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GENDER DIFFERENCES IN LIFE EXPECTANCY IN RUSSIA: TRENDS AND CAUSES.

Background.

Russia has not only the lowest life expectancy in Europe but the greatest difference in life expectancy between men and women as well. This gap from European countries is presumably due to excess mortality in males. During the second half of 2000s, the gap in the male mortality is about 15-8 years, while in females – 9-4 years in comparison with the Western European countries (first figure) and Central and Eastern Europe (second figure).

Objective.

To study long-term trends of gender differences in life expectancy in Russia and to determine contributions of certain age groups and death causes during the periods of increased and decreased differences.

Data and methods.

We used official statistic data from the Federal State Statistics Service for the years 1965-2009 with a breakdown on 5-year age groups and death causes. We also relied on the Federal State Statistics Service official version of comparability of mortality data according to blocks of death causes for the period 1965-2009 with the International Classification of Diseases 10th Revision. Method of component analysis was used to determine contribution of certain age groups and death causes into life expectancy difference among males and females at different stages of mortality dynamics.

Results.

Long-term dynamics of mortality in Russia was accompanied by life expectancy variation in males and females (fig.1). At the lowest rates of mortality the gender differences were minimal as well. And vice versa, at the highest mortality rates the difference in life expectancy in males and females was maximal as well. Taking into account sinuosity of the long-term mortality trend in Russia one can distinguish several stages when levels of life expectancy and its gender differences were similar. A favorable period falls to the middle of the 1960s and the years 1986-1987 as a result of the anti-alcohol campaign. Life expectancy for both sexes during those years was 69.6 and 70.1 years with gender difference 9.2 and 9.5 years correspondingly. The most unfavorable period falls to the middle of the 1990s (climax of the socio-economic transformation crisis) and to the middle of the 2000s (coping with the financial default consequences in the end of the 1990s).

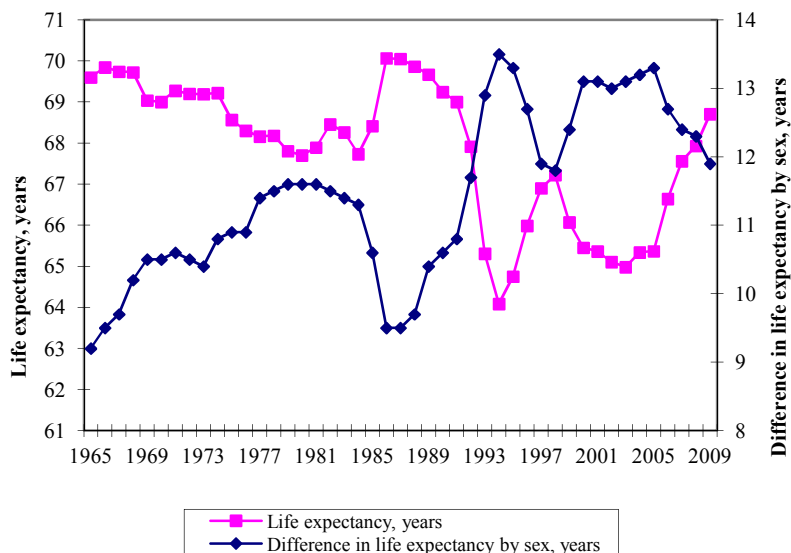
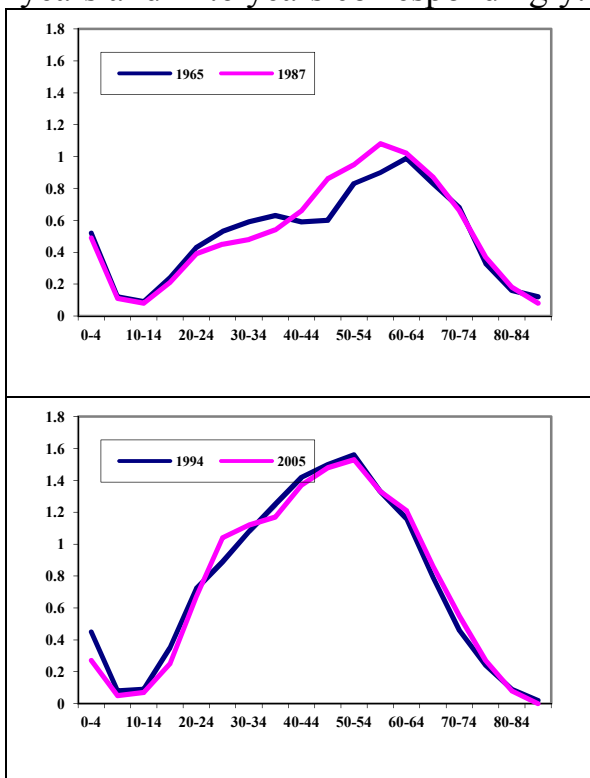


Fig. 1. Dynamics of life expectancy and its differences between males and females in Russia during 1965-2009.

During those years life expectancy for both sexes was 64.1 and 65.3 years with gender differences adding up to 13.5 and 13.3 years correspondingly. Moderately unfavorable period (compared to the previously achieved results) we are experiencing now. Life expectancy in 2009 was 68.7 years with gender difference – 11.9 years. Specifically, almost the same rates of mortality and its gender differences were registered at the end of the “Soviet” era in 1980 – 67.7 years and 11.6 years correspondingly.



Therefore, similar in terms of the scale rates of mortality and gender differences are separated by many years: relatively favorable rates – by 12 years; unfavorable – by 11 years; moderately unfavorable – by 29 years. Naturally, the age and cause profile of gender differences would have undergone certain changes for such a long period of time.

As to the age profile, contributions of certain age groups into life expectancy difference hardly differ neither in the favorable years (1965 and 1987) nor in unfavorable years (1994 and 2005). The difference is within the limits of ± 0.1 years. Thus, in 1987 in comparison with 1965, the contribution of the young people of 25-39 years old was lower, while the contribution

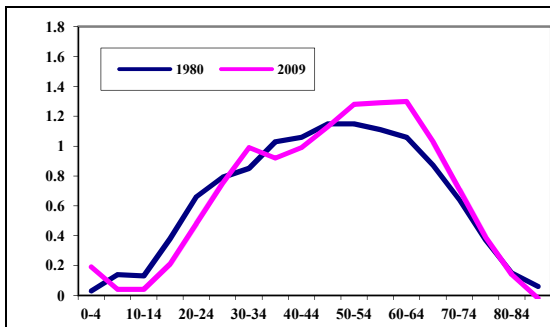


Figure 2. Contribution of age group into difference in life expectancy in males and females.

of the 45-49 years olds was higher. In 2009 compared to 1980, the contribution of children and youth 5-24 years old was lower, while the contribution of the age group over 50 years was higher. In 1994 and 2005 there was no significant difference in contribution into life expectancy gender gap by certain age groups input

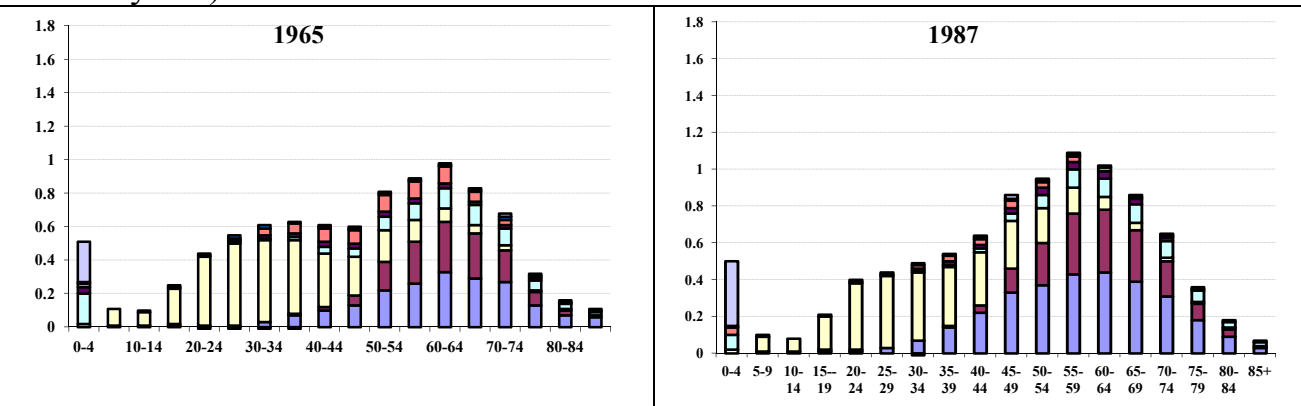
Though the age profile of gender differences in life expectancy hardly changed, shifts in mortality causes determining gender differences turned out to be significant.

First, let's discuss differences between favorable periods. In 1987 compared to 1965, contribution of the cardio-vascular diseases increased from 2.0 to 3.1 years and contribution of the neoplasms – from 1.4 to 1.7 years. The growth was predominantly due to the 40-64 age groups. Contribution of other death causes decreased specifically from accidents, poisonings and traumas from 3.3 to 2.8 years especially in the young age groups 25-39 years and contribution of infections decreased from 0.7 to 0.3 years within the age limits of 35-69 years. Thus, elimination of alcohol factor disguised increasing ill-being related to insufficient self-protective behavior of men. It also caused similarity of age profiles of gender differences in life expectancy in 1965 and 1987.

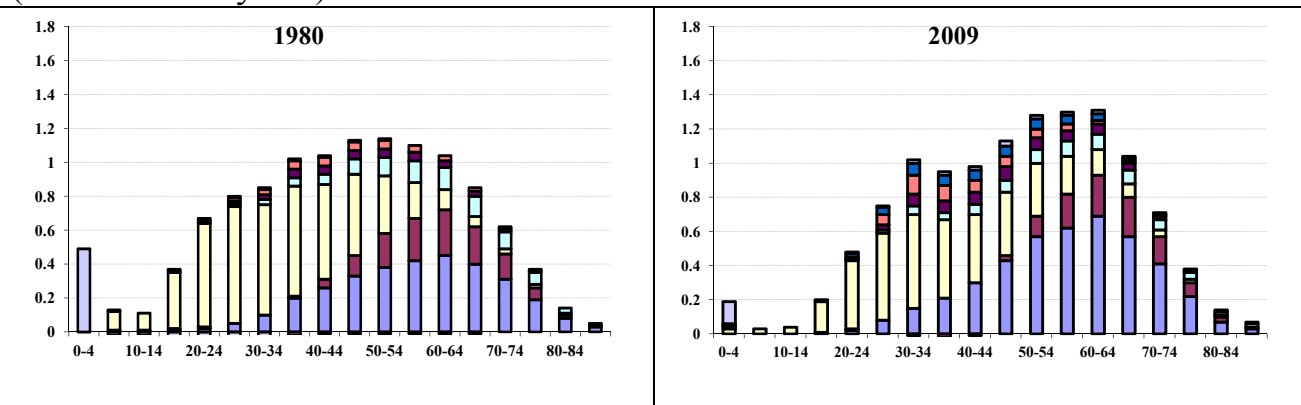
During the periods of maximal ill-being, the year 2005 in comparison with the year 1994 was characterized by further increased contribution of the cardio-vascular diseases (from 3.9 to 4.5 years) not only in the middle and old ages 50-74 years but in the young ages 25-34 years as well. Simultaneously, the contribution of diseases of digestive system, infections and symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified predominantly increased in the ages 25-54 years (from 1.2 to 1.8 years in total). Such growth compensated reduced contribution of external causes in the same age groups. It is important that reduction in the contribution of accidents, poisonings and traumas to the structure of gender differences in during the period between 1994 and 2005 was not caused by reduced male mortality from those causes but by its anticipatory increase in females. Therefore, following the catastrophic life expectancy decrease in the middle of 1990s, the rates of life expectancy and its gender differences against the background of socio-economic reforms remained the same while the quality of those differences even worsen. Contribution of causes related to marginalization of population, namely infections, diseases of digestive system and cardio-vascular diseases related to alcohol component in the young ages and symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified that disguise violent causes of death increased.

Current rates of life expectancy and gender differences are close to those observed at the end of the “Soviet” period. However, the contribution of cardiovascular diseases is higher (from 3.2 to 4.3 years) due to the age groups over 40 years, and due to infections, diseases of digestive system and symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (from 0.8 to 1.8 years) in the ages 25-60 years. The same ages caused decreased contribution of external causes (from 5.0 to 3.8 years). So, despite significant achievements in mortality reduction in Russia during the last 5 years, high share of losses due to totally avoidable deaths within the working ages still preserves unlike the situation as of the end of the “Soviet” period. Furthermore, the quality of diagnostics of death causes is worsening. This jeopardizes reliability of significant reduction of in contribution of external causes of death against the increasing share of symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified.

Maximal life expectancy (69.6 and 70.1 years) and minimal gender difference (9.2 and 9.5 years)



Medium rates of life expectancy (67.7 and 68.7 года) and medium gender difference (11.6 and 11.9 years)



Minimal life expectancy (64.1 and 65.3 years) and maximal gender difference (13.5 and 13.3 years)

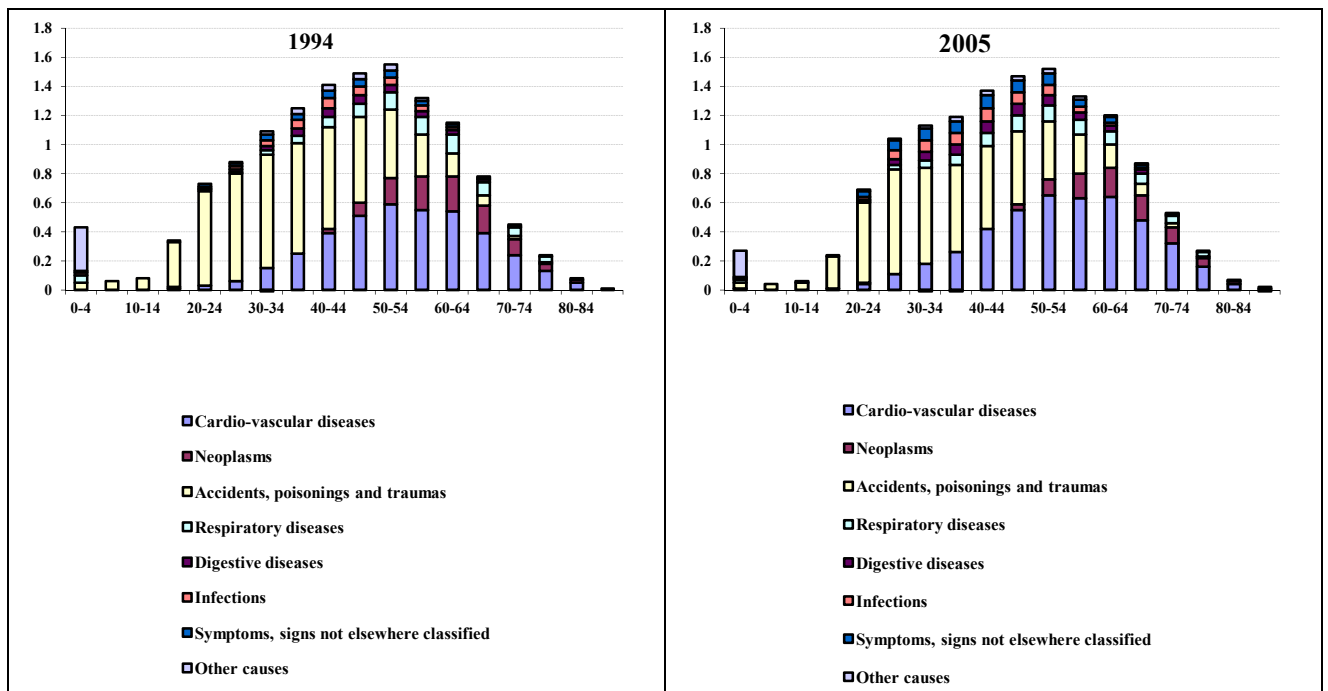


Fig. 3. Contribution of age groups and death causes into life expectancy difference between males and females in 1965 and 1987, in 1980 and 2009, in 1994 and 2005.

Conclusions.

Long-term mortality dynamics in Russia was accompanied by variation of life expectancy in males and females. Similar rates of life expectancy and its gender differences are separated by many years: favorable rates by 12 years, unfavorable – by 11 years and moderate – by 29 years.

Contribution of certain age groups into gender difference of life expectancy hardly differ neither during the favorable years (1965 and 1987) nor during unfavorable years (1994 and 2005) and during moderately unfavorable years. However, shifts in death causes determining gender differences turn out to be significant.

Increased contribution of cardio-vascular diseases became a long-term trend in forming the gender differences in life expectancy. At the same time its age profile is rejuvenating pointing out unfavorable self-protective behavior in males. The other long-term trend is reduced contribution of neoplasms in gender differences in life expectancy related to less positive mortality dynamics in females predominantly due to neoplasms of the female reproductive system.

Local trends manifest themselves in increased contribution of death causes highlighting marginalization of population: infections, diseases of digestive system due to alcohol component and symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified within the working ages that disguise violent causes. Despite notable achievements in mortality reduction in Russia during the last 5 years, the share of such causes is still higher compared to the end of the "Soviet" period.

Therefore, current differences in life expectancy between males and females is determined by accumulated ill-being of the "Soviet" period and consequences of the socio-economic reforms that Russia is still to overcome. Such dual pressure

prevents fast reduction of gender gap retarding growth in life expectancy in the general population.