

Dynamics of alcohol-related losses in the Russian population

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Alcohol abuse is not just one of the leading causes of death, but also a dominant risk factor in Russia. Recent studies indicated that a significant component in the alcohol mortality is related to somatic abnormalities. Despite these findings, a customary indicator of life losses due to alcohol still takes into account only mortality from accidental alcohol poisoning (X45). However it should be taken into account that there are other 11 pathologies of alcoholic etiology in ICD-10. Improvement of the socio-economic situation in Russia in this century was accompanied by a change in the structure of alcohol-related losses of population.

The purpose of this study is to evaluate these changes and to assess the completeness of registration for alcohol-related deaths in the Russian regions. Alcohol-related losses of adult Russian population from external causes and mortality due to diseases of alcoholic etiology (somatic alcohol-related mortality) during the period of 2000-2009 were analyzed.

Alcohol-related mortality of adult population increased for the period of 2000-2009 in all age groups. Young men aged 20-39 years was the only group, for which mortality declined during the studied period (by 6.2%), while mortality of young women increased by 30.2%, mortality of men and women aged 40-59 years increased by 0.1% and 8.3% and mortality of older men and women (60+ years) increased by 42.1% and 23.2% respectively.

Alcohol-related mortality increase in all age-sex groups of Russian population was determined by an increase of deaths from somatic alcohol-related causes rather than by increase of alcohol-related external deaths. This increase was 68.3% and 2.3.-fold for young men and women aged 20-39 years, 58.8% and 73.0% for middle-aged men and women (40-59 years) and 2.2 and 2 times for older men and women (60+ years) respectively. At the same time, mortality from accidental alcohol poisoning decreased by 41.7% and 38.6% for young, by 42.1% and 44.7% for middle-aged and by 26.8% and 34.3% for older men and women. Overall, alcohol-related mortality in Russia grew by 6% in male and 14.9% in female population (Fig. 1).

Thus, during the last decade, the worst tendencies of alcohol mortality were observed for Russian women. Older men (60+ years) and young women (20-39 years) represent now the main risk groups for alcohol-related mortality.

During the last decade, total alcohol-related mortality of adult population was determined by negative trends until 2005 and by positive trends thereafter. Mortality from diseases of alcoholic etiology had reduced after very rapid growth in 2000-2005; mortality from external alcohol-related causes had reduced after moderate growth of poisoning component in 2000-2002. In the period 2005-2009, total alcohol-related adult mortality declined by more than one-third, both among men and women.

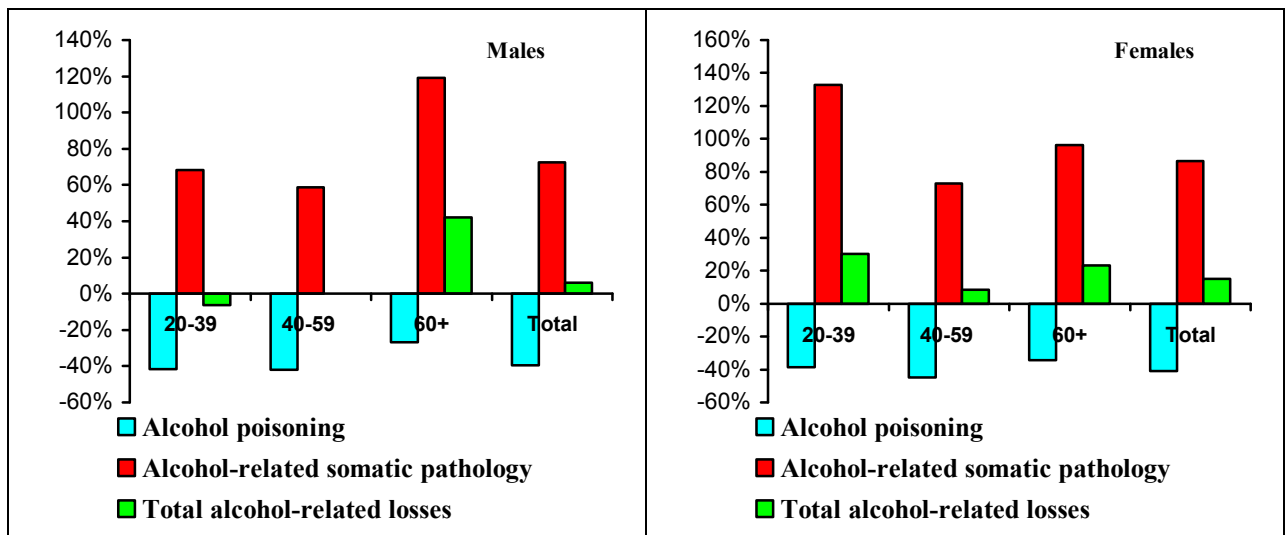


Figure 1. Rate of change for mortality from alcohol poisoning and alcohol-related somatic pathology among adult Russian population, by three age groups and all ages from 2000 to 2009 (%)

As a result, the pattern of alcohol-related mortality in Russia was subjected to fundamental changes: in 2000, this mortality was determined predominantly by alcohol poisoning, while in 2009, it became determined mainly by somatic alcohol-related diseases. The structure of female alcohol-related mortality is almost independent on age. For males, the proportion of alcohol-related somatic pathology increases with age while proportion of alcohol poisonings declines. Now the share of alcohol poisonings among 20-39-year-olds men is 42.2% while this share in persons 60 years and older is 27%, and the share of somatic alcohol-related causes is 57.8% and 73%, respectively. On the average, almost two thirds of male (66.2%) and three fourth of female (71.8%) alcohol mortality was determined by various somatic pathologies (Fig. 2).

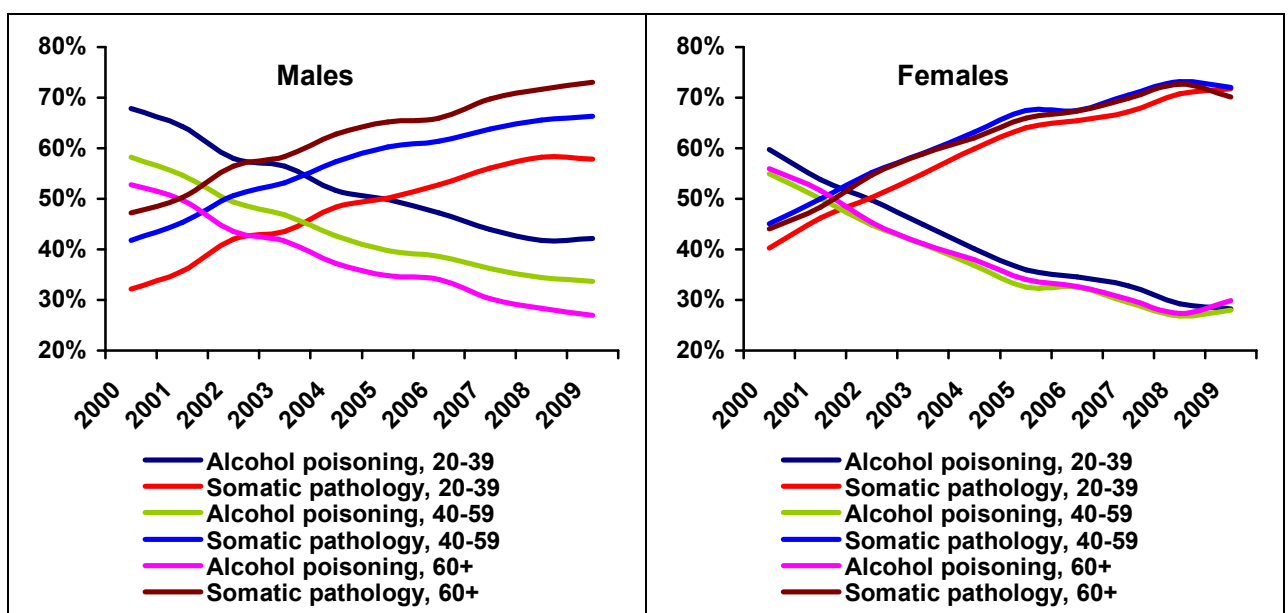


Figure 2. Changes in the structure the total alcohol mortality of adult population in Russia from 2000 till 2009 (%)

The pattern of alcohol-related somatic pathology was subjected to significant changes as well. During the last decade, nearly half of mortality due to alcohol-related somatic pathology was determined by alcoholic cardiomyopathy (I42.6), and contribution of digestive diseases caused by alcohol (mainly alcoholic cirrhosis) significantly increased. Currently, the share of these diseases in alcohol-related somatic mortality is exceeds one quarter for males and one third - for females (Table 1).

Table 1

Structure of mortality from alcohol-related somatic pathology among adult Russian population for three age groups and all ages, 2000-2009 (%)

Somatic alcohol-related diseases	Age groups							
	20-39		40-59		60 and more		Total adult	
	2000	2009	2000	2009	2000	2009	2000	2009
<i>Males</i>								
Mental disorders (F10)	20.0	9.4	19.6	10.2	23.9	10.5	20.6	10.1
Diseases of the nervous system (G31.2, G62.1, G72.1)	4.4	5.7	4.7	6.1	4.5	8.4	4.6	6.6
Alcoholic cardiomyopathy	58.2	55.5	58.6	60.1	51.4	54.7	57.1	58.0
Diseases of the digestive (K70, K29.2, K86.0)	17.3	29.4	17.1	23.6	20.2	26.4	17.7	25.3
Total	100	100	100	100	100	100	100	100
<i>Females</i>								
Mental disorders (F10)	18.2	8.9	16.2	8.8	17.1	8.2	16.6	8.7
Diseases of the nervous system (G31.2, G62.1, G72.1)	4.6	4.5	3.9	4.7	2.7	5.1	3.8	5.0
Alcoholic cardiomyopathy	54.6	46.4	55.4	49.6	55.1	49.7	55.2	49.1
Diseases of the digestive (K70, K29.2, K86.0)	22.6	40.2	24.6	37.0	25.2	36.9	24.4	37.3
Total	100	100	100	100	100	100	100	100

According to the official statistics, the overall contribution of alcohol-related mortality to the total mortality of working population in Russia is now close to 10 percent. However, the real contribution of alcohol-related mortality is substantially higher as showed by the results of regional analysis of alcohol-related mortality in Russia.

Regional profiles of mortality from alcohol poisoning and somatic diseases of alcoholic etiology should be similar because they are determined by a single risk factor - alcohol abuse. However, the coefficients of rank correlation between the regional distribution of deaths from alcohol poisoning and somatic pathology of alcoholic genesis (0.12 for men and 0.23 for women, N=83) showed no such similarity. If we assign rankings to the Russian regions on the levels of mortality from alcohol poisoning, and on the levels of mortality due to physical causes of

alcoholic etiology, the difference between these two ranks equal to more than 30 points (in either direction) is observed on one third of Russian territory. The share of regions with a difference between the ranks with 10 points or less is observed on less than one third of Russian territory for mortality of both males and females.

Such situation can arise only in the case of underreporting of deaths either due to alcohol poisoning, or due to alcohol-related somatic pathology. Also, every Russian region accounts for alcohol-related losses according to its own standards in the absence of uniform country-level standard.

At present we can identify three main reasons for underreporting of alcohol-related life losses in the Russian regions:

- In the case of death from somatic causes, alcohol-related diagnosis is made only in two cases: (1) when deceased is registered in the files of a drug treatment clinic; (2) in the presence of a psychiatrist at the moment.
- The analysis on the alcohol is not mandatory during the postmortem examination.
- Existing practice to make alcohol-related diagnoses as the last resort, due to lack of other options.

Thus, the existing legal framework does not prevent coding deaths from alcohol poisoning as deaths from somatic causes; it also allows underreporting of alcohol-related deaths at the cost of non-alcohol diagnoses (Nemtsov, AV, 2003, 2009, Weissman DA, Dubrovin, EV, Redko AN, 2006; Zaridze D. *et al.*, 2009a; 2009b; Leon DA *et al.*, 2011). It should be noted that an important source of latent alcohol-related deaths is unspecified cardiomyopathy (I42.9) and some causes belonging to the class of "symptoms, signs and ill-designated status," coded as R96-R99. Studies of these authors indicated that the alcohol-related component of mortality in Russia is substantially higher than that suggested by the official statistics. According to estimates by D. Zaridze based on data from three Siberian cities, about half of all deaths among working-age population is related to alcohol abuse. It looks like the conclusions of A. Nemtsov and David Zaridze regarding the undercount of alcohol-related losses in Russia and its regions are reasonable. However, the extent of this undercount requires further research, because even account of all alcohol-related diagnoses in current situation does not reveal the actual level of alcohol-related losses of the Russian population.

The first priority in this regard is the development of uniform standards in defining alcohol-related deaths for all Russian regions, which exclude a possibility for manipulation of such socially important indicator as alcohol mortality.

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