



FEDERAL RESEARCH INSTITUTE FOR
HEALTH ORGANIZATION
AND INFORMATICS
OF MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION

The contribution of alcohol to mortality in Russia

Elena Zamiatnina,
leading specialist of the Federal Research Institute
for Health Organization and Informatics
of the Ministry of Health of the Russian Federation
& PhD student in Demography at the HSE

April 2021

Alcohol: associated diseases

Acute intoxication (apnea, aspiration of gastric content)

Alcohol addiction

Gastrointestinal tract, pancreas and liver

- Alcoholic liver disease
- Alcoholic pancreatitis
- Cancer of the upper digestive tract (oral cavity, pharynx, hypopharynx, pharynx, esophagus)
- Motility disorders (esophagus, gastroesophageal reflux, gastric emptying, diarrhea)
- Mucosal damage (including hemorrhagic gastritis)
- Lactose intolerance
- Colorectal cancer

Metabolic disorders

- Hypoglycemia
- Hyperlipoproteinemia
- Hyperuricemia (including gout)
- Porphyria

Cardiovascular disease

- Cardiomyopathy
- Arrhythmia (including atrial fibrillation)
- Arterial hypertension

Alcoholic myopathy

Alcoholic osteopathy

Neurological and psychiatric disorders

- Peripheral neuropathy
- Dementia
- Cerebellar atrophy with dyskinesia
- Depression (including suicide)

Traumatic disorders

- Bone fractures
- Subdural hematoma

Breast cancer

Infections

- Endocarditis
- Tuberculosis
- Viral hepatitis
- Sepsis

Skin disease

- Psoriasis
- Teleangiectasias
- Spider angiomas
- Palmar erythema
- Rhinophyma

The list of causes of death, by definition related to alcohol consumption:

ICD-10 Code	Disease
F10	Mental and behavioral disorders attributed to the use of alcohol
F10.0	Acute intoxication
F10.1	Harmful use
F10.2	Dependence syndrome
F10.3	Withdrawal state
F10.4	Withdrawal state with delirium
F10.5	Psychotic disorder
F10.6	Amnesic syndrome
F10.7	Residual and late-onset psychotic disorder
F10.8	Other mental and behavioral disorders
F10.9	Unspecified mental and behavioral disorder
G31.2	Degeneration of nervous system attributed to alcohol
G62.1	Alcoholic polyneuropathy
G72.1	Alcoholic myopathy
I42.6	Alcoholic cardiomyopathy
K29.2	Alcoholic gastritis
K70	Alcoholic liver disease
K70.0	Alcoholic fatty liver
K70.1	Alcoholic hepatitis
K70.2	Alcoholic fibrosis and sclerosis of liver
K70.3	Alcoholic cirrhosis of liver
K70.4	Alcoholic hepatic failure
K70.9	Alcoholic liver disease, unspecified
K85.2	Alcohol-induced acute pancreatitis
K86.0	Alcohol-induced chronic pancreatitis
P04.3	Fetus and newborn affected by maternal use of alcohol
Q86.0	Fetal alcohol syndrome (dysmorphic)

Contribution of alcohol to mortality

- **By the estimation of Global Burden of Disease (GBD), globally alcohol consumption causes 2.8 million premature deaths per year (2017)**
- **By their calculations, 18% of deaths in Russia in 2016 were attributed to alcohol consumption. Polina Kuznetsova gives an estimate of 11% for 2018 year.**
- **To speak about aged 15–49 years people, by GBD 35% of males and 20% females deaths in Russia were associated with alcohol consumption**
- **Rates of premature deaths caused by alcohol in Russia are one of the highest in the world**

Sources:

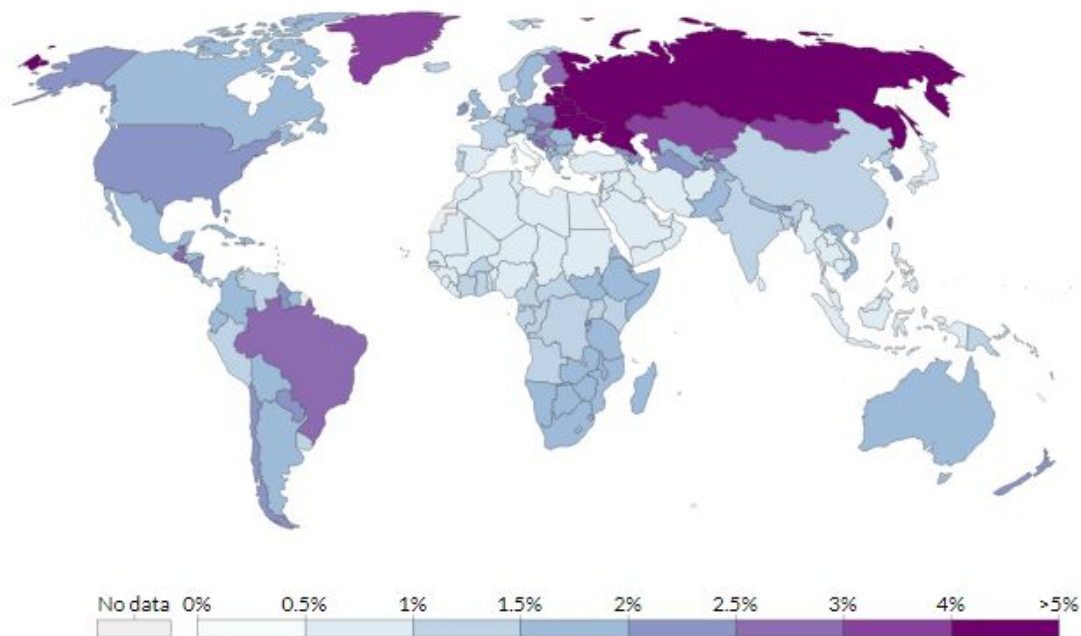
Kuznetsova, P. O. (2020). Alcohol mortality in Russia: assessment with representative survey data. *Population and Economics*, 4, 75.

Starodubov, V. I., Marczak, L. B., Varavikova, E., Bikbov, B., Ermakov, S. P., Gall, J., Naghavi, M., et al. (2018). The burden of disease in Russia from 1980 to 2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet*, 392(10153), 1138-1146.

Alcohol consumption and alcohol mortality

Share of population with alcohol use disorders, 2017

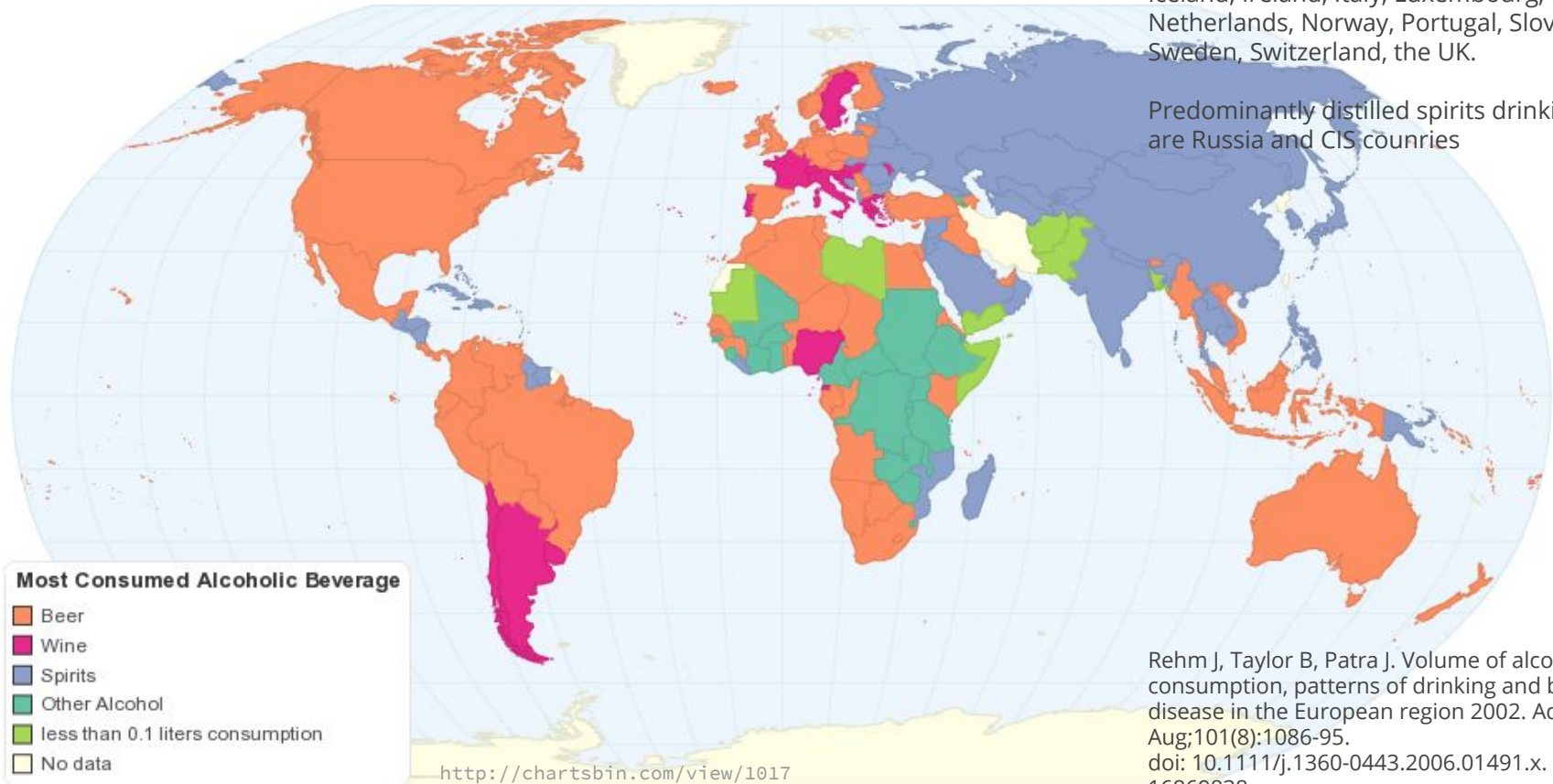
Alcohol dependence is defined by the International Classification of Diseases as the presence of three or more indicators of dependence for at least a month within the previous year. This is given as the age-standardized prevalence which assumes a constant age structure allowing for comparison by sex, country and through time.



Total alcohol consumption per capita (pure alcohol), 2018, Worldbank

1	Seychelles	20,5
2	Uganda	15,1
3	Czech Republic	14,5
4	Lithuania	13,2
5	Luxembourg	12,9
6	Germany	12,9
7	Ireland	12,9
8	Latvia	12,8
9	Spain	12,7
10	Bulgaria	12,7
11	France	12,3
12	Burkina Faso	12,0
13	Portugal	12,0
14	Austria	12,0
15	Slovenia	11,9
16	Romania	11,7
17	Poland	11,7
18	Switzerland	11,5
19	Montenegro	11,5
20	Belarus	11,5
21	United Kingdom	11,5
22	Moldova	11,4
23	Hungary	11,4
24	Tanzania	11,3
25	Russian Federation	11,2

Patterns of consumption



Predominantly wine and beer drinking countries of Europe (according to the classification by Rehm et al. (2006):

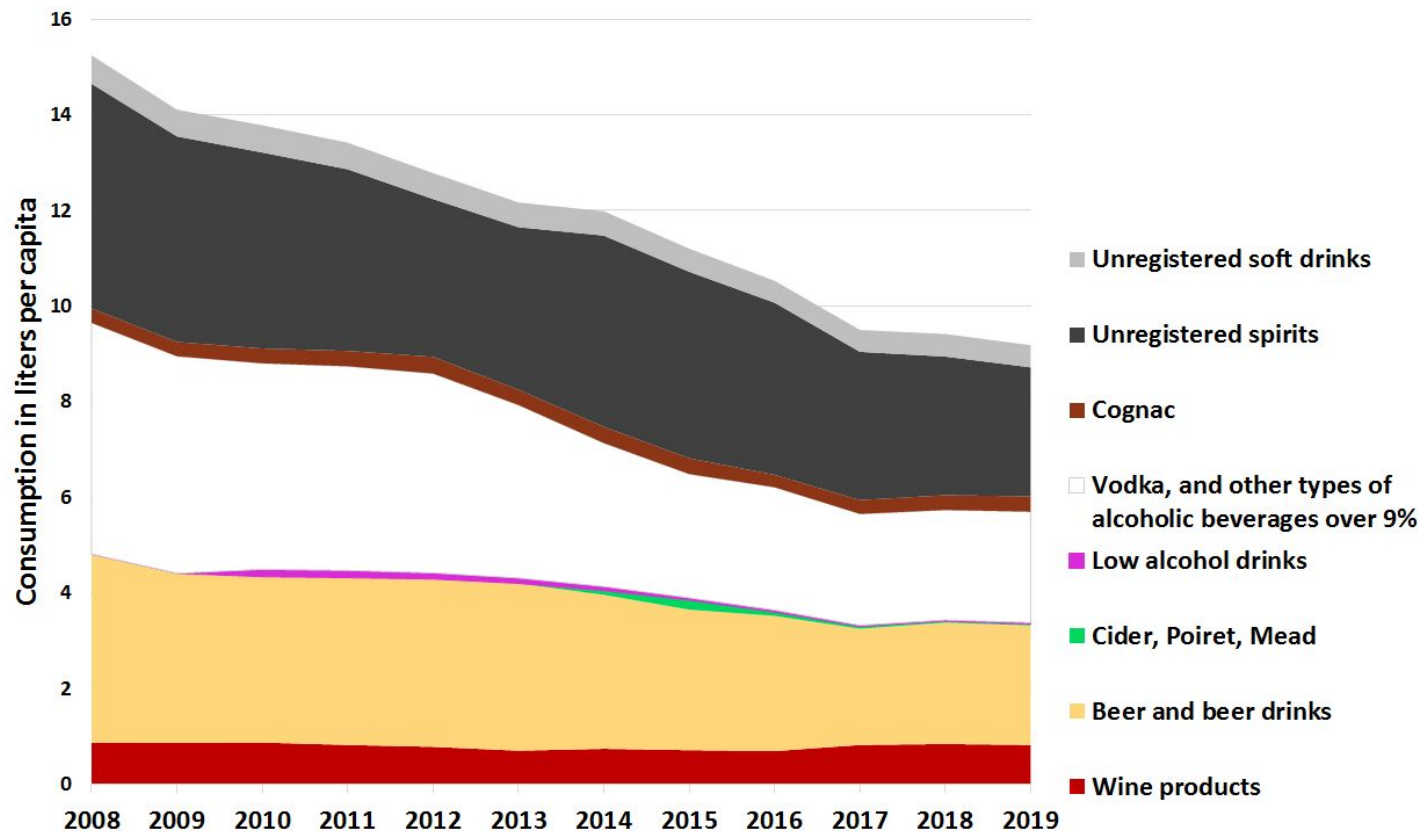
Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, the UK.

Predominantly distilled spirits drinking countries are Russia and CIS countries

Rehm J, Taylor B, Patra J. Volume of alcohol consumption, patterns of drinking and burden of disease in the European region 2002. *Addiction*. 2006 Aug;101(8):1086-95.
doi: 10.1111/j.1360-0443.2006.01491.x. PMID: 16869838.

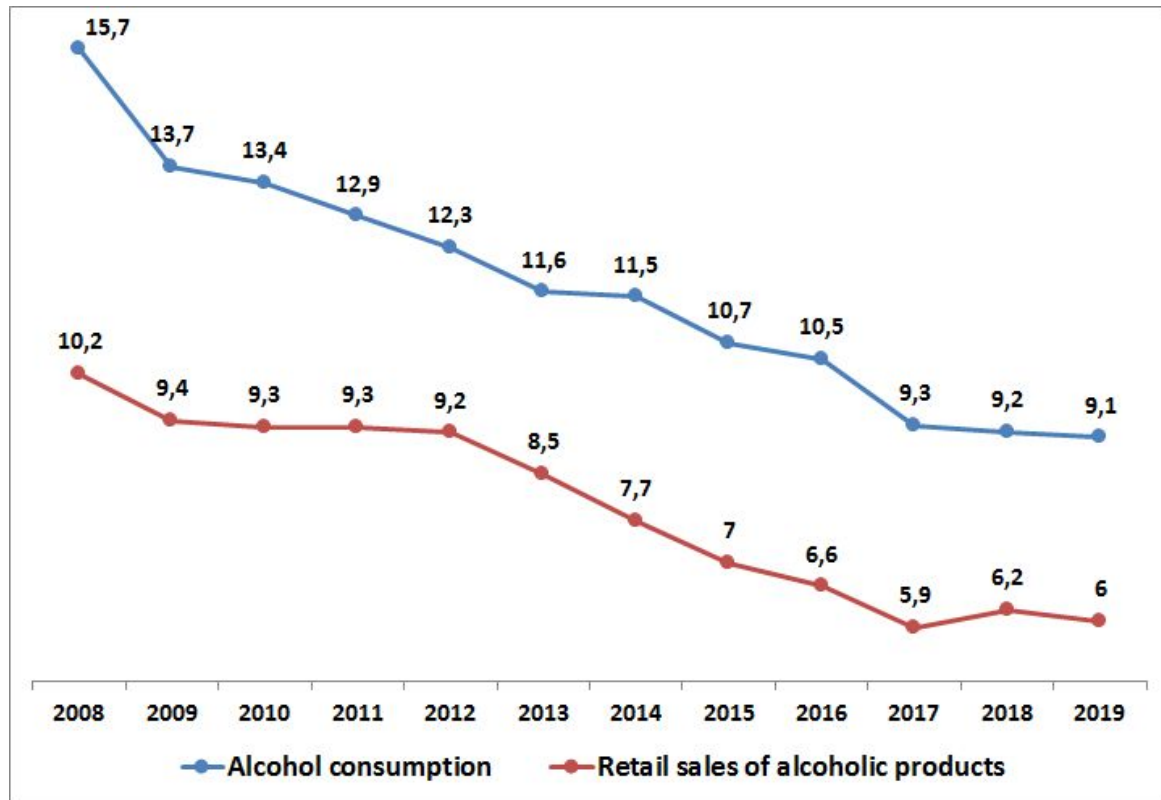
Structure of consumption

59% alcohol consumption in Russia is distilled spirits in 2019



Calculations of the Department of Risk Factor Prevention of the Federal Research Institute for Health Organization and Informatics of the Ministry of Health of the Russian Federation

Retail sales and unregistered consumption



Calculations of the Department of Risk Factor Prevention of the Federal Research Institute for Health Organization and Informatics of the Ministry of Health of the Russian Federation
Calculations for 0+ age

Non-beverage alcohol

168 people were questioned, 28% of them reported consuming non-beverage alcohol. Non-beverage alcohol consumers were more likely to be single, unemployed or retired, younger or older than 19–29 years, have lower educational status and income, have hangovers and drink moonshine.

The survey and analysis of trash bins identified the most popular brands of alcohol surrogates. There were medical drugs, including antiseptics, such as ‘ethanol’ and ‘aceptolin’ as well as medicinal tinctures with hawthorn, red pepper, etc.

Andrey Korotayev, Daria Khaltourina, Alisa Shishkina, Leonid Issaev, Non-Beverage Alcohol Consumption In Izhevsk: 15 Years Later, *Alcohol and Alcoholism*, , agaa116, <https://doi.org/10.1093/alcalc/agaa116>



Alcohol in the blood of the dead

Causes of death	All (%)	Men (%)	Women (%)	Region
Hypothermia (hypothermia)	74	77	74	Chuvashia
Asphyxia of the upper respiratory tract	74	78	53	Chuvashia
Drowning	73	76	57	Chuvashia
Traffic accident	41	49	25	Chuvashia
The killings	67	79	58	Chuvashia
Accidental poisoning		74		Izhevsk
Suicides		44		Izhevsk
Extreme temperature death	70			St. Petersburg
Circulatory system diseases	37	38	35	Yakutsk
Sudden cardiac death	44	46	38	Chuvashia
Carbon monoxide toxicity	78	79	68	Chuvashia
Head injuries	47	49	41	Chuvashia
Cardiomyopathy	46	47	45	Yakutsk
Fire accidents		67		Izhevsk
Affected by blunt solid objects	68			St. Petersburg

Sources:

Yakutsk (2007-2018)

Саввина, Н. В., Бессонова, О. Г., Борисова, Е. А., Колбина, Е. Ю., Калмаханов, С. Б., & Гржибовский, А. М. (2019). Анализ потенциальной мисклассификации причин смерти от болезней системы кровообращения по данным бюро судебно-медицинской экспертизы в г. Якутске в 2007-2018 гг. Экология человека, (10).

Chuvashia (cities Cheboksary and Novocheboksarsk) (2007-2018)

Сапожников, С. П., Козлов, В. А., Кичигин, В. А., & Голенков, А. В. (2018). Вклад алкоголя в смертность от внешних причин. Экология человека, (3).

Izhevsk (1998-1999, men aged 20-55)

Школьников, В. М., & Червяков, В. В. (2000). Политика по контролю кризисной смертности в России в переходный период. М.: ПРООН.

Saint Petersburg (2015-2017)

Давыдова, З. В., & Ягмуров, О. Д. (2019). Судебно-медицинская экспертиза алкогольной атрибутивной смертности в Санкт-Петербурге. Педиатр, 10(2).

To sum up

- There is the most dangerous “northern” type of alcohol consumption in Russia
- Most of alcohol (59%) is consumed in the form of spirits
- About a third is unreported consumption. Usually it represented by strong alcohols
- Forensic medical examinations show a high proportion of deaths with ethanol in the blood
- It is necessary to improve assessment of the contribution of alcohol to mortality in Russia

Thank you!