

Some aspects of alcohol-related mortality in Russia: Commentary on the article by P. Kuznetsova published in issue 4 (3) / 2020 of the Population and Economics Journal

Sergei V. Jargin¹

¹ Peoples' Friendship University of Russia, Moscow, 117198, Russia

Received 3 June 2021 ♦ Accepted 22 June 2021 ♦ Published 30 September 2021

Citation: Jargin SV (2021) Some aspects of alcohol-related mortality in Russia: Commentary on the article by P. Kuznetsova published in issue 4 (3) / 2020 of the Population and Economics Journal. Population and Economics 5(3): 24–29. <https://doi.org/10.3897/popecon.5.e69636>

Abstract

The aim of this communication is to comment on certain statements and conclusions presented in the paper on alcohol-related mortality by P.O. Kuznetsova from the medical viewpoint, summarizing and updating at the same time the preceding papers. The author refers to some evidence showing positive tendencies in Russia, namely, a decline in both the heavy binge drinking and total alcohol consumption, and claims that exaggerating the alcohol consumption problem indirectly shifts the responsibility for the relatively short life expectancy onto the excessive alcohol consumption, thus camouflaging shortcomings of the healthcare and public assistance.

Keywords

alcohol; cardiovascular; mortality; causes of death

JEL codes: J00, J01

Cardiovascular vs. alcohol-related mortality

In her paper, Kuznetsova states:

«The structure of alcohol mortality is dominated by diseases of the cardiovascular system and external causes <...> A more detailed study of the structure of alcohol mortality enables highlighting the following individual causes with the largest contribution: alcoholic cardiomyopathy, accidental alcohol poisoning and suicides for men, and atherosclerotic heart disease, acute myocardial infarction and non-alcoholic liver diseases for women» (Kuznetsova 2020).

The cause of the relatively high registered cardiovascular (CV) mortality in the former Soviet Union, and of its further increase after 1990, is evident to pathologists and other medical specialists. There is a tendency to overdiagnose CV diseases both at autopsies and in people dying at home, not undergoing autopsy. If a cause of death is not entirely clear, one of the standard statements for a death certificate is the following: «Ischemic heart disease with cardiac insufficiency», or similar (Jargin 2015). Furthermore, the irregular treatment of arterial hypertension (Roberts et al. 2012) and diabetes mellitus contributes to the CV mortality. Not surprisingly, deterioration of quality in pathology and other healthcare services in the 1990s coincided with the increase in CV mortality (Zatonski and Bhala 2012). This could be indirectly confirmed by the following citation: «Increases and decreases in mortality related to CV diseases <...> but not to myocardial infarction, the proportion of which in Russian CV mortality is extremely low» (Davydov et al. 2007). Indeed, the diagnosis of myocardial infarction is usually based on distinct clinical or morphological criteria, while ischemic or atherosclerotic heart disease with cardiac insufficiency is sometimes used postmortem without strong evidence.

The overdiagnosis of CV diseases is compatible with the «absence of any substantial variation in mortality rates from neoplasms, including those related to alcohol, during the period 1984–1994» (Leon et al. 1997) because cancer is rarely diagnosed without evidence. Characteristically, the mortality from lung cancer (requiring X-ray or autopsy for the diagnosis) in males decreased by 17% over the period 1998–2007, while that from breast cancer, rarely remaining undiagnosed, «increased considerably» (Davydov et al. 2007).

Alcoholic cardiomyopathy has been diagnosed in Russia more frequently than in other countries; details and references are in (Jargin 2016a). The diagnosis of cardiomyopathy was used in cases of sudden death of alcohol consumers (Paukov and Erokhin 2004), whereas the real cause of death could have remained unknown. Of note, clinically significant cardiomyopathy can develop after long-term excessive alcohol consumption especially in genetically predisposed people (Djousse and Gaziano 2008; Stătescu et al. 2021). It is widely believed that moderate alcohol consumption is harmless, while epidemiological studies indicate that for certain diseases the mortality risks among moderate alcohol consumers are lower than among those who have never consumed it (Kuznetsova 2020). However, starting in the early 2000s, the cardioprotective effects of low doses were abnegated by the results of some epidemiological studies. There is a disagreement in the literature over the risks and benefits of moderate drinking (Stătescu et al. 2021). The concept may be influenced by manufacturers' interests, which is beyond the scope of this commentary. Centuries of adaptation of Europeans and other peoples to alcohol included the adaptation to chemical by-products of the natural fermentation. Innovative methods of the alcohol manufacturing are accompanied by new by-products, adaptation to which has not yet developed. In animal experiments, synthetic and cellulosic ethanol turned out to be more toxic than that from edible sources (Nuzhnyi 1995). In any case, the supposed benefit from a moderate consumption should not be propagandized because of the risk of acute and chronic overdose.

At the same time, there is a tendency to exaggerate alcohol abuse and its cause-effect relationship with mortality, particularly with the CV mortality; details and references are in (Jargin 2015). That way, the responsibility for decrease in the life expectancy after 1990, partly caused by shortcomings of the healthcare and toxicity of some alcoholic beverages, is shifted onto consumers, i.e., self-inflicted diseases caused by alcohol. The tendency to exaggerate the cause-effect relationships between alcohol and CV mortality is relatively new for the Russian literature. An epidemiological study from 1977 reported that the prevalence of CV diseases including hypertension was not significantly higher among men who drank excessively than

in the general male population (Kopyt and Gudzhabidze 1977). The heavy binge drinking was discussed as a determinant of the increased mortality in Russia (Razvodovsky 2012). Without denying the harm from this hazardous pattern of alcohol consumption, it should be noted that the heavy binge drinking has been continuously declining in Russia (Perlman 2010; Radaev 2015). Moreover, the binge drinking in some marginalized groups and other people should not considerably influence the national statistics of life expectancy. Unlike in the past, it is difficult to meet a heavily drunk person today even among marginalized people. The drinking of vodka has been partly replaced by a moderate consumption of beer. As for young people, many of them adopt a moderate alcohol consumption style from the beginning.

Surrogates and unrecorded alcohol

Certain publications create impression of a widespread deliberate intake of surrogates — disinfectants, lotions, etc. (Gil 2021). For example, a mass poisoning occurred in several places of Russia in 2006, particularly in Siberia. The number of poisonings with marked jaundice was estimated to be 12,611, including 1,189 lethal cases, reportedly caused by disinfectant Extrasept-1, containing diethyl phthalate and polyhexamethylene guanidine (PHMG). Of note, the surrogate was sold in vodka bottles (Luzhnikov 2014; Ostapenko et al., 2011); more details and references are in (Jargin 2016a, b). Considering hepatotoxicity, «chloride compounds», i.e., organochlorides have been discussed as possible causative agents (Khal-tourina and Korotayev 2016; Nuzhnyi et al. 2010).

Furthermore, the following citation should be commented:

«According to WHO estimates, Russia is the third country in Europe in terms of consumption of illegal alcohol, which in 2016 amounted to 3.6 liters of ethanol per capita per year» (Kuznetsova 2020).

The concept of illegal, unrecorded or unaccounted alcohol is not directly applicable to Russia without a comment that ethanol from non-edible sources, diverted from the industry or imported, has been used for production of beverages sold through legally operating shops in bottles labeled as vodka and other beverages (Nemtsov 2009; Nuzhnyi 1995; Nuzhnyi et al. 1998), thus being formally recorded. Apart from parochial sales of samogon mainly in rural areas, there are some clandestine retail sales of unrecorded alcohol, but its share in the nationwide alcohol trade volume is apparently not high. The Internet trade has been «typically for bulk orders only» (Neufeld et al. 2017). The great part of alcohol has been sold through legally operating shops, supermarkets, and eateries since 1990, and till 2006 — also through kiosks (small street shops). The consumers are usually unable to distinguish by sight between branded and counterfeit vodka as it is sold at the same shops and looks identical or almost identical. In the 1990s, slanting labels and lax closures were known as attributes of falsified beverages. Today, bottles with falsified beverages are «in good accordance with the original products» (Neufeld et al. 2017).

Pharmacy products

Pharmacy products, ethanol-containing tinctures and solutions (hawthorn, boric acid, etc.) are relatively expensive today. Some alcohol-containing antiseptics have appeared recently e.g., *Aseptolin* (ethanol-glycerol mixture) recommended for the skin disinfection and reportedly used for drinking (Platforma 2019). In Moscow, a 100 ml vial costs 70 rubles (around 1 US dollar) which

is roughly equivalent to cheap vodka converted to pure ethanol. Elsewhere, *Aseptolin* and similar solutions may cost less. The concentration marked on the label (90%) can pertain to the ingredient named Glycerytan which is a mixture. The ethanol concentration is usually not indicated on the label. Organoleptically, the ethanol concentration is about 60% — the liquid is sweetish and tolerated by oral mucosa. The same might be true for the published image of hand sanitizer with the unreadable small-printed text (Gil 2021) presented by the author as 95% ethanol solution. Toxicologically, the medicinal alcohol is not substantially different from that used for the vodka production. Therefore, preparations such as *Aseptolin* would not have a significantly higher impact on the mortality statistics compared to vodka. The hypothesis suggesting that «because of its greater strength, in combination with a lack of labeling, unrecorded alcohol may involve greater intake of ethanol per occasion, leading to over-proportional harm» (Lachenmeier 2021) is questionable for lack of stimuli, such as the pleasant taste and traditional scent, for prolonged consumption. Moreover, non-beverage alcohol would more readily provoke vomiting. Alcohol-dependent people have their experience, distinguish good and bad products, know their ailments that would worsen after the intake of surrogates with toxic ingredients. Not many people would knowingly drink such surrogates today, when vodka and strong beer are easily available in supermarkets. The average salary (pension) / minimal vodka price ratio is several times higher than it had been prior to the anti-alcohol campaign started in 1985. The drinking of technical liquids and lotions has decreased abruptly after the end of the anti-alcohol campaign in 1989, thanks to the «sudden availability of cheap alcohol» (Keenan et al. 2015).

Discussion and conclusions

In regard to surveys and questionnaires, Dr. Kuznetsova (2020) rightly mentioned that respondents tend to underestimate alcohol consumption. The reliability of some studies based on surveys and opinion polls is questionable because these research methods have been discredited by obtrusive solicitations to participate in various surveys often asking for private information — in the streets, per telephone etc. Many people in Russia are «sick and tired» of surveys and will not be sincere answering the questions.

After all, the conclusion is cautiously optimistic: the heavy binge drinking and overall alcohol consumption are declining in Russia. However, there is still a need to prevent offences against people with alcoholism and alcohol-related dementia, aimed at appropriation of their residences, other properly, to improve the healthcare and public assistance. Unfortunately, it is hard to disagree that alcoholics in Russia have sometimes been those «who can be disdained, rejected, hated and persecuted, legally and without sense of guilt» (Avtonomov 2014). Among the causes of the relatively low life expectancy is the limited availability of high-quality healthcare as well as toxicity of some legally sold alcoholic beverages, acknowledging that there has been a tendency of quality improvement of sold alcohol over approximately last 15 years.

Reference list

- Avtonomov DA (2014) Vklad A.R. Dovzhenko v mifologizatsiyu otechestvennoi narkologii. Predposylki, praktika, analiz i posledstviya [A.R. Dovzhenko's contribution to the national narcology mythologisation. Prerequisites, practice, analysis and implications]. *Narkologiya [Narkologiya]* 10: 94–102. URL: <https://www.elibrary.ru/item.asp?id=22476431> (in Russian)

- Davydov MI, Zaridze DG, Lazarev AF, Maksimovich DM, Igitov VI, Khvastuik MG (2007) Analiz prichin smertnosti naseleniya Rossii [Analysis of mortality in Russian population]. *Vestnik Rossiiskoi Akademii Meditsinskikh Nauk* [Bulletin of the Russian Academy of Medical Sciences] (7): 17–27. PMID: 17718076 (in Russian)
- Djousse L, Gaziano JM (2008) Alcohol consumption and heart failure: a systematic review. *Current Atherosclerosis Reports* 10: 117–120. <https://doi.org/10.1007/s11883-008-0017-z>
- Gil AU (2021) COVID-19: a need for stricter control over unrecorded alcohol in Russia. *Adicciones* 1634. <https://doi.org/10.20882/adicciones.1634>
- Jargin SV (2015) Cardiovascular mortality trends in Russia: possible mechanisms. *Nature Reviews Cardiology* 12(12): 740. <https://doi.org/10.1038/nrcardio.2015.166>
- Jargin SV (2016a) Alkogol' i alkogolizm v Rossii s 1970-go po 2015 god [Alcohol and alcoholism in Russia: 1970–2015]. *GlavVrach* [Chief Physician] 2: 54–60. URL: <https://www.elibrary.ru/item.asp?id=35684670> (in Russian)
- Jargin SV (2016b) Questionable information on poisonings by alcohol surrogates. *Interdisciplinary Toxicology* 9(3-4): 83–4. <https://doi.org/10.1515/intox-2016-0010>
- Keenan K, Saburova L, Bobrova N, Elbourne D, Ashwin S, Leon DA (2015) Social factors influencing Russian male alcohol use over the life course: A qualitative study investigating age based social norms, masculinity, and workplace context. *PLoS One* 10: e0142993. <https://doi.org/10.1371/journal.pone.0142993>
- Khaltourina D, Korotayev A (2016) Alcohol control policies and alcohol-related mortality in Russia: Reply to Razvodovsky and Nemtsov. *Alcohol and Alcoholism* 51(5): 628–9. <https://doi.org/10.1093/alcalc/agw022>
- Kopyt NIa, Gudzhabidze VV (1977) Vliyanie zloupotrebleniya alkogolem na nekotorye pokazateli zdorov'ya naseleniya [Effect of alcohol abuse on the health indices of the population]. *Zdravookhranenie Rossiiskoi Federatsii* [Healthcare of the Russian Federation] 6: 25–8. PMID: 883432. (in Russian)
- Kuznetsova PO (2020) Alcohol mortality in Russia: assessment with representative survey data. *Population and Economics* 4(3): 75–95. <https://doi.org/10.3897/popecon.4.e51653>
- Lachenmeier DW, Neufeld M, Rehm J (2021) The impact of unrecorded alcohol use on health: what do we know in 2020? *Journal of Studies on Alcohol and Drugs* 82(1): 28–41. PMID: 33573720
- Leon DA, Chenet L, Shkolnikov VM, Zakharov S, Shapiro J, Rakhmanova G (1997) Huge variation in Russian mortality rates 1984–94: artefact, alcohol, or what? *Lancet* 350: 383–8. [https://doi.org/10.1016/S0140-6736\(97\)03360-6](https://doi.org/10.1016/S0140-6736(97)03360-6)
- Luzhnikov EA (2014) *Meditsinskaya toksikologiya* [Medical Toxicology]. Geotar-Media, Moscow, 923 pp. (in Russian)
- Nemtsov AV (2009) *Alkogol'naya istoriya Rossii* [Alcoholic history of Russia: contemporary period]. Urss.ru, Moscow, 318 pp. (in Russian)
- Neufeld M, Lachenmeier DW, Walch SG, Rehm J (2017) The internet trade of counterfeit spirits in Russia - an emerging problem undermining alcohol, public health and youth protection policies? *Journal of Studies on Alcohol and Drugs* 6: 520. <https://doi.org/10.12688/f1000research.11418.2>
- Nuzhnyi VP (1995) Toksikologicheskaya kharakteristika ehtilovogo spirita, alkogol'nykh napitkov i soderzhashchikh v nikh primesei [Toxicological characteristic of ethyl alcohol, alcoholic beverages and of admixtures to them]. *Voprosy Narkologii* [Narcology Issues] 3: 65–74. (in Russian)
- Nuzhnyi VP, Kharchenko VI, Akopian AS (1998) Izbytochnoe potreblenie alkogolya v Rossii-vesomyi faktor riska boleznei sistemy krovoobrashcheniya i vysokoi smertnosti naseleniya (obzor) [Alcohol abuse in Russia is an essential risk factor of cardiovascular diseases development and high population mortality (review)]. *Terapevticheskii arkhiv* [Therapeutic archive] 70: 57–64. PMID: 9864807. (in Russian)

- Nuzhnyi VP, Rozhanets VV, Savchuk SA (2010) Khimiya i toksikologiya ehtilovogo spirta i napitkov, izgotovlennykh na ego osnove [Chemistry and toxicology of ethyl alcohol and beverages on its basis]. urss.ru, Moscow, 196 pp. (in Russian)
- Ostapenko YN, Brusin KM, Zobnin YV, Shchupak AY, Vishnevetskiy MK, Sentsov VG, Novikova OV, Alekseenko SA, Lebed'ko OA, Puchkov YB (2011) Acute cholestatic liver injury caused by polyhexamethyleneguanidine hydrochloride admixed to ethyl alcohol. *Clinical Toxicology* 49 (6): 471–77. <https://doi.org/10.3109/15563650.2011.592837>
- Paukov VS, Erokhin IuA (2004) Patologicheskaya anatomiya p'yanstva i alkogolizma [Pathologic anatomy of hard drinking and alcoholism]. *Arkhiv patologii [Archive of pathology]* 66(4): 3–9. PMID: 15449679. (in Russian)
- Perlman FJ (2010) Drinking in transition: trends in alcohol consumption in Russia 1994–2004. *BMC Public Health* 10: 691. <https://doi.org/10.1186/1471-2458-10-691>
- Radaev V (2015) Impact of a new alcohol policy on homemade alcohol consumption and sales in Russia. *Alcohol and Alcoholism* 50: 365–72. <https://doi.org/10.1093/alcalc/agn008>
- Razvodovsky YE (2012) Estimation of alcohol attributable fraction of mortality in Russia. *Adicciones* 24(3):247–52. <https://doi.org/10.1155/2014/483910>
- Roberts B, Stickley A, Balabanova D, Haerpfer C, McKee M (2012) The persistence of irregular treatment of hypertension in the former Soviet Union. *Journal of Epidemiology & Community Health* 66: 1079–82. <https://doi.org/10.1136/jech-2011-200645>
- Stătescu C, Clement A, Șerban IL, Sascău R (2021) Consensus and Controversy in the Debate over the Biphasic Impact of Alcohol Consumption on the Cardiovascular System. *Nutrients* 13(4): 1076. <https://doi.org/10.3390/nu13041076>
- Zatonski WA, Bhala N (2012) Changing trends of diseases in Eastern Europe: closing the gap. *Public Health* 126: 248–52. <https://doi.org/10.1016/j.puhe.2011.11.017>

Other data sources:

- Платформа (2019) Теневой рынок алкогольной продукции: структура, тенденции, последствия. Расширенная версия. Центр развития потребительского рынка Московской школы управления СКОЛКОВО и Центр социального проектирования «Платформа». URL: <http://r-n-l.ru/normdocs/2019/2019-09-20-skolkovo-ten-alco-rynok.pdf>

Information about the author

- Sergei Vadimovich Jargin, Candidate of Medicine, Docent at the Department of Pathology, Peoples' Friendship University of Russia. E-mail: jargin@mail.ru