Avoidable cardiovascular mortality before and during the pandemic in Russia

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IDR FCTAS RAS Institute for Demographic Research

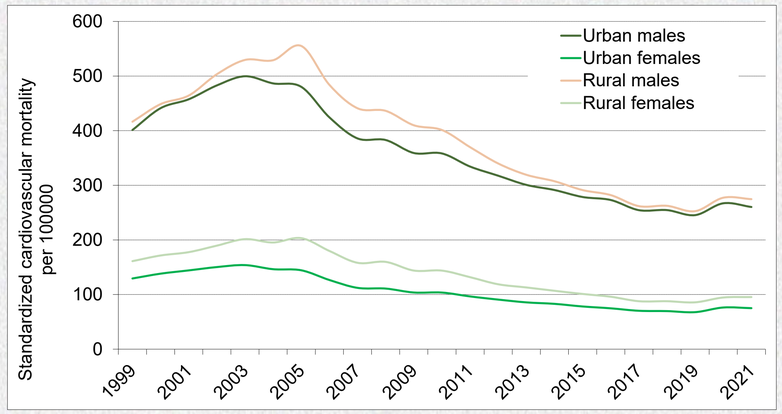
The **aim** of study is to analyze the contribution of preventable causes to cardiovascular mortality in periods before and during the pandemic

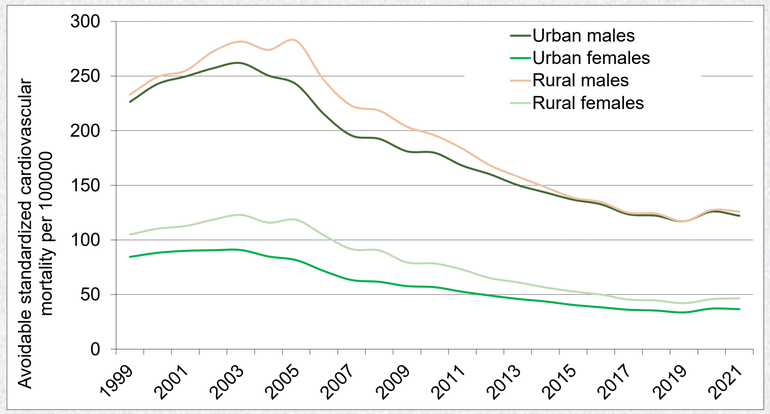
Research methods
Based on official statistics, the cardiovascular mortality of the Russian population aged 5-64 years in 1999-2021 was analyzed. For three periods (mortality growth in 1999-2003, social recovery in 2005-2019 and the pandemic in 2019-2021), the average annual growth rates of mortality for men and women in urban and rural areas were calculated, and the average values of years of potential life lost were determined (up to 70 years of age) per inhabitant (RPYLL).

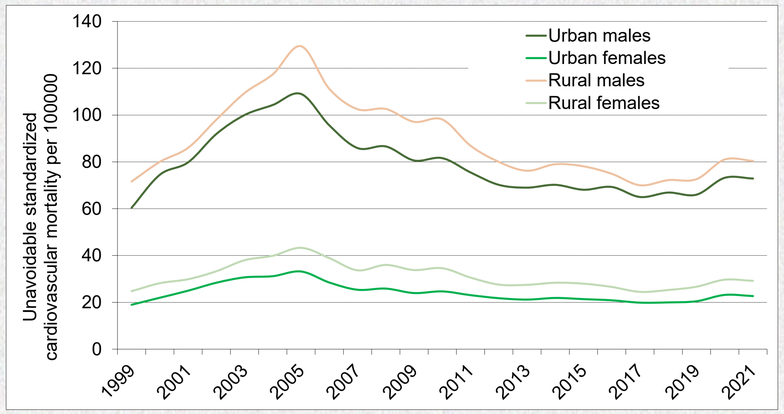
Avoidable causes of cardiovascular mortality: chronic rheumatic hear disease, hypertonic disease, ischemic heart disease, heart failure, cerebrovascular diseases

Period	RPYLL CVD avoidable		RPYLL CVD unavoidable	
Urban	males	females	males	females
1999-2003	4,7	2,7	13,6	12,8
2005-2019	-4,5	-5,0	-2,4	-2,3
2019-2021	2,7	4,2	5,2	5,5
Rural	males	females	males	females
1999-2003	5,0	3,5	11,2	-4,2
2005-2019	-4,8	-5,1	-2,3	-1,4
2019-2021	3,9	4,7	5,4	8,4

Results. The contribution of preventable causes to cardiovascular mortality decreased evenly: in men from 79.9% in 2003 to 72.7% in 2019 and 71.6% in 2021, in women from 80.5% to 69.5% and 69.8% respectively. In male mortality among urban residents, the contribution of preventable causes is greater than among rural residents (73.1% versus 71.3% in 2019 and 71.9% versus 70.7% in 2021), while in female mortality these values are close.
Mortality from coronary heart disease and cerebrovascular disease grew at a slower pace than death from unavoidable causes at the beginning of the century. But after 2005, the rate of decline in mortality from these causes was greater than the rate of decline in mortality from unavoidable causes.
Mortality among men from unavoidable causes has risen more than from preventable causes. In female cardiovascular mortality, the highest growth rates during the pandemic are observed for hypertension and coronary heart disease, significantly exceeding the growth rate of mortality from unavoidable causes.
In recent years of decline in mortality, the loss of RPYLL among rural men began to exceed the values of these indicators for urban residents, which persisted during the pandemic. In contrast to the ratio of mortality growth rates during the pandemic, the loss of RPYLL from unavoidable causes among men is less than the loss from coronary heart disease, while among women, on the contrary, it is slightly higher.







Conclusion. Thus, from the analysis of preventable causes of cardiovascular mortality, it follows that:

- it is these reasons that have made the greatest contribution to the reduction in mortality;
- the influence of mortality prevention measures is noticeable on the age range of preventability in the change in mortality from coronary heart disease and cerebrovascular diseases;
- to reduce the death rate of men from cerebrovascular diseases, it is necessary to strengthen measures to combat alcohol abuse;
- during the pandemic, the RPYLL due to preventable mortality increased to a much lesser extent than from unavoidable.