

## Research Article

# Alcohol-related problems in Russiaa Belarus: A comparative analysis of trends

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## Abstract

**Background:** The former Soviet Republics Russia and Belarus have one of the highest alcohol-related problems rates in the world. **Aims:** To estimate the aggregate level effect of alcohol on the alcohol-related morbidity and mortality rates in Russia and Belarus.

**Method:** Trends in alcohol-related morbidity and mortality rates and alcohol sales per capita from 1970 to 2013 in Russia and Belarus were analyzed employing an ARIMA analysis.

**Results:** Alcohol sales is a statistically significant associated with alcohol poisoning mortality, liver cirrhosis mortality and alcoholic psychoses incidence rates in both countries.

**Conclusion:** This comparative time-series analysis highlighted close temporal association between alcohol-related morbidity and mortality rates and population drinking in Russia and Belarus.

## Introduction

Alcohol is a major contributor to premature deaths toll in Eastern Europe [1]. Its effects on mortality seem to have been especially striking in the Slavic countries of the former Soviet Union (fSU), where it has been identified as one of the most important factor underpinning the mortality crisis that has occurred in the post-Soviet period [7,8,14,21,22]. Despite some positive changes in recent years, the former Soviet republics Russia and Belarus ranks among the world's heaviest drinking countries with an annual official consumption rate about 10 litres of pure alcohol per capita [7,8]. Furthermore, according to the WHO, in 2010, Belarus appears at the top of global rating with 17.5 litres of total alcohol consumption (including unrecorded consumption) per capita [27]. Evidence of a major effect of binge drinking on mortality pattern in these countries comes from both aggregate level analyses and studies of individuals [7,8,14,21,22,28]. In Russia, for example, alcohol may be responsible for 59.0% of all male and 33.0% of all female deaths at ages 15-54 years [28]. Corresponding figures for Belarus are somewhat lower: 28.4% of all male and 16.4% of all female deaths [15]. The drinking culture in Russia and Belarus is rather similar and characterized by a high overall level of alcohol consumption and the heavy episodic (binge) drinking pattern of strong spirits, leading to a high alcohol poisoning mortality rates [7,8,14,21,22].

In comparative perspective, Belarus presents an interesting contrast to other former Soviet countries with extremely high alcohol-related mortality rate. The developmental path in Belarus has been somewhat different to that seen in other countries in the post-Soviet period. By contrast to Russia, which implemented mass privatization after the collapse of the former Soviet Union, Belarus has adopted a more gradual approach to transition. In relation to this, Stuckler *et al.* [23] argue that rapid mass privatization and increased unemployment rate in the early 1990s was the major determinant of the mortality crisis in Russia during this time.

Alcohol poisoning death is caused by drinking a large amount of alcohol in a short period of time. Therefore, alcohol poisoning has been proposed as a main indicator for alcohol-related problems for countries where episodic heavy drinking predominates [21]. Although alcohol poisoning mortality rates was comparatively high in Russia and Belarus, even during the later-Soviet period, the alarming rise that has occurred during the post-Soviet period means that these countries have one of the highest alcohol poisoning mortality rates in the world [7,8,21].

Alcoholic psychosis is a secondary psychosis that usually occurs in alcohol-dependent individuals after the prolonged period of heavy drinking and withdrawal [5]. The alcoholic psychoses incidence rate is a reliable indicator of alcohol-related problems at the population level since there is a strong relationship between alcoholic psychoses incidence rate and alcohol consumption per capita [13,26].

Liver cirrhosis is a major cause of deaths in many developed countries [29]. There is general consensus about causal role of alcohol for the risk of liver cirrhosis [19]. The strong support for a direct link between alcohol and liver cirrhosis comes both from individual- and aggregate-level data [19]. During the recent decades an increase in liver cirrhosis mortality rates appeared in the former Soviet republics [29].

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