102

Table 2: Life Expectancy and HE Indicators among Females in Russia in 1998, 2003, 2004 And 2019

	e_{20}	h_{20}	e_{20}- h_{20}	% «Bad» or «Very bad»
1998	54,9	41,1	13,8	25%
2003	53,2	41,8	11,4	21%
2004	53,6	42,8	10,8	20%
2019	58,8	51,3	7,5	13%

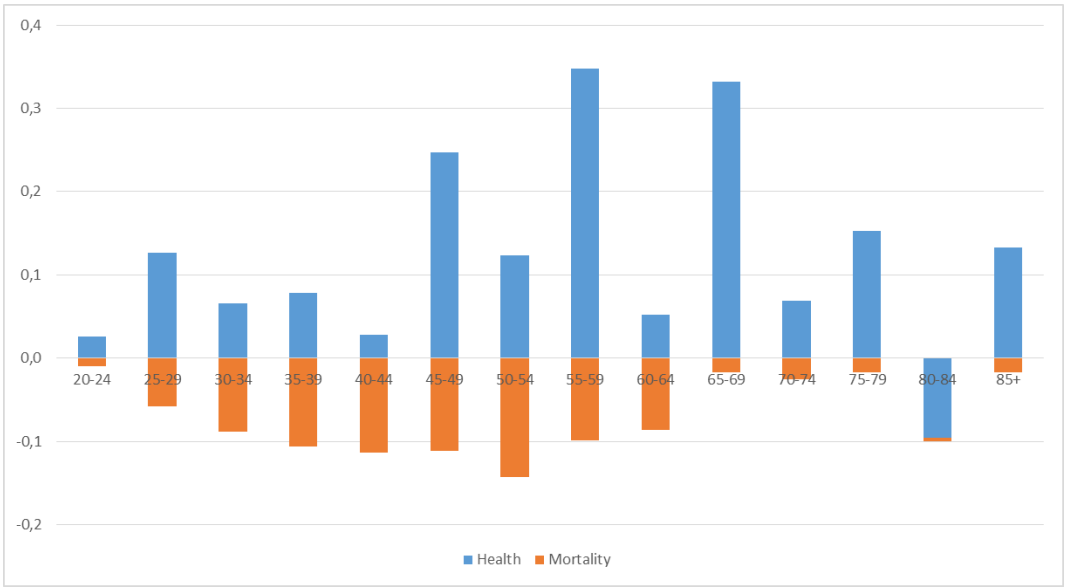

Figure 1: Contribution of Improved Health and Increased Deaths to the Gap in HE among Females between 2003 And 1998

Data sources: NES Database (date: 07.04.2019). RLMS-HSE survey database, representative sample, r7, r12.

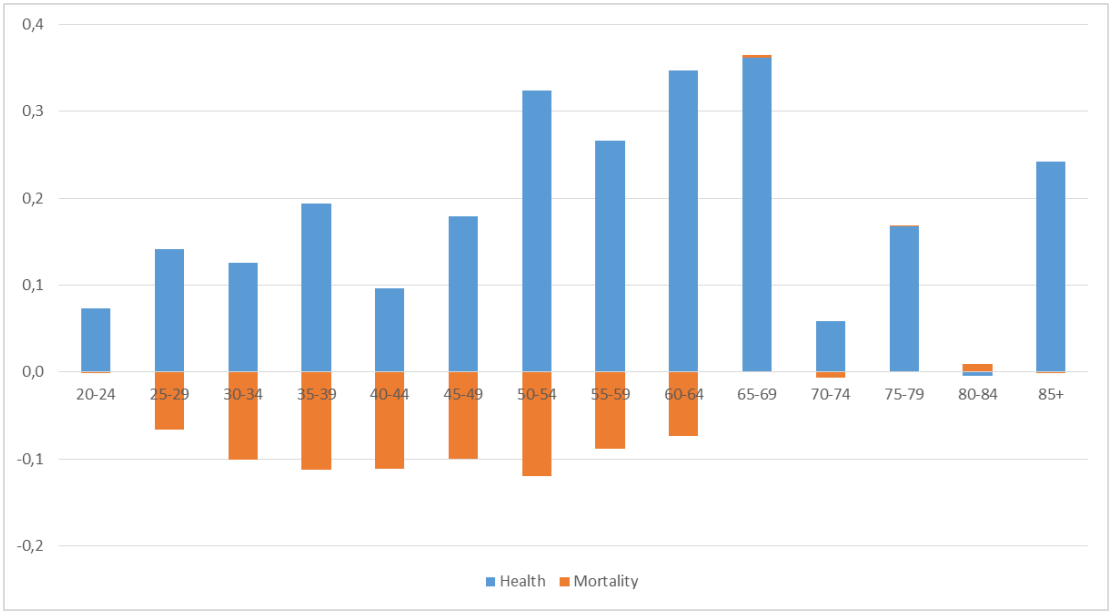

Figure 2: Contribution of Improved Health and Increased Deaths to the Gap in HE among Females between 2004 And 2003

Data sources: NES Database (date: 07.04.2019). RLMS-HSE survey database, representative sample, r12, r13.

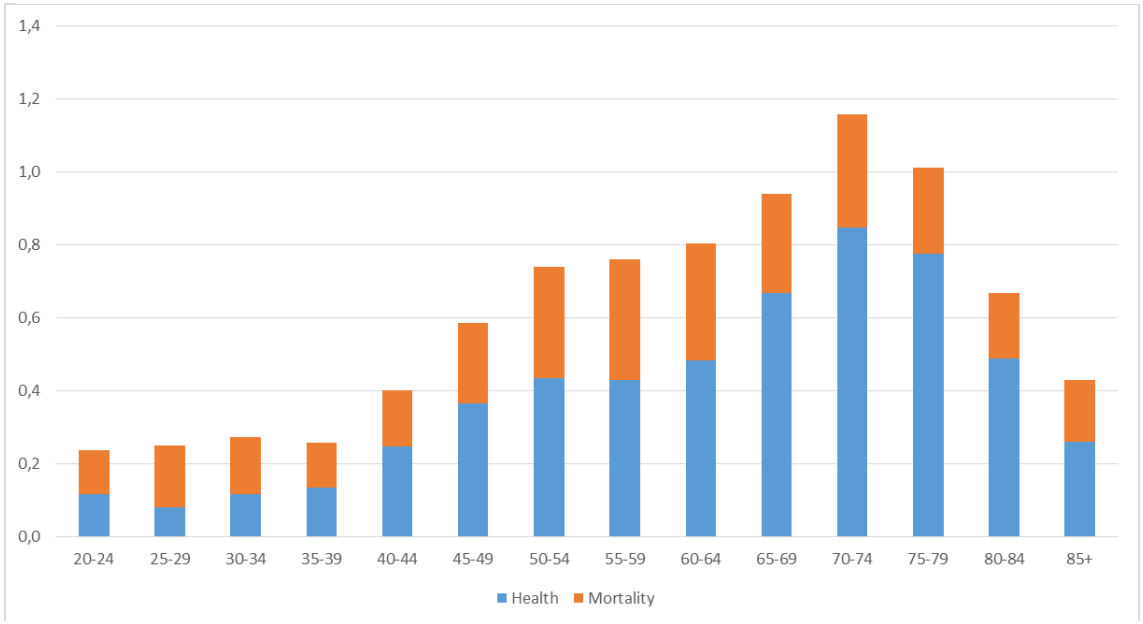

Figure 2: Contribution of Improved Health and Lower Deaths to the Gap in HE among Females between 2019 And 2004

Data sources: NES Database (date: 07.04.2019). RLMS-HSE survey database, representative sample, r13, r28.

From 2006 to 2016, the example of a positive trend in both sexes, e20-h20 decreased from 11 to 9.6 years for females (the same indicator decreased by 3% from 20% to 17% of the total life expectancy). The value of e20-h20 for males increased from 4.7 years to 5.3 years (%e (20) - 11%)

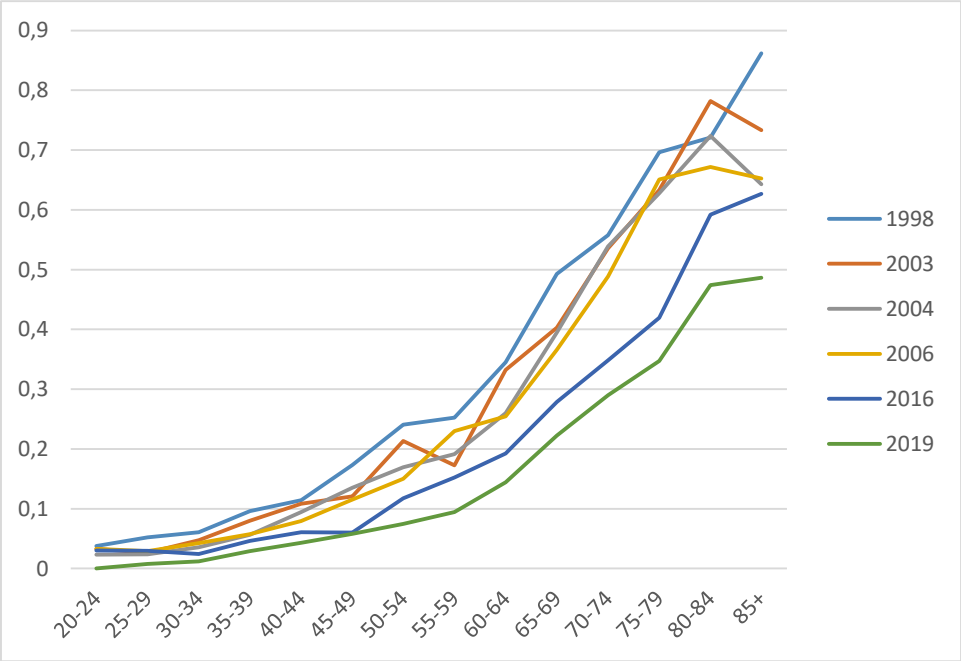

Figure 2: The Prevalence Of "Bad" Or "Very Bad" Self-Rated Health among Females in Russia in 1998, 2003, 2004, 2006, 2016 And 2019

Data sources: RLMS-HSE, representative sample, r7, r12, r13, r15, r25, r28.

As seen on Figure 4 the positive dynamics of self rated health prevalence was more pronounced from 2006 to 2016 among 40+ but if looking at sample sizes (see Table 1) – from 1998 to 2004 among females 20-84.

Discussion

Serious activity limitations data among the elderly required for the "dynamic equilibrium" hypothesis estimation could provide additional ground to the results obtained in this research.

The positive dynamics of the health among females in Russia may be associated with the decrease in the mortality from the cardiovascular diseases speaking for the "cardiovascular revolution" [10-12].

The estimates of the prevalence-by-age are underestimated due to the fact that the survey does not include institutionalized population and the extreme population groups (for example, in terms of income, these would be the most and the least deprived groups) [13].

Despite the mortality increase, that occurred between 1997 and 2004 (also known as "second wave" of Russian mortality crisis self-rated health prevalence indicators' values remained stable for males, and even improved slightly among females. One of the possible explanations for this fact is in different susceptibility of mortality, and, prevalence indicators to various risk factors, such as tobacco and alcohol [14, 15].

The dynamics of the self rated health demonstrated above could be subject to response rate decrease.

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