The contribution of alcohol to mortality in Russia

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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, larynx, 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)
- Porphyrria

**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 angiomatis
- Palmar erythema
- Rhinophyma

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

<table>
<thead>
<tr>
<th>ICD–10 Code</th>
<th>Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>F10.00</td>
<td>Acute intoxication</td>
</tr>
<tr>
<td>F10.01</td>
<td>Harmful use</td>
</tr>
<tr>
<td>F10.02</td>
<td>Dependence syndrome</td>
</tr>
<tr>
<td>F10.03</td>
<td>Withdrawal state</td>
</tr>
<tr>
<td>F10.04</td>
<td>Withdrawal state with delirium</td>
</tr>
<tr>
<td>F10.05</td>
<td>Psychotic disorder</td>
</tr>
<tr>
<td>F10.06</td>
<td>Anorectic syndrome</td>
</tr>
<tr>
<td>F10.07</td>
<td>Residual and late-onset psychotic disorder</td>
</tr>
<tr>
<td>F10.8</td>
<td>Other mental and behavioral disorders</td>
</tr>
<tr>
<td>F10.9</td>
<td>Unspecified mental and behavioral disorder</td>
</tr>
<tr>
<td>G31.2</td>
<td>Degeneration of nervous system attributed to alcohol</td>
</tr>
<tr>
<td>G62.1</td>
<td>Alcoholic polyneuropathy</td>
</tr>
<tr>
<td>G72.1</td>
<td>Alcoholic myopathy</td>
</tr>
<tr>
<td>H42.6</td>
<td>Alcoholic cardiomyopathy</td>
</tr>
<tr>
<td>K29.2</td>
<td>Alcoholic gastritis</td>
</tr>
<tr>
<td>K70.0</td>
<td>Alcoholic liver disease</td>
</tr>
<tr>
<td>K70.01</td>
<td>Alcoholic fatty liver</td>
</tr>
<tr>
<td>K70.1</td>
<td>Alcoholic hepatitis</td>
</tr>
<tr>
<td>K70.2</td>
<td>Alcoholic fibrosis and sclerosis of liver</td>
</tr>
<tr>
<td>K70.3</td>
<td>Alcoholic cirrhosis of liver</td>
</tr>
<tr>
<td>K70.4</td>
<td>Alcoholic hepatic failure</td>
</tr>
<tr>
<td>K70.9</td>
<td>Alcoholic liver disease, unspecified</td>
</tr>
<tr>
<td>K85.2</td>
<td>Alcohol-induced acute pancreatitis</td>
</tr>
<tr>
<td>K86.0</td>
<td>Alcohol-induced chronic pancreatitis</td>
</tr>
<tr>
<td>P04.3</td>
<td>Fetus and newborn affected by maternal use of alcohol</td>
</tr>
<tr>
<td>Q86.0</td>
<td>Fetal alcohol syndrome (dysmorphic)</td>
</tr>
</tbody>
</table>
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:

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.

Source: IHME, Global Burden of Disease

https://ourworldindata.org/alcohol-consumption
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

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
### Causes of death

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

**Sources:**

**Yakutsk (2007-2018)**

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

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

**Saint Petersburg (2015-2017)**
Давыдова, З. В., и Ямурларов, О. Д. (2019). Судебно-медицинская экспертиза алкоголь-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!