Social Stress and the Russian Mortality Crisis

The public health situation in Russia today is grave. Information on morbidity is fragmentary; however, an enormous burden of ill health must underlie the very high mortality rates reported for the 1990s. For instance, in 1994, a Russian man aged 20 years would have only a 1 in 2 chance of surviving to age 60 years, compared with a 9 in 10 chance for men born in the United States or Britain. Moreover, in 1994, life expectancy at birth for men was 13 years less than for women. These trends almost certainly are not a statistical artifact.[1] Yet, despite its magnitude, this public health crisis has not received the attention it deserves from medical and public health specialists around the world. The article by Notzon and colleagues[2] in this issue of *JAMA* helps to redress this situation by outlining the dimensions of the crisis and reviewing the findings and conclusions of other research groups.[1,3-6]

See also p 793.

Russian mortality in the 1990s needs to be understood as the product of 2 distinct dynamics. The first is an enormous change in mortality that has occurred in the decade since 1985. Initially, there was an increase in life expectancy at birth, a result of Gorbachev's antialcohol campaign[7] introduced in 1985, but this was followed by a steady decrease in life expectancy from 1987 to 1990, and further declined through 1994. In this latter 5-year period, life expectancy for men decreased 6 years to 57.7 years, and for women decreased 3 years to 71.2 years—an unprecedented pace of deterioration in a country not at war. However, these recent fluctuations overlie a longer-term trend beginning in the 1960s, in which life expectancy for men decreased gradually and for women plateaued, in marked contrast to the patterns in most western countries where life expectancy has increased gradually over many decades.

The fluctuations in mortality in Russia since the mid-1980s have been paralleled in other parts of the former Soviet Union, including the Baltic States, Ukraine, and Belarus.[8] In the former communist countries of Central and Eastern Europe, more intercountry variation is seen.[9,10] Similar to Russia, life expectancy at birth in Poland, Hungary, and Czechoslovakia plateaued or declined in the period from the mid-1960s. With the collapse of communism in the late 1980s, there was evidence of some further small declines. However, during the 1990s, mortality has declined in Poland and the Czech Republic, while in Hungary it continued to rise until 1996. In 1995, life expectancy at birth for males was 68 years in Poland, 70 years in the Czech Republic, and 65 years in Hungary; the equivalent life expectancy for females was 76 years, 77 years, and 75 years, respectively.[11]

The collapse of the Soviet Union and the process of social, economic, and political transformation that has occurred in Russia, subsequently, has caused enormous stress for the Russian people. Many aspects of the social welfare system have collapsed. For example, the real value of retirement pensions has declined steeply. However, mortality in the very young and in older people, who are generally regarded as the most vulnerable groups, has changed very little. Russian men (and women) in their prime of life (ages 30 to 49 years) have been affected the most. Between 1987 and 1994, mortality rates at ages 40 to 44 years increased by 2.43 for men and 1.96 for women.[1] This suggests that absolute impoverishment of the population, which would primarily affect the most economically dependent (the very young and older people) hardest, is unlikely to play a major role in the mortality crisis.

Regional analyses show that many of the steepest declines in life expectancy have occurred in the urban and most economically developed areas of European Russia. For example, male life expectancy in Moscow decreased by 7.7 years in 1990 to 1994, and in St Petersburg by 7.1 years; declines are greater than the 6.4 years observed for Russia as a whole. What can explain these surprising geographic differences? The abrupt economic and social changes that occurred tended to be most significant in those regions that, by virtue of their relative affluence and good communications, were most susceptible and open to change. For example, the abolition of price controls and removal of restrictions on private commercial activities in 1992 led to rapid changes in the nature of life in Moscow. In contrast, the economies of more isolated, remote, and less developed areas have changed at a slower pace. Preliminary findings appear to confirm the observation that the decline in life expectancy is directly related to the level of labor force turnover,[12] a measure of the pace of economic transformation. (M. McKee, MD, written communication, January 1998).

Independent of these geographic effects, the extent of the mortality crisis has varied by educational level. Although life expectancy declined in the 1990s in all educational categories, the decrease was steepest in the lowest educational groups.[13] This has led to a widening of the educational differences in mortality that existed prior to the collapse of the Soviet Union.[14]

Notzon and colleagues[2] conclude that the steep decrease in life expectancy in the 1990s is the result of many factors, including "economic and social instability, high rates of tobacco and alcohol consumption, poor nutrition, depression, and deterioration of the health care system." However, alcohol appears to be a proximal risk factor and plays a central role in the recent crisis.[1,7] The cause-specific and age groups, for which mortality rates decreased mostly in the 1980s as a result of the antialcohol campaign, are those that showed the largest increases in the 1990s, when alcohol consumption rose steeply. These include deaths from acute alcohol poisoning and unintentional injuries and violent deaths—causes clearly related to alcohol. Much smaller mortality changes were observed in the 1990s in former Soviet Central Asia and Transcaucasia, where alcohol consumption is less common, reflecting the culture of these predominantly Muslim populations.[8]

Most important, in terms of absolute numbers, deaths from circulatory disease decreased following the start of the antialcohol campaign in 1985 and then increased in the 1990s. Although Notzon and colleagues offer no real explanation for this central feature of the crisis, this finding may be explained by

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an increase in deaths from cardiac myopathies and arrhythmias[15,16] resulting from very high blood-alcohol levels caused by binge drinking[17]—a common consumption pattern in Russia. Some deaths due to the acute toxic effects of alcohol also appear to be coded in the class of circulatory disease.[18]

It seems plausible that the increase in alcohol consumption in the 1990s was driven by the stress of economic and political transformation[5,19] and facilitated by increased availability and a relative improvement in the price of alcohol compared to basic household goods including food. In Russian society, alcohol comsumption is a deeply rooted part of the male culture,[20] and thus, social constraints on heavy drinking have been minimal. However, further research is necessary to gather better-quality data on patterns of mortality due to alcohol consumption in the Russian population by region and socioeconomic position, and to quantify the contribution of binge drinking to mortality and morbidity.

The high prevalence of smoking among Russian men[21] probably explains an appreciable part of the overall high mortality in Russia compared with other countries.[22] However, it is difficult to postulate a convincing mechanism that would allow rapid changes in smoking habits (for which there is little evidence) to be immediately translated into parallel mortality changes.

The level of health care in Russia is low compared with many other countries and may explain part of the long-term divergence between East and West; still, there has not been a complete collapse of the health care system in the 1990s, and this explanation is insufficient to account for the mortality trends. It has been estimated that between 1990 and 1994 health care expenditures declined 10% in real terms,[23] and it must become a priority to reverse this decline in spending and to improve the level and efficacy of health care in Russia.

Fortunately, the most recent data suggest the precipitate decline in life expectancy has stopped.[24] In 1995 and 1996, life expectancy at birth increased 2.2 years for men and 1.4 years for women, although these are still the lowest in more than 40 years. What can be done to sustain these positive trends? Any steps that might reduce alcohol consumption are likely to have some beneficial effect. Increasing taxation on alcohol is an option worth exploring, although there are major questions of enforcement and of the effects such a policy might have on illicit production.

Russia, with a population of 150 million, is a target for the tobacco multinationals,[21] whose activities in Western markets are becoming increasingly curtailed. Russian women, among whom smoking is still uncommon compared to the West, are likely to be a target, and there is evidence that their smoking rates are now increasing. Russia needs to heed the lessons learned by Western nations in their attempts to limit recruitment of new smokers and discouragement of existing ones; restrictions on tobacco advertisements, event sponsorship, and other strategies to curtail tobacco's influence will likely be applicable for Russia as well. Promotion of a more health conscious culture is a priority.

Overall, the health of the Russian population will depend on economic growth but this must be coupled with a reduction in the social stresses that appear to have played such a central part in the recent crisis. It has been suggested that income inequalities and a lack of social cohesion have a negative impact on population health.[25,26] Widening income inequalities in Russia[27] are a cause for concern and may undermine the positive trends in life expectancy since 1995.

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