

Poisonings by alcohol-containing liquids in Russia and overtreatment of supposed alcoholics

Sergei V. Jargin

Abstract

During the anti-alcohol campaign in the former Soviet Union (1985-1989), consumption of inexpensive colognes and technical alcohol-containing liquids was widespread. Drinking of non-beverage alcohol decreased abruptly after the campaign, when vodka and beer became readily available and inexpensive. Alcohol consumption predictably increased after the campaign. The upsurge in alcohol consumption facilitated economical reforms of the early 1990s: workers did not oppose privatization of factories partly thanks to their drunkenness. Following abolition of the state alcohol monopoly in 1992, the country was flooded by beverages of poor quality, sold through legally operating shops and kiosks, which caused severe poisonings. Thereafter, the quality of beverages has improved while the consumption tended to decrease. Besides, several aspects of treatment including invasive procedures applied with questionable indications are discussed here. A concluding point is that the society should care of its weaker members, including those suffering of alcohol use disorder and alcohol-related dementia, because they can be maltreated, abused and expropriated. In regard to the future research, toxicity of some alcoholic beverages sold in Russia is of particular importance. Of note, the military and medical ethics are not the same. The comparatively short life expectancy in Russia is a strategic advantage as it necessitates less healthcare investments and pensions. Apparently, this has been a motive of the unethical attitude to persons supposed to have alcohol use disorder, discussed in this chapter.

Keywords: alcohol, alcoholism, mortality, Russia

Introduction

The harms associated with excessive alcohol consumption in Russian Federation (RF) are known (Bailey 2018; Leon et al. 2009; McKee 1999; Neufeld and Rehm 2013). However, there is a tendency to exaggerate the topic by some Russian writers; discussed previously by Jargin (2017a,b, 2018, 2024a); Yuri Razvodovski (2013-2017) is an example. Yuri asked me per e-mail to write a “friendly” letter to the Editor referring to his article. An excerpt from the correspondence is presented here (Fig. 1). In reply, I cited the phrase: “The official statistical data do not support the claims that the... anti-alcohol campaign (AAC) contributed to the dramatic growth in fatal poisonings by non-beverage alcohol surrogates” (Razvodovski 2017a) and commented that I witnessed mass poisonings with window cleaner in Siberia in 1988.

Considering the large scale of the window cleaner sales, it was knowingly tolerated by authorities. Poisonings with methanol and organochlorides were known to occur as well. Yuri replied that “there are two realities: one, which we both witnessed, and another: official statistics”. Obviously, a scholar should discuss the “realities we both witnessed”, that is, common knowledge and observations, otherwise his papers are misleading. Doubting the data and conclusions by Razvodovsky, I asked him to send me a link to the statistics used in his articles. He replied that the data were partly “provided by colleagues under condition of confidentiality”, partly taken from the Russian Statistical Committee <http://www.gks.ru>. There are no other references pertaining to Russian statistics e.g. alcohol induced psychosis incidence rate since 1970, trends of alcohol poisonings since 1956 and others (Razvodovsky 2015, 2017a,b). Using this URL, I was unable to find the data corresponding to statistics and graphs given in the above-cited papers. Moreover, the graph “Vodka affordability” (2017b) does not agree with official data summarized in a table by Jargin (2017a). The graph in (Razvodovsky 2015) is also unrealistic. The sales of wine must have been higher than those shown on the graph till approximately 1988. Besides, in consequence of the anti-alcohol measures that had restricted vodka sales in 1972, there must have been a decrease in vodka and an increase in wine sales; details are below. If even official statistics cited by Razvodovsky do exist, it is not necessarily reliable. Release of information was controlled, sometimes being designed to mislead. For example, between 1984 and 1994, mortality rates in Russia underwent a rapid decline followed by a steep increase. The decrease in mortality including the rate of lethal poisonings (Razvodovsky 2017a) might have been initially overstated to highlight successes of the AAC (launched 1995 and reached failure by 1989), being subsequently compensated by overstated mortality figures (Jargin 2017c). There is apparently an artefact behind the “huge variation in Russian mortality” (Leon et al. 1997). Today, the increase in the life expectancy seems to be overstated again to emphasize successes of current policies.

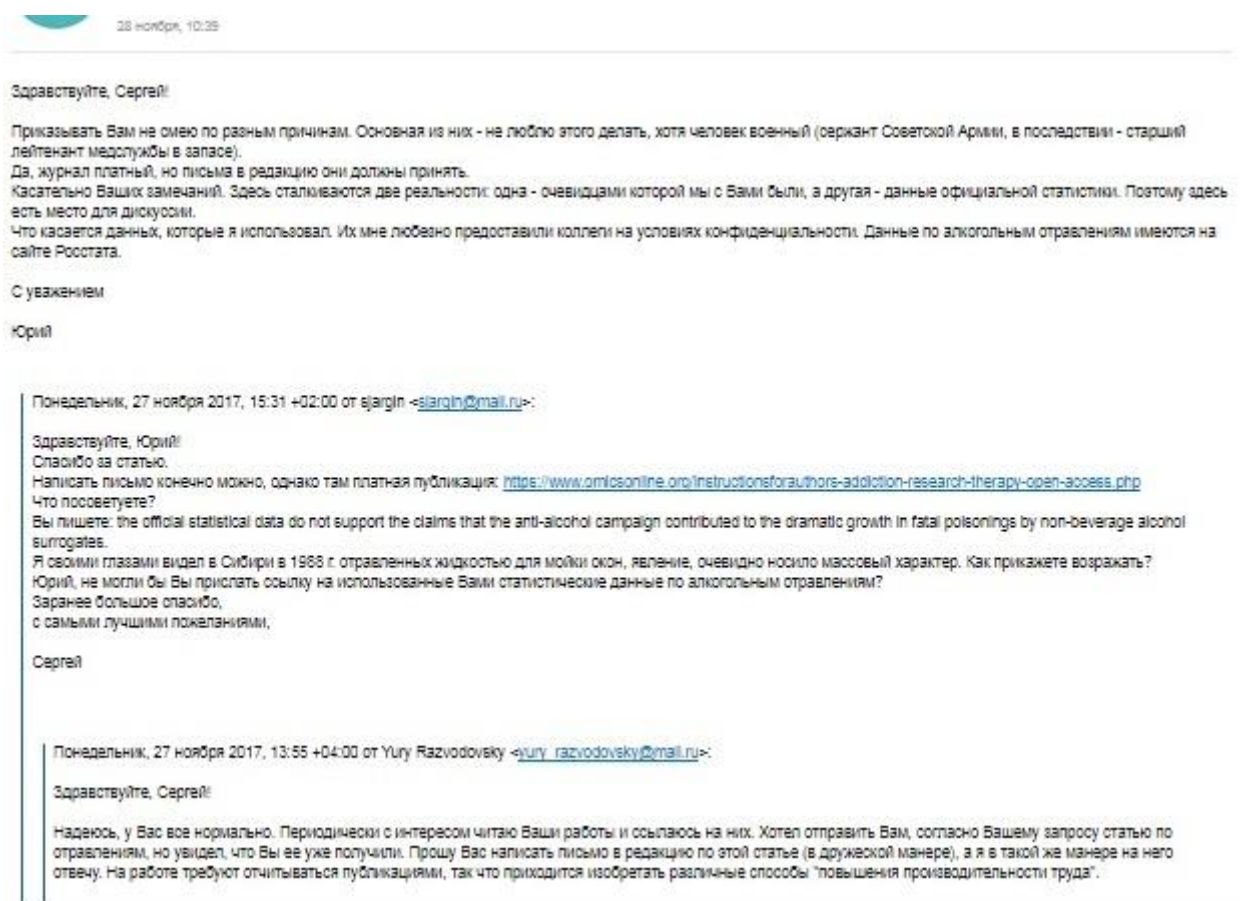


Fig. 1. E-mail correspondence Jargin-Razvodovsky, cited in the text.

Another questionable concept: “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” (Razvodovsky 2015). In fact, the alcohol-related psychosis incidence may be discussed as an indicator of alcohol consumption in countries with a stable quality of alcoholic beverages but not in Russia, where the quality oscillated considerably over the last 4 decades. By analogy with other complications, psychosis-like conditions may be caused not only by excessive intake of ethanol but also by other substances in poor quality alcoholic beverages and surrogates. Besides, it is known that psychoses have been overdiagnosed in the former Soviet Union (SU) (Jargin 2011). Of note, methanol and carbon tetrachloride can produce hallucinations and other symptoms of psychosis. After 1991, the increase in mortality exceeded that of alcohol consumption, which grew from 1987 to 1992 by 25-27 %. For comparison, mortality from alcohol-related causes increased during the same period 2.5 times and the alcohol induced psychosis incidence rate increased 2.4 times (Nuzhnyi 1995). Numerous lethal intoxications after the intake of moderate doses were reported (discussed below with references). The statement by Razvodovsky (2017a): “...alcohol surrogates (industrial spirits, antiseptics, lighter fluid and medications containing alcohol) may

be responsible for the extremely high level of fatal alcohol poisonings in Russia” creates impression that consumers deliberately purchased surrogates for drinking. However, it is known that consumption of technical liquids and lotions decreased abruptly after the AAC, when alcoholic beverages have become easily available (Keenan et al. 2015): numerous shops and kiosks were opened; there have been no queues as in the Soviet time. The average salary (pension) / vodka price ratio remained several times higher than it had been prior to the AAC; the price dynamics in relation to salaries and pensions is summarized in a table in the preceding review by Jargin (2017a). The supposition that alcoholics would voluntarily drink surrogates when regular beverages are available is unrealistic. They have their experience, distinguish good and bad products, know their ailments that may exacerbate after the intake of poor-quality alcohol. Some alcoholics would never drink beer if it smells technical alcohol.

Furthermore, the graph titled “Indices of real price, tax, affordability and per capita vodka sales, real disposable income, total alcohol consumption, total alcohol sales and unrecorded alcohol consumption in Russia (2010-2015)” (Razvodovsky YE (2017c) does not start from zero, thus creating impression that affordability of vodka changed considerably. A similar graph was published in (Razvodovsky 2017b). As mentioned above, the average salary (pension) /minimal vodka price ratio oscillated without significant changes over the period 2010-2015 and later, remaining several times higher than it had been prior to AAC (Jargin 2017a). Current governmental anti-alcohol measures resulted only in moderate oscillations of the real vodka price considering inflation. There has been no significant decrease in physical availability of alcohol: the beverages are sold without queues in numerous shops and supermarkets, while the alcohol sale hours are longer than before the AAC. In the author’s opinion, the current decrease in alcohol consumption is mainly caused by the responsible way of life under conditions of the market economy, intimidation and harassment of socially unsupported alcohol-consuming people, crime aimed e.g. at appropriation of their residences, which does not predispose to leisure drinking. Admittedly, the situation seems to be improving: there is more social order today than in the recent past. As for younger people, they seem to overtake the moderate alcohol consumption style prevailing in other countries.

Furthermore, Razvodovsky mentioned in his correspondence that he is a “military man” (Fig. 1). Since the late 1980s, many former party, military and other functionaries as well as their protégés, were introduced into educational and scientific institutions of the former SU. They applied pressure not only to facilitate their own careers but also to impose prescribed ideology. For example, phrases like “Alcohol is the biggest killer in Russia” (Razvodovsky 2017a) are suitable to disguise shortages of public healthcare, shifting responsibility for the relatively low

life expectancy from authorities onto patients i.e. supposedly self-inflicted diseases due to excessive alcohol consumption. Military functionaries and their relatives will become more dominant thanks to the Ukraine war. Those participating in it, factually or on paper, are obtaining the veteran status and hence privileges over fellow-citizens. Some of them will occupy leading positions in universities without adequate preparation and selection. War veterans enjoy advantages in the healthcare and everyday life; there are, however, misgivings that the status has been awarded gratuitously to some persons from the privileged milieu. At the same time, relatives of superior officers evaded conscription under various pretexts. In particular, many institutions of higher education grant exemption from military service. Being not accustomed to hard and meticulous work, some of the functionaries' protégés have been involved in professional misconduct of different kind (Jargin 2020a). Note that military and medical ethics are not the same. The comparatively short life expectancy in Russia is a strategic advantage as it necessitates less healthcare investments and pensions. Apparently, this has been a motive of the unethical attitude to individuals supposed to have alcohol use disorder, discussed in this chapter. Finally, Razvodovsky mentioned in his correspondence the publication pressure, forcing him to publish as much as possible. Note that science, to be truthful, must be free from all kinds of pressure. Considering the above and previously published comments, numerous papers by Razvodovsky are biased and contain misquoting; the references are in Jargin (2018). The recently detected misquoting is presented here. It is written in the paper by Razvodovsky (2014) with reference to the article by Kim and Johnston (2011): "In 2002 the stroke mortality rate in Russia among men age 45-54 years was ten times higher than in France, Germany or Italy." There are no such statements in the latter article; neither there are breakdowns by age and sex. Misquoting was found in other Razvodovsky's articles e.g. (2020), examples are in the paper by Jargin (2020b). As far as we can see, the attitude to citation remains generally irresponsible in the former SU (Jargin 2020a).

The exaggeration of alcohol-related topics aims to disguise shortcomings of the healthcare, with responsibility for the relatively short life expectancy especially among males shifted onto people as if it were self-inflicted by alcohol. Heavy drinking is a criminogenic factor; but again, the alcohol-related crime tends to be exaggerated by the media. In this way the organized crime and corruption are obfuscated. Furthermore, alcohol is often mentioned by the literature in the context of family violence and child abuse. Without denying the problem, it should be commented that it is easier to denounce a socially unprotected offender, in particular, if he or she suffers a substance use disorder. Otherwise, various tools are applied to prevent a disclosure: denial of facts, allegations of slander, threats and provocations, appeals to preserve honor of the

family or an ethnic/confessional community. About 99% of publications on child maltreatment were based on research conducted in more developed countries, around 83% in the United States (Mikton and Butchart 2009), while in less open societies the family violence is persisting without much attention. Authorities, teachers and neighbors in apartment buildings did not react to some known cases of child maltreatment. According to an estimate, the prevalence of family violence in RF during last decades has been 45-70 times higher than, for example, in the United Kingdom and France (Besschetnova 2015). In 2017 Vladimir Putin has signed into law an amendment that decriminalizes some forms of domestic violence (Spring 2018; Walker 2017). Apropos, physical abuse was described in his biographies [Baker and Glasser 2005; Ressler 2017; Ihanus 2022; Volkan and Javakhishvili 2022). It has been hypothesized that Putin is re-enacting his traumas in conditions of an intergenerational traumatic chain (Ihanus 2022; Elovitz 2022; Jargin 2023). Apparently, it was not so much the Russian population who perceived external threats at the beginning of the conflict, as it did their leader, re-enacting his puerile fears. There is a “danger of blundering into a nuclear war” (Elovitz 2022) thanks to that case of child maltreatment. Blaming others is one of the ways to defend self-esteem. Putin’s saying “If a fight is [perceived as] inevitable, you must strike first” may originate from reminiscences of bullying (Ihanus 2022). In regard to the ongoing demolition of the Ukrainian infrastructure, Putin may be in grip of the idea that “denazification” must be achieved through devastation; otherwise “the Phoenix could rise from the ashes” (Beisel 2022). Of note, defensive behaviors in certain individuals include attacking weaker persons and submitting to dominant ones (Lopes 2013). The latter seems to be reflected by Putin’s relationships with Ramzan Kadyrov, head of the Chechen Republic, who appears as a dominant personality. There has been a stereotype of “chechenophobia” in Russia (Khlebnikov 2003). The most important topic in this connection is the inter-ethnic difference in birth rate and migrations (Robertson and Jargin 2024), which is avoided by Russian media and officials today. In November 2022, Putin awarded the Soviet-era medal for “mother heroines” to Kadyrov’s wife, who has fourteen children. The North Caucasus receives considerable federal funding.

Discussion of the changing pattern of alcohol consumption in RF should be prefaced by an overview of social transformations since the 1980s; that is, the disintegration and changing ethnic composition of the social classes with the highest alcohol consumption in urban areas: workers and intelligentsia. The workers were predominantly of Slavic background; their incomes were comparable with those of intelligentsia and civil servants. Although many workers were skeptical about Soviet ideology, they were influenced by the propaganda and confident of their future. Leisure drinking of non-marginalized citizens is obviously favored by confidence,

carelessness and mutual trust. The alcohol consumption in the former SU increased more than twice from 1950 to 1970 (Transchel 2006), which agrees with our observations. This carefree way of life has disappeared after the economic reforms in the 1990s. Many factories and scientific institutions were closed down, which resulted in unemployment. Crime against alcoholics increased: appropriation of mobile and immobile property, assault and battery, abuse of social vulnerability by employers. Obviously, such atmosphere does not predispose to leisure drinking. Moreover, progressive ethnic transformation of the working class, with replacement of ethnic Russians and Ukrainians by immigrants from the regions, where alcohol consumption is less widespread (The Caucasus and Middle Asia), has contributed to the decrease in drunkenness.

Quality and toxicity of alcoholic beverages

The alcohol consumption in Russia is often associated with vodka. However, fortified wines (FWs) with alcohol concentration 16-20 % were popular in the former SU till the AAC started in 1985. After the 1972 governmental decree “On the measures to strengthen the fight against drunkenness and alcoholism”, the sales of vodka in the time span 7 p.m.-11 a.m. and on Sundays were prohibited. At the same time, wines were sold after 7 p.m. till the closure of shops at 8-10 p.m. and on Sundays. Wine was available mainly in 0.75-0.8 l and vodka in 0.5 l bottles. The absence of smaller bottles contributed to consumption of higher doses. The least expensive FWs were named bormotukha - the “mumbler”: intoxicated individuals mumbled indeed, having lost control of their speech and behavior. It was caused by ingredients other than ethanol masked by the taste of wine or, increasingly since the 1980s, of artificial flavors. Many workers finished their shifts around 5 p.m.; considering queues at retail outlets, they could start with vodka but continued with FWs or consumed the latter only. FWs were used for heavy binge drinking (~1.5 l pro person); they were often better tolerated than vodka, which at higher doses sometimes provoked vomiting e.g. when the second 250 ml glass was ingested in a hurry, without food and accompanying drink such as beer or Pepsi. For many older consumers wine or beer is preferable to vodka, as the latter can irritate atrophic mucosa.

Especially in the period between the two anti-alcohol campaigns (1972-1985), the part taken by FWs was considerable, being comparable with that of vodka. Wines were not always available in remote areas of North and Siberia but the shipments were welcomed. The increase in wine production before AAC (launched 1985) occurred in accordance with the policy aimed at a gradual replacement of vodka by wine and beer (Bailey 2018). The quality of beverages was supervised by authorities. Nonetheless, substandard wines were produced and there was a worsening tendency. In the period 1980-1985, the quality decline was acknowledged in

professional literature. However, the production continued growing; more details and references are in (Jargin 2017a,b).

Vodka prices doubled in 1985, but inexpensive wines were still available for several years, although their quality worsened and there were queues at retail outlets. The great popularity of FWs in the former SU is not readily perceptible from the literature. Apparently, there are two reasons thereof. First, some cheapest FWs were more toxic than vodka per unit of ethanol. It is easier to add insufficiently purified alcohol to red or brownish fluids with various tastes and flavors than to the rather standard product such as vodka. Second, more expensive FWs were manufactured from grapes or fruit by fermentation with addition of spirit distilled from grain or potatoes; some products being acceptable quality. The prime cost of natural FWs was higher than that of vodka, but they were sold at low prices. Parties with female participation often preferred dessert (alcohol concentration 14-16 %) or sparkling wines, which were inexpensive and often good quality. Their production in a technically correct manner turned out to be expensive after the transition to market economy. High-yield low quality sorts of grapes were increasingly used for wine production. Hygienic requirements were often neglected; there was no regular microbiological control. Some yeast cultures used for the fermentation were not sufficiently pure. Temperature regimes of fermentation were not always adhered to. Acidity of some wines was excessive. The quality of sparkling wines was noticed to be worsening: “Soviet Champagne” often smelled yeast. In the author’s opinion, the quality decrease in the early 1980s was tolerated by authorities taciturnly planning to replace inexpensive natural wines by flavored imitations. Some new products have been given popular names, for example, Portwein 72, which used to be acceptable quality. The notorious Portwein 777 appeared in the 1980s being poor quality from the beginning (Fig. 2). The latter drink is often mentioned by the media as “bormotukha” apparently aimed at a blanket discredit of inexpensive natural FWs destined to disappear from the market. The number 777 is meaningless; but earlier numbered varieties (Portwein 13, 33, 72) had been developed by winemakers and were recognizable. As for the fruit wines, after the onset of the AAC their production was planned to be abandoned, which indeed happened according to our observations. Today, natural fruit FWs are manufactured in Belarus.



Fig. 2. Port wine 72 was cheap fortified wine of acceptable quality during the Soviet time. It has disappeared; and the popular name is used for flavored sweetish solutions of poor-quality alcohol. Port wine 777 appeared later in the 1980s and has been poor quality from the beginning. The AAC launched 1985 by Mikhail Gorbachev was initially effective, but ended with a failure and was accompanied by increased consumption of home-made moonshine (samogon), technical liquids and colognes (Nemtsov 2009). After 1988, alcohol consumption increased, while vodka enhanced its share in the total (Ryan 1995; WHO 2018). Apparently, AAC and its predictable failure were exploited for political and economical purposes. AAC destabilized the Soviet society; widespread drunkenness in the 1990s acted like anesthesia during a surgery: workers and intelligentsia did not protest against privatization of the state property because of their drunkenness.

During the AAC, many distilleries producing spirits from grain and potatoes were dismantled. At the same time, technical ethanol met no demand from the stagnating industry. Official permissions to use alcohol from non-edible raw materials for production of beverages were issued during the 1990s (Nemtsov 2009). Some permissions have later been revoked but, in conditions of disregard for laws and regulations, the use of technical ethanol has been continued. It is known from practice and animal experiments that alcohol produced by synthesis from acetylene or by hydrolysis and fermentation from sawdust/woodchips is more toxic than that from edible sources (Nuzhnyi 1995; Luzhnikov et al. 2009). The latter method was widely used in RF having large resources of wood. Later on, purified ethanol from non-edible sources was claimed to be compatible with requirements to beverage alcohol (Nemtsov 2009). However,

purification costs money; and one can never be sure that it was adequate. Bioassays may overestimate toxicity of alcohol produced from edible sources as animals are not adapted to it. Thousands years' adaptation of Europeans and some other peoples to alcohol included adaptation to by-products of natural fermentation. Alcohol from non-edible raw materials has another spectrum of admixtures: higher concentrations of butanol, butanone, crotonaldehyde, acetone, diethyl ether, acetaldehyde etc. (Savchuk et al. 2016). Adaptation to some new by-products is lacking. This topic needs further research. Claims that the quantity but not quality of alcohol is important for health (Nemtsov 2009) deflects public attention from toxicity of some legally sold beverages.

After 1989, together with inflation and transition to the market economy, the prices and quality levels of beverages diversified. New labels appeared and disappeared; names and properties correlated poorly. Imported products had sometimes been good in the beginning but later were replaced by imitations. Well-known wines and spirits disappeared, changed their taste or were replaced by surrogates made from technical ethanol with flavor and color additives (Govorin and Sakharov 2012; Nemtsov 2009; Shaidullina 2014; Urumbaeva 2008). The astringent taste of technical alcohol is known as it was purloined from factories and scientific institutes, being often consumed during AAC. The relative proportion of counterfeit beverages on sale is difficult to determine; apparently, it is higher outside Moscow than in the Capital. The literature rightly discusses "the sale of illegal alcohol by legal retail outlets" (Bailey 2018). The following data have been published: in the late 1990s ~60% of legally sold alcoholic beverages contained insufficiently purified ethanol produced by synthesis from acetylene or by hydrolysis of sawdust with subsequent fermentation (Govorin and Sakharov 2012). In 2007 about a half of all vodka originated from illegal sources; wine and cognac being often falsified as well (Nemtsov 2009). A tendency of the quality improvement has been noticed since approximately 2010. Reportedly, 27% of all alcoholic beverages were counterfeit in 2021 (Utkin 2024). After all, in the third year of the Ukraine war, some beverages smell technical alcohol as before.

The concept of unrecorded alcohol is not directly applicable to Russia without a comment that ethanol from non-edible sources has been used for production of beverages sold through legal shops (Bailey 2018; Nuzhnyi 1995; Nuzhnyi et al. 1998; Urumbaeva 2008), thus being formally recorded. Exaggeration by some writers of "unrecorded" alcohol consumption is shifting responsibility for poisonings onto consumers, who allegedly prefer surrogates (Razvodovsky 2013). In fact, most vodka and liquor consumed by the populace is purchased through legally functioning retail stores and supermarkets (Khaltourina and Korotayev 2015). Apart from parochial sales of samogon (moonshine) mainly in rural areas, there have been some clandestine

retail sales of unrecorded alcohol, but, according to our observations, their share in the nationwide sales is insignificant. The Internet trade has been typically for bulk orders only (Neufeld et al. 2017). Without opening the bottle, consumers are usually unable to distinguish between branded and falsified vodka as it is sold at the same shops and looks identical. In the 1990s, slanting labels and lax closures were known as attributes of falsified vodka. Today, bottles with counterfeit beverages are “in good accordance with the original products” (Neufeld et al. 2017).

Following abolition of the state alcohol monopoly in 1992, the country was flooded by drinks of poor quality, sold through shops and kiosks (Urumbaeva 2008). For example, in Karelia, the incidence of lethal alcohol poisonings increased 3 times while the average blood alcohol concentration in such cases increased 1.4 times in 1992 (Nemtsov 2009). Simultaneously, the mortality from acute alcohol poisonings in the Arkhangelsk province increased by 234.6% (Shelygin et al. 2010). For the whole RF, the mortality rate from alcoholic poisonings increased from 1998 to 2004 by 58 % (Davydov et al. 2007). According to an estimate, the number of fatal poisonings with alcohol and surrogates in 1996 was 87.5 times higher in RF than in the United States (Tomilin et al. 1999). Among regions of RF, the highest mortality rates of alcohol poisonings in the period 2001-2010 were registered in Siberia (Sabaev and Goleva 2012), where vodka had been of low quality since decades. The following absolute figures of lethal poisonings with alcohol-containing fluids were reported: 1998 - 21,800, 1999 - 24,100, 2000 - 27,200 (Pelipas and Miroshnichenko 2011). Among causes of death and autopsy findings in such cases were intravascular coagulation, acute tubular necrosis with renal failure, pancreonecrosis, bleeding erosions and ulcers of stomach and esophagus (Bogomolov et al. 2006). Unrecorded figures were certainly higher as many cases, unclear for lack of toxicological tests or other reasons, were diagnosed post mortem with cardio- and cerebro-vascular diseases (Jargin 2017c). Some legally sold beverages caused severe poisonings. It is acknowledged in the professional literature that vodka was manufactured from technical liquids and then sold through legally operating shops (Novikova et al. 1997; Solodun et al. 2008), generally with the knowledge of authorities. Numerous lethal intoxications after the intake of moderate doses were reported, while the blood alcohol concentration was relatively low (Davydov et al. 2007; Govorin and Sakharov 2012; Nemtsov 2009; Novikova et al. 1997; Nuzhnyi et al. 1998).

In 2006, a mass poisoning with jaundice in different regions of RF was supposedly caused by disinfectant Extrasept-1, which contained, apart from ethanol, 0.08-0.15% of diethyl phthalate and 0.1-0.14 % polyhexamethylene guanidine hydrochloride (PHMG) (Bonitenko 2013). The number of poisonings in the period August-November 2006 was 12,611 cases, among them 1189

lethal ones (Luzhnikov 2014; Ostapenko et al. 2011); factual figures must have been higher. Histologically, “cholestatic hepatitis with a severe inflammatory component” was described (Ostapenko et al. 2011). Of note, PHMG is not particularly hepatotoxic; it is used worldwide for disinfection of swimming pools. The clinical picture with predominance of liver injury did not correspond to the toxicity profile of PGMG (Ivashkin and Buyeverov 2007). Reportedly, the mean lethal dose of Extrasept-1 in animal experiments is not much lower than that of purified ethanol (9.7 vs. 12.3 mg/kg); the concentrations are not given (Kuchina 2008). LD₅₀ of PHMG, administered orally, has been around 450 mg/kg for mice and 630 mg/kg for rats (Lachenmeier et al. 2012), while the animals died with signs of injury to the nervous system (Asiedu-Gyekye et al. 2014, 2015; Kondrashov, 1992; Tsisanova & Salomatin, 2010). Lung lesions due to PHMG used in household humidifiers have been reported (Kim et al. 2016). Experimentally, the substance showed lower toxicity when given via routes other than inhalation (Song et al. 2022). The data on the 2006 mass poisoning have been cited in professional literature and could have influenced conclusions. If the information on the poisonings in Russia was incorrect, it can be misleading for toxicity assessments of PHMG and the related substance polyhexamethylene biguanide (PHMB). The difference between LD₅₀ estimates in rats for PHMG and PHMB by the same researchers in two consecutive studies was striking: 600 vs. 25.6 mg/kg (Asiedu-Gyekye et al. 2014, 2015). Note that general toxicity of both substances is comparable with LD₅₀ values 500-600 mg/kg in rats when administered orally (Kim et al. 2016). The question is whether the figure 25.6 mg/kg (Asiedu-Gyekye et al. 2015) could have resulted from added precaution due to information on the mass poisoning in Russia (Ostapenko et al. 2011) cited by Asiedu-Gyekye et al. (2015). Recent papers on PHMB toxicity have also referred to the poisonings in RF, whereas the role of PHMG as a causative factor was not questioned (Choi et al. 2022; Song et al. 2022). The latter experimental study revealed no hepatotoxicity (Song et al. 2022). Further objective research is needed. As for diethyl phthalate, its acute toxicity to mammals is low (Autian 1973; Wams 1987). Some phthalates can induce liver injury but it has not been confirmed when tested in primates (NCEH 2005).

Apart from PHMG, “chloride compounds” have been discussed as possible causative factors (Khaltourina and Korotayev 2016). There is a hypothesis that carbon tetrachloride, dichloroethane or other organochlorides used in dry cleaning of clothes caused the poisonings (Nuzhnyi 2021; Nuzhnyi et al. 2010). In some individuals, supposed to have died after drinking Extrasept-1, carbon tetrachloride was found in tissues post mortem (Kuchina 2008). In many patients the onset severe poisoning was related to the consumption of vodka purchased in a shop (Ivashkin and Buyeverov 2007). As discussed above, technical liquids were used for production

of vodka, added to beer and wine. This has been veiled by certain writers creating impression that consumers deliberately bought surrogates for drinking: “This outbreak was caused by the consumption of antiseptics with chloride compounds due to the deficit of other non-beverage alcohol” (Khaltourina and Korotayev 2016). This was also the standpoint of the Health Ministry (2006). In fact, there was not the “deficit of other non-beverage alcohol” but a temporary deficit of vodka in 2006 caused by the elevation of excise duties (Pelipas and Miroshnichenko 2011). The shortage was compensated by surrogates sold in vodka bottles (Luzhnikov 2014).

Furthermore, 74 lethal cases were reported from Irkutsk in 2016. According to published information, the poisoning was caused by the bath lotion Boyaryshnik (Hawthorn) containing 93% (or up to 93%) of ethyl alcohol (RT News, 2016; Zobnin 2017). The author has found no reliable information on Hawthorn bath lotion containing 93% of ethanol. Inscriptions on labels may be misleading and contradicting to organoleptic properties. Note that concentrated solutions are usually more expensive per unit of the solved substance. It has been suspected that the cause of the poisonings was the medicinal hawthorn (*Crataegus*) tincture containing 70% of ethanol. The tincture is the pharmacy product most frequently consumed by drinkers in Russia (Monakhova et al. 2011; Gil et al. 2009). Such tinctures are relatively expensive these days; some consumers buy them because they hope for a higher quality of alcohol than vodka from the shop. The misinformation was probably intended to disguise the fact that methanol was used as a cheap substitute for medicinal ethanol.

Overtreatment of supposed alcoholics

Among others, the following treatments were applied to patients diagnosed with alcohol use disorder: prolonged intravenous infusions, sorbent hemoperfusion, endolymphatic and endobronchial drug delivery, pyrotherapy with sulfozine (oil solution of sulphur), endoscopic and surgical biopsies of internal organs, endoscopic cholangiopancreatography and angiography sometimes without clear indications also for research; more details and references are in (Jargin 2024a,b). Intravenous infusions were recommended for patients with alcoholism including moderately severe withdrawal syndrome: 7-10 infusions daily, sometimes combined with intramuscular injections (Entin 1990; Gavrilenko 1989; Ivanets and Vinnikova 2011; Galankin et al. 2003; Health Ministry 1998; Krut’ko 1990; Makhov et al. 1996; Nikitin 1990; Shabanov 2015). The intravenous detoxification was regarded to be “indicated to nearly all alcohol-dependent patients, especially to those with prolonged withdrawal syndrome” (Entin 1990), also in the absence of (severe) intoxication (Livanov et al. 2000). Some methods were patented e.g. infusion therapy and transcerebral electrophoresis of magnesium as a treatment of alcohol withdrawal syndrome (Chitalov and Zhukova 2008; Galankin et al. 2003; Panin 2000; Sosin et

al. 1987). According to the Cochrane review, there is no sufficient evidence to decide whether or not magnesium is useful for the therapy of alcohol withdrawal syndrome (Sarai et al. 2013). Excessive intravenous supply of magnesium can cause adverse effects. Fatal intravenous overdoses of magnesium in alcohol consumers were recorded (Vissers and Pursell 1996). Besides, various intramuscular injections were recommended: magnesium sulphate, sodium bromide and thiosulphate, subcutaneous infusions of saline and insufflations of oxygen (300-500 ml); Unithiol, Dimercaprol, cranio-cerebral hypothermia (1-1.5 hours); extracorporeal ultraviolet irradiation of blood, sorbent hemo- and lymphoperfusion etc. (Gavrilenko 1989; Garbusenko et al. 2013; Health Ministry 1987; Livanov et al. 2000; Nikitin 1990; Styagov and Timoshok 1991; Syropiatov et al. 2000).

The recommended duration of the intravenous detoxification was 3-15 days (Filatov et al. 1976; Livanov et al. 2000; Perelman et al. 1983), or even 21-30 days (Entin 1990; Health Ministry 1987) according to some instructions; a more recent publication recommended 2-3 days (Abdullaev and Utkin 2018). This is generally at variance with the international practice. Alcohol and its metabolites are eliminated spontaneously while rehydration can be usually achieved per os. Long-lasting drip infusions are uncomfortable; some patients regarded them as torture. Apparently, ideation of punishment coupled with irresponsibility has played a role in some personnel. It is known that the attitude to persons supposed to have an alcohol use disorder has been less responsible with lower procedural quality assurance than for other patients (Jargin 2024b). Repeated infusions, endovascular and endoscopic manipulations may lead to a transmission of viral hepatitis, which is unfavorable especially if combined with alcohol-related liver damage.

Furthermore, antipsychotic drugs (phenothiazines, haloperidol and others) have been applied in adults and adolescents diagnosed with alcohol dependence in the absence of psychosis (Ivanets et al. 2016; Ivanets and Vinnikova 2011; Lichko and Bitenskii 1991; Mendelevich and Zalmunin 2015). At the same time, alcohol craving has been interpreted as an “altered state of consciousness”, as a paranoid or delusional phenomenon (Brun et al. 2020; Zobin 2013) within the scope of “productive psychopathology” (Ivanets et al. 2016). Accordingly, the anti-psychotic medication has been recommended by most authoritative handbooks (Ivanets and Vinnikova 2011; Ivanets et al. 2016). Apart from other potential side effects, the synergism between some antipsychotics and alcohol, potentially aggravating liver injury, should be taken into account (Weller and Preskorn 1984). With regard to alcohol-related dementia (and other dementia in alcohol consumers), the antipsychotic use compared with non-use was associated with increased risks of stroke, venous thromboembolism, myocardial infarction, heart failure, fracture,

pneumonia and acute kidney injury (Mok et al. 2024). Unfounded psychopathological interpretations of alcohol consumption and overextended diagnostic criteria of alcoholism, used in Russia, have been pointed out (Zobin 2013).

The “ultra-rapid” (one session) psychotherapy of alcoholism, popular in the former Soviet Union and known as coding (Dovzhenko et al. 1988; Lipgart et al. 1991; Torban et al. 2011), should be briefly commented. This method was started during AAC; it was criticized as incompatible with medical ethics because of mystification, verbal intimidation, spraying of the throat with ethyl chloride, massage of trigeminal nerve branches, forceful backwards movements of the patient’s head etc. (Voskresenskii 1990). The latter may be dangerous for patients with vertebral abnormalities. Nevertheless, it continues to be used.

Among patients with supposed alcohol-related disorders, biopsies were taken from kidneys, pancreas, liver, lung, salivary glands, stomach and skin, repeatedly in some cases (Lebedev et al. 1984; Serov and Lebedev 1988; Makhov et al. 1996). Intraoperative lung biopsies were taken at surgeries for suppurative lung diseases (Lebedev 1985). For example, it was concluded on the basis of a series of studies based on renal biopsies that a generalized cytoskeleton abnormality with accumulation of filaments of intermediate type in macrophages, epithelial and other cells is typical for the damage by ethanol or the “alcoholic disease” (Lebedev et al. 1984; Serov and Lebedev 1985, 1988). It is known that Mallory bodies, seen in alcoholic hepatitis and some other liver conditions, contain filaments of intermediate type; however, generalizations as per Lebedev and Serov (cited above) have never been confirmed by other researchers. In any case, the cytoskeleton can be studied in experiments or post mortem. Another example: renal biopsies were collected from patients with chronic alcoholism and nephritic symptoms, whereas “intracapillary proliferative glomerulonephritis” was diagnosed in all cases. In a later study by the same researchers, the histopathological findings in 40 from 43 patients with alcoholism and nephritic symptoms were classified as membranoproliferative (mesangiocapillary) glomerulonephritis; while in 29 from 31 patients with nephritic symptoms without alcoholism “fibroplastic” glomerulonephritis was diagnosed (Tarasova and Beloborodova 1998, 2003). The striking difference between the two groups is indicative of the data trimming. Other invasive procedures (celiacography, endoscopic cholangiopancreatography etc.) were applied in alcoholics without clear indications (Makhov et al. 1996).

Alcoholism and tuberculosis

According to official instructions and textbooks, indications for surgery are broader in alcohol-dependent than in other patients with tuberculosis (Health Ministry 1987; Pavlunin et al. 2017).

In case of alcoholism, the surgical treatment was recommended to be implemented earlier, after a

shorter period of medical therapy (Pilipchuk et al. 1974). The Chief phthisiologist of the Health Ministry (until 2010) Mikhail Perelman insisted on early surgery in patients with alcohol dependence, and operated them also in the absence of demonstrable *M. Tuberculosis*. At the same time, Perelman et al. (1983) noticed that alcoholics have more frequent post-surgery complications. Epshtein and Palei (1989) recommended reducing the pre-operative therapy of alcoholics to 1.5-2 months; they also recorded complications in 67 from 178 operated patients with Tbc and alcoholism (88). Ogirenko et al. (1989) designated the indications for surgery in destructive Tbc combined with alcoholism as “urgent”, mentioning at the same time potentially grave consequences of thoracic surgery in such patients. One study reported that 53.2% of *M. tuberculosis* excretors with concomitant chronic alcoholism underwent surgery (Nikolaev et al. 1992).

Bronchoscopy was applied in cases with bronchitis (Entin 1990), the latter being frequent among alcoholics in Russia due to smoking and the risk to sleep down at a cold place. Along with other complications, vocal cord injuries were observed after repeated bronchoscopies sometimes performed in conditions of insufficient procedural quality. It was noticed that vomiting triggered by apomorphine as aversive therapy of alcohol dependence provoked hemoptysis and pneumothorax in patients with tuberculosis (Entin 1990; Rudoï and Chubakov 1985). Certain anti-tuberculosis drugs (cycloserine, rifampicin and other) exacerbated liver and neural derangements in alcoholism (Rudoï and Chubakov 1985). Nevertheless, rifampicin was officially recommended for patients with comorbidity of tuberculosis and alcohol use disorder (Health Ministry 1987).

Compulsory hospitalization and treatment

According to the governmental Regulation No. 378 of June 16, 2006, patients with contagious Tb are not permitted to reside in one apartment with other people. The outpatient treatment is supposed to be hardly applicable (Bogadel’nikova et al. 2000). As per the Federal Law 77- FZ “Prevention of tuberculosis spread” of June 18, 2001 (amended 2013), “patients with contagious tuberculosis, repeatedly violating the anti-epidemic regime, and those evading examinations *or* (emphasis added) therapy, are hospitalized for obligatory examination and treatment.” It is specified by the same law that the principle of informed consent is not applicable under these circumstances, and that the patients must undergo prescribed examination and therapy. The non-observance of this law may lead to a criminal procedure. The police are obliged to help at hospitalizations and to search evading individuals. It was reported that about 60% patients of a “phthisio-narcological” institution for compulsory treatment broke out; over 50% of them were returned by the police (Rudoï et al. 1994). The duration of stay in such institutions was a year or

longer (Entin 1990). The phthisio-narcological institutions were fenced by barbed wire and guarded by the police. The regime was like in prison. The personnel were entitled to punish patients. As mentioned above, parenteral drug delivery routes were preferred (Kulaev and Semeiskii 1990).

In 1974, chronic alcoholism was officially declared to be a ground for enforced treatment; the regulations were made stricter in 1985, making compulsory hospitalization and therapy of chronic alcoholics independent on their anti-social behavior. This practice was found in the 1990s to be contradictory to human rights. Nonetheless, some writers recommended restoration and further expansion of the compulsory treatment system (Bogorodskaja et al. 2009). According to a survey, 62.6% of experts in addiction medicine (“narcologists”) supported compulsory treatment of alcoholism (Mendelevich 2016). Enforced therapy of socially dangerous alcoholics is stipulated by Articles 97 and 98 of the Criminal Code of RF; besides, there is a legal mechanism enabling compulsory treatment of prison inmates diagnosed with alcohol use disorders (Maslennikova 2023). The implementation of compulsory examinations and treatments is increasingly efficient these days, which can be seen by the example of tuberculosis. Reportedly, 100% of *M. Tuberculosis* excretors in the Moscow region had been hospitalized since 2019 (Smerdin et al. 2022).

Compulsory treatments are generally at variance with the international practice and regulations. According to The World Medical Association, neither the statutory exceptions to the principle of informed consent nor the conditions of required care allow legally binding measures against patients refusing a treatment or hospitalization (Bouvet and Gueut 2013). It should be stressed in this connection that the treatment must be provided on the basis of informed consent. If this is absent, as in the case of incapacity (unconsciousness, mental confusion) due to alcohol, drugs, or illness, then the doctor proceeds on the basis of the patient’s best interests or implied consent (Franjic 2018). However, the presence of alcohol use disorder per se has no effect on a person’s right to refuse treatment. The consent for invasive procedures is of particular importance in conditions where an overtreatment may occur. The overuse of surgery in tuberculosis has been discussed by Jargin (2024b).

Discussion

People with alcohol use disorder are convenient subjects for interventions and experiments without clinical indications, favored by the autocratic management style, insufficient consideration of professional autonomy and informed consent, partial isolation from the international scientific community. The isolation is conducive to parallelism in research with repetition of studies on a lower qualitative level, unnecessary experimentation, and application of

invasive procedures without sufficient indications. Under conditions of paternalism, misinformation of patients and compulsory treatments are deemed permissible (Mikirtichan et al. 2022). The mentioning of informed consent started in papers from Russia not long ago, for example, in a bronchoscopic study of pediatric asthma, where consent of parents was sufficient (Fedorov et al. 2005). Of note, the principle of informed consent or assent is applicable to some extent also to adolescents and children. It has been recommended in the recent monograph titled “Pulmonary tuberculoma” to “explain to the patients in popular form that surgery is necessary” (Polyansky et al. 2021) instead of objective depiction of pros and cons. There is a widely accepted opinion that potential instability of tuberculoma does not generally justify thoracic surgery and that asymptomatic patients with an unchanging solid focus do not require surgery; details and references are in (Jargin 2024b). Justifications of surgical hyper-radicalism could be heard in private conversations among medics, for example: “The hopelessly ill are dangerous” i.e. may commit reckless acts undesirable by the state. For example, glioblastoma patients were routinely operated on, while it was believed by some staff that the treatment was generally useless, just forcing many patients to spend the rest of their lives in bed. The training of medical personnel under the imperative of readiness for war has been another motive. Some invasive methods with questionable indications were advocated by first generation military surgeons. The Soviet period brought about an expansion of admission numbers to universities and medical educational institutions, sometimes with little regard for the academic preparation (Isakov 1980; Jargin 2024c). At the same time, medical faculties were separated from universities; and medical science was partly separated from the mainstream scientific thought (Burger et al. 2004). The ethical and legal basis of medical practice and research has not been sufficiently known and observed in Russia. The term “deontology” is often used for medical ethics in this country. Textbooks and monographs on deontology explained the matter somewhat vaguely, with truisms and generalities but not much practical guidance. Among others, the following has been discussed previously: the overuse of gastrectomy for peptic ulcers, of thoracic surgery in tuberculosis, bronchial asthma and other respiratory diseases, spleno-renal anastomosis for diabetes mellitus. Endocervical ectopies (named pseudo-erosions in Russia) have been routinely cauterized without cytological tests; Pap smears for early detection of cervical cancer have been infrequent and below the international standards, cervical cancer being diagnosed relatively late. Millions of women in the former Soviet Union underwent Halsted and Patey mastectomy with removal of pectoral muscles without evidence-based indications, often without informed consent details and references are in (Jargin 2024b). Considering shortcomings of medical practice, research and education, governmental directives and increase in funding are unlikely to be

sufficient for a solution. Measures for improvement of the healthcare in Russia must include participation of authorized foreign advisors.

During AAC, launched by Mikhail Gorbachev in 1985 and ended by 1989, the consumption of non-beverage alcohol was widespread. Large-scale sales of cheap lotions and window cleaner in some areas were tolerated by authorities. The drinking of alcohol-containing technical liquids and perfumery decreased abruptly after AAC, when vodka and beer have become easily available and relatively cheap. The alcohol consumption predictably increased after AAC. It facilitated economical reforms of the early 1990s. As mentioned above, employees did not oppose privatization of the state property by administration and party functionaries due to mass drunkenness.

High quality beverages can be found in renowned shops like the “Gastronome No. 1” within the famous GUM (Upper Trading Rows) in Moscow (Fig. 3). Elsewhere, a product with the same foreign or domestic label may taste differently. The quality of counterfeit beverages depends on their origin: they can be produced by regular factories, being concealed from excise duties, or “in garages”, using technical ethanol diverted from the industry or imported (Nemtsov 2009; Urumbaeva 2008). Since the 1990s, the Caucasus has been known as a nationwide source of cheap alcoholic drinks. Almost all vodka concealed from excise duties in North Ossetia was reported to be produced from technical ethanol (Shaidullina 2014). According to another source, in the early post-Soviet years, North Ossetia produced ~40% of vodka consumed in RF, most of it coming from illegal sources (Bailey 2018). Paradoxically, unrecorded alcohol (manufactured by a regular factory and concealed from excise duty) can be good quality but “recorded” vodka can be made from sawdust being insufficiently purified, as it has been the case in some places e.g. in Siberia since decades. The same pertains to wines fortified with alcohol of different quality.



Fig. 3. “Gastronome No. 1” within the famous GUM (Upper Trading Rows). The wine collection here is one of the best in Moscow.

The hypothesis that because of a higher alcohol concentration, in combination with a lack of labeling, unrecorded alcohol may involve greater intake of ethanol per occasion (Lachenmeier et al. 2021) is unrealistic for lack of pleasant taste and traditional aura predisposing to prolonged partying. Besides, non-beverage alcohol would more readily provoke vomiting. Not many people would knowingly drink such surrogates today, when vodka and beer are available in supermarkets. The average salary (pension) / minimal vodka price ratio is higher today than it

had been prior to the AAC. The drinking of technical liquids and lotions has decreased abruptly after AAC thanks to the “sudden availability of cheap alcohol” (Keenan et al. 2015).

In regard to future research, poor quality technical ethanol containing toxic admixtures is of particular importance as it may be more toxic than ethanol from edible sources. Toxicity and quality control of alcoholic beverages is a perspective topic of the future research. In particular, the following methods should be applied more widely by supervising authorities: the gas chromatography with flame ionization detection (GC-FID), using a column separating admixtures, gas chromatography - mass spectrometry (GC-MS) and other modern methods (Bigão et al. 2024; Wiśniewska et al. 2015; Wunder et al. 2021).

Conclusion

It should be stressed in conclusion that the government must care about weaker members of the society, including those suffering of substance use disorders and alcohol-related dementia, because they can be abused and expropriated by criminals. Authorities should investigate the cases, when alcohol-dependent, disabled and other people were deprived of their apartments or houses as a result of criminal acts, having become homeless, and help them to obtain accommodation or shelter. Alcohol consumption and heavy binge drinking tend to decline in Russia (GISAH 2021; Sabaev and Pasechnik 2024); but alcohol still remains a part of life; and it can be eliminated only together with life. The last AAC (1985-1989) has demonstrated this. Figuratively speaking, the AAC was a surgery performed without sufficient indications (Jargin 2024b). In regard to future research, poor quality alcohol containing toxic admixtures is of particular importance. Addition of alcohol from non-edible sources to beverages should be prohibited or, at least, its presence must be clearly indicated on labels. Of note, the military and medical ethics are not the same. The comparatively short life expectancy in Russia is a strategic advantage as it necessitates less healthcare investments and pensions. Apparently, this was one of the motives of the unethical attitude to persons supposed to have alcohol use disorder, discussed in this chapter.

References

- Abdullaev TYu, Utkin SI. 2018. Different approaches to infusion therapy in alcohol addicted patients. *Voprosy Narkologii - Journal of Addiction Problems* 8(168): 54-75.
- Asiedu-Gyekye IJ, Mahmood SA, Awortwe C, Nyarko AK. 2014. A preliminary safety evaluation of polyhexamethylene guanidine hydrochloride. *Int J Toxicol.* 33(6): 523-31.
- Asiedu-Gyekye IJ, Mahmood AS, Awortwe C, Nyarko AK. 2015. Toxicological assessment of polyhexamethylene biguanide for water treatment. *Interdiscip Toxicol.* 8: 193-202.

- Autian J. 1973. Toxicity and health threats of phthalate esters: review of the literature. *Environ Health Perspect.* 4: 3-26.
- Bailey AL. 2018. *Politics under the influence: vodka and public policy in Putin's Russia.* London: Cornell University Press.
- Beisel DR. 2022. Ihanus' fine synthesis on Putin and Ukraine. *Clio's Psyche* 28: 311-3.
- Besschetnova OV. 2015. *Problemy zhestokogo obrashheniia s detmi v sovremennoi rossiiskoi semie (Problems of child abuse in a contemporary Russian family).* Saratov University.
- Bigão VLCP, da Costa BRB, Gomes NC, et al. 2024. From inspection to analysis: A combined approach to identifying counterfeit whiskeys using HS-GC-FID and bottle integrity. *Forensic Sci Int.* 357: 111977.
- Bogadel'nikova IV, Sagalovich VI, Perelman MI. 2000. The efficacy of the ambulatory treatment of patients with newly detected pulmonary tuberculosis. *Probl Tuberk.* 5: 23-8.
- Bogomolov DV, Pavlov AL, Panchenko LF, Bukeshev MK. 2006. Pathology and clinical features of poisoning with alcohol surrogates. *Narkologiya* (3): 42-46.
- Bogorodskaya EM, Ol'khovatskii EM, Borisov SE. 2009. Legal aspects of compulsory hospitalization of incompliant patients with tuberculosis. *Probl Tuberk Bolezn Legk.* (4): 8-14.
- Bonitenko EYu. 2013. *Klinika, diagnostika, lechenie, sudebno-medicinskaia ekspertiza otravlenii alkogolem i ego surrogatami [Clinic, diagnostics, treatment, forensic medical examination of poisonings with alcohol and its surrogates].* St. Petersburg: ELBI.
- Bouvet R, Le Gueut M. 2013. Tuberculose et refus de soins: recours à la législation sur les menaces sanitaires graves. *Rev Mal Respir.* 30: 451-7.
- Brun EA, Mikhailov MA, Avtonomov DA. 2020. *Izmenennye sostoiانيا soznania, psihoaktivnye veshhestva i psihoaktivnye deistvia [Altered states of consciousness, psychoactive substances and psychoactive actions].* Moscow: New Terra.
- Burger EJ, Ziganshina L, Ziganshin AU. 2004. Academic medicine in Russia. *Croat Med J.* 45: 674-6.
- Chitalov VG, Zhukova NE. 2008. Method of alcoholic abstinence syndrome reduction. Patent of Russian Federation RU2327474C1. 2008 June 27.
- Choi YJ, Yang HS, Zhang Y, Lee W, Yun SH, Nam YA, et al. 2022. Intratracheal exposure to polyhexamethylene guanidine phosphate disrupts coordinate regulation of FXR-SHP-mediated cholesterol and bile acid homeostasis in mouse liver. *Ecotoxicol Environ Saf.* 247: 114213.

- Davydov MI, Zaridze DG, Lazarev AF, Maksimovich DM, Igitov VI, et al. 2007. Analysis of mortality in Russian population. *Vestn Ross Akad Med Nauk.* 7: 17-27.
- Dovzhenko AR, Artemchuk AF, Bolotova ZN, Vorob'eva TM, Manuilenko IuA. 1988. Outpatient stress psychotherapy of patients with alcoholism. *Zh Nevropatol Psikhiatr Im S S Korsakova* 88: 94-97.
- Elovitz PH. 2022. Mother Russia's Savior, Traumatic Reenactment, and the Atrocities of War. *Clio's Psyche* 28: 320-5.
- Entin GM. 1990. *Lechenie alkogolizma [Treatment of alcoholism]*. Moscow: Meditsina.
- Epshtein TV, Palei ME. 1989. Opyt hirurgicheskogo lechenia bolnyh tuberkulezom legkih i hronicheskim alkogolizmom [Experience in surgical treatment of patients with pulmonary tuberculosis and chronic alcoholism]. In: Perelman MI, editor. *Organoshhadjashhie operativnye vmeshatelstva vo ftziopulmonologii [Organ-Preserving Operations in Phthisiopulmonology]*. Moscow: Scientific Center for Phthisio-Pulmonology, pp. 48-52.
- Fedorov IA, Wilson SJ, Davies DE, Holgate ST. 2005. Epithelial stress and structural remodelling in childhood asthma. *Thorax* 60: 389-94.
- Filatov AT, Tabachnikov SI. 1976. *Prinuditelnoe lechenie pri alkogolizme [Compulsory treatment for alcoholism]*. Kiev: Zdorov'ia.
- Franjic S. 2018. Psychiatry practice today. *Clinical Research in Psychology* 1: 1-6.
- Galankin LN, Livanov GA, Guzikov BM, Volkov NIu. 2003. Method for determining treatment tactics in the cases of alcohol abstinence syndrome. Patent of Russian Federation RU2202946C2. 2003 April 27.
- Garbusenko ON, Babashev BB, Salahanov RA. 2013. Ultraviolet irradiation of blood in therapy of acute alcohol abstinence syndrome. *Efferent Therapy* 19(1): 98-99.
- Gavrilenko VS. 1989. *Kompleksnoe lechenie bolnyh tuberkulezom legkih, stradaiushhih alkogolizmom [Combined treatment of patients with pulmonary tuberculosis suffering of alcoholism]*. Methodical Recommendations Moscow: Health Ministry of RSFSR.
- Gil A, Polikina O, Koroleva N, McKee M, Tomkins S, Leon DA. 2009. Availability and characteristics of nonbeverage alcohols sold in 17 Russian cities in 2007. *Alcohol Clin Exp Res.* 33: 79-85.
- GISAH 2021. Global Information System on Alcohol and Health.
<https://apps.who.int/gho/data/node.gisah.A1039?lang=en&showonly=GISAH>

- Govorin NV, Sakharov AV. 2012. Alkogolnaya smertnost' [Alcohol-related mortality]. Tomsk: Ivan Fedorov.
- Health Ministry of Russian Federation. 1998. Standarty (modeli protokolov) diagnostiki i lecheniya narkologicheskikh bol'nykh [Standards (protocol models) for diagnostics and treatment of narcological patients]. Annex to the Order of the No. 140; updated 28 April 1998. Available from: <http://docs.cntd.ru/document/1200119087>
- Health Ministry of Russian Federation. 2006. Information Letter No. 5847-PX of 02 Nov. 2006. Klinicheskiye proyavleniya, diagnostika i lecheniye otravleniy spirtosoderzhashchey zhidkost'yu, oslozhnivsheysya toksicheskim porazheniyem pecheni. [Clinical manifestations, diagnosis and treatment of poisoning with alcohol-containing liquid, complicated by toxic liver damage].
- Health Ministry of Ukrainian SSR. 1987. Osobennosti vyshavleniya, diagnostiki, klinicheskogo techenia, lechenia i profilaktiki tuberkuleza u bolnyh hronicheskim alkogolizmom (Special features of detection, diagnosis, clinical course, treatment and prevention of tuberculosis in patients with chronic alcoholism). Methodical Recommendations.
- Ihanus J. 2022. Putin: Ukraine, and fratricide. *Clio's Psyche* 28: 300-11.
- Isakov IuF. 1980. Medical Institutes In: Large Medical Encyclopedia. Moscow: Soviet Encyclopedia; 14: 421-7.
- Ivanets NN, Vinnikova MA. 2011. Alcoholism. Moscow: MIA. (in Russian)
- Ivanets NN, Anokhina IP, Vinnikova MA. 2016. Narcology: national manual. Moscow: Geotar-Media. (in Russian)
- Ivashkin VT, Buyeverov AO. 2007. The toxic hepatitis caused by alcohol substitutes poisoning. *Russian Journal of Gastroenterology, Hepatology, Coloproctology* 17(1): 4-8.
- Jargin SV. 2011. Some aspects of psychiatry in Russia. *Int J Cult Ment Health* 4: 116-20.
- Jargin SV. 2017a. Alcohol and alcoholism in Russia: Policies and their effects. *Archives Medical Review Journal* 26: 207-22.
- Jargin SV. 2017b. Popular alcoholic beverages in Russia with special reference to quality and toxicity. *J Addiction Prevention* 5(2): 6.
- Jargin SV. 2017c. Cardiovascular mortality in Russia: a comment. *Cardiovasc Diagn Ther.* 7: 13-14.
- Jargin SV. 2018. Alcohol-related poisonings in Russia: Obfuscated facts. *J Addict Ther Res.* 2: 001-5. doi: 10.29328/journal.jatr.1001005

- Jargin SV. 2020a. *Misconduct in medical research and practice*. New York: Nova Science Publishers.
- Jargin SV. 2020b. Pohmelnyi sindrom: dopolnenie k obzoru (Hangover syndrome: addition to the review). *Ukrainian Medical Journal*, 21 December 2020.
<https://www.researchgate.net/publication/350036558>
- Jargin SV (2023) *The Conflict in Ukraine: Psychopathology and Social Aspects*. New York: Nova Science Publishers.
- Jargin SV. 2024a. Alcohol and alcoholism in Russia: An update. *J Addiction Prevention* 12(1): 1.
- Jargin SV. 2024b. *Selected Aspects of Healthcare in Russia*. Newcastle upon Tyne: Cambridge Scholars Publishing.
- Jargin SV. 2024c. Medical education and postgraduate training in Russia: an update. *J Integrative Med Ther.* 7(1): 1.
- 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.
- Khaltourina D, Korotayev A. 2015. Effects of specific alcohol control policy measures on alcohol-related mortality in Russia from 1998 to 2013. *Alcohol Alcohol.* 50(5): 588-601.
- Khaltourina D, Korotayev A. 2016. Alcohol control policies and alcohol-related mortality in Russia: Reply to Razvodovsky and Nemtsov. *Alcohol Alcohol.* 51(5): 628-9.
- Khlebnikov P (2003) *Razgovor s varvarom [Conversation with a barbarian]*. Moscow: Detective-Press.
- Kim AS, Johnston SC. 2011. Global variation in the relative burden of stroke and ischemic heart disease. *Circulation* 124(3): 314-23.
- Kim HR, Hwang GW, Naganuma A, Chung KH. 2016. Adverse health effects of humidifier disinfectants in Korea: lung toxicity of polyhexamethylene guanidine phosphate. *J Toxicol Sci.* 41(6): 711-17.
- Kondrashov SA. 1992. A hygienic evaluation of the new flocculant polyhexamethyleneguanidine. *Gig Sanit.* (3): 11-3.
- Krut'ko VS. 1990. Pneumonia in patients with pulmonary tuberculosis and alcoholism. *Probl Tuberk.* (1): 64-66.

- Kuchina EV. 2008. Sudebno-meditsinskaya diagnostika otravleniy nekotorymi surrogatami alkogolya [Forensic medical diagnosis of poisoning with certain alcohol substitutes]. Dissertation. Moscow: Russian Center of Forensic.
- Kulaev SR, Semeiskii AI. 1990. Organizacia prinuditelnogo rezhima i rezultaty lechenia vzroslyh bolnyh tuberkulezom organov dyhanie, stradaiushhih hronicheskim alkogolizmom, v usloviakh ohranaemogo otdelenia [Organization of forced regime and results of treatment of adult patients with respiratory tuberculosis suffering from chronic alcoholism in a guarded department]. Alma-Ata: Kazakhstan Research Institute of Tuberculosis. Available at the Central Medical Library in Moscow.
- Lachenmeier DW, Monakhova YB, Samokhvalov AV, Rehm J. 2012. Causality between polyhexamethyleneguanidine occurrence in unrecorded alcohol and cholestatic hepatitis outbreak in Russia. *Clin Toxicol (Phila)*. 50(2): 154-5.
- Lachenmeier DW, Neufeld M, Rehm J. 2021. The impact of unrecorded alcohol use on health: what do we know in 2020? *J Stud Alcohol Drugs* 82(1): 28-41.
- Lebedev SP. 1985. Klinicheskaia morfologia alkogolnoi bolezni [Clinical morphology of alcoholic disease]. Dissertation. Moscow: Sechenov Medical Academy.
- Lebedev SP, Vinogradova LG, Sukhova GK. 1984. Alcoholic hyaline and interstitial filaments as markers of alcoholic damage of internal organs. *Arkh Patol*. 46(11): 52-58.
- Leon DA, Chenet L, Shkolnikov VM, Zakharov S, Shapiro J, et al. 1997. Huge variation in Russian mortality rates 1984-94: artefact, alcohol, or what? *Lancet* 350: 383-8.
- Leon DA, Shkolnikov VM, McKee M. 2009. Alcohol and Russian mortality: a continuing crisis. *Addiction* 104(10): 1630-6.
- Lichko AE, Bitenskii VS. 1991. Podrostkovaia narkologia [Adolescent narcology]. Leningrad: Meditsina.
- Lipgart NK, Goloburda AV, Ivanov VV. 1991. Once more about A.R. Dobzhenko's method of stress psychotherapy in alcoholism. *Zh Nevropatol Psikiatr Im S S Korsakova* 91: 133-4.
- Livanov GA, Sofronov AG, Kalmanson ML, Tikhomirov S. 2000. Standarty narkologicheskoi pomoshchi [Standards for narcological treatment]. St. Petersburg: Mechnikov North-Western Medical University.
- Lopes BC (2013) Differences between victims of bullying and nonvictims on levels of paranoid ideation and persecutory symptoms, the presence of aggressive traits, the display of social

- anxiety and the recall of childhood abuse experiences in a Portuguese mixed clinical sample. *Clin Psychol Psychother* 20: 254-66.
- Luzhnikov EA. 2014. *Meditinskaya toksikologiya* [Medical toxicology]. Moscow: Geotar-Media.
- Luzhnikov EA, Ostapenko YuN, Sukhodolova GN. 2009. *Pervaya neotlozhnaya pomoshch' pri ostryh otravleniyah* [First emergency care for acute poisonings]. Moscow: Binom.
- Makhov VM, Abdullin RG, Gitel' EL, Zavodnov VIa, Podzolkov VI, Sozinova TIu, et al. 1996. Visceral lesions in alcoholism. *Ter Arkh.* 68(8): 53-56.
- Maslennikova EA. 2023. *Osobennost ispolneniia lisheniia svobody osuzhdennymi, bolnymi alkogolizmom* [Peculiarities of execution of imprisonment by convicts with alcoholism]. Ryazan: IP Konyakhin.
- McKee M. 1999. Alcohol in Russia. *Alcohol Alcohol.* 34(6): 824-9.
- Mendelevich VD 2016. *Etika sovremennoi narkologii* [Ethics of modern narcology]. Moscow: Gorodets.
- Mendelevich VD, Zalmunin KY. 2015. Paradoxes of evidence in Russian addiction medicine. *Int J Risk Saf Med.* 27 Suppl 1: S102-3.
- Mikirtichan GL, Kaurova TV, Pestereva EV. 2022. *Vvedenie v bioetiku* [Introduction to bioethics]. St. Petersburg: Pediatric Medical University.
- Mikton C, Butchart A. 2009. Child maltreatment prevention: a systematic review of reviews. *Bull World Health Organ.* 87: 353-61.
- Mok PLH, Carr MJ, Guthrie B, Morales DR, Sheikh A, Elliott RA, et al. 2024. Multiple adverse outcomes associated with antipsychotic use in people with dementia: population based matched cohort study. *BMJ* 385: e076268.
- Monakhova YB, Kuballa T, Leitz J, Lachenmeier DW. 2011. Determination of diethyl phthalate and polyhexamethylene guanidine in surrogate alcohol from Russia. *Int J Anal Chem.* 2011: 704795.
- NCEH 2005. National Center for Environmental Health. *Third National Report on Human Exposure to Environmental Chemicals.* NCEH Pub. No. 05-0570.
- Nemtsov AV. 2009. *Alkogolnaya istoriya Rossii: noveishii period* [Alcoholic history of Russia: contemporary period]. Moscow: urss.ru.

- Neufeld M, Rehm J. 2013. Alcohol consumption and mortality in Russia since 2000: are there any changes following the alcohol policy changes starting in 2006? *Alcohol Alcohol*. 48(2): 222-30.
- 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? *F1000Res*. 6: 520.
- Nikitin IuP. 1990. *Profilaktika i lechenie alkogolizma [Prevention and treatment of alcoholism]*. Kiev: Zdorov'ia.
- Nikolaev VP, Baisheva NN, Luginova LD. 1992. Outpatient observation and treatment of patients with tuberculosis and massive bacterial excretion aggravated by negative social factors. *Probl Tuberk*. (9-10): 16-19.
- Novikova MG, Koshkina EA, Nuzhny V P. 1997. Dynamics of poisonings by spirits and alcoholic substitutes in Velikye Luki town for the period from 1989 to 1994. *Toksikologicheskiy Vestnik (Toxicological Review)* (1): 11-17.
- Nuzhnyi VP. 1995. Toksikologicheskaya harakteristika etilovogo spirta, alkogolnyh napitkov i sodержashchihsya v nih primesei [Toxicological characteristic of ethyl alcohol, alcoholic beverages and of admixtures to them]. *Voprosy Narkologii* (3): 65-74.
- Nuzhnyi VP. 2021. *Populiarnaia alkologia [Popular alcology]*. Moscow: SIMK.
- Nuzhnyi VP, Kharchenko VI, Akopian AS. 1998. Alcohol abuse in Russia is an essential risk factor of cardiovascular diseases development and high population mortality (review). *Ter Arkh*. 70(10): 57-64.
- 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]*. Moscow: urss.ru.
- Ogirenko AP, Sinenko VIa, Marchuk AD, Gleim GK, Denisov AN, Nikonov SD. 1989. Organizacia rannego hirurgicheskogo lechenia nerezhimnyh bolnyh s destruktivnym tuberkulezom legkih [Organization of early surgical treatment of non-regime patients with destructive pulmonary tuberculosis]. In: Perelman MI, editor. *Organoshhadjashhie operativnye vmeshatelstva vo ftizipulmonologii [Organ Preserving Operations in Phthisio-pulmonology]*. Moscow: Scientific Center for Phthisio-Pulmonology, pp. 46-48.

- Ostapenko YN, Brusin KM, Zobnin YV, Shchupak AY, Vishnevetskiy MK, Sentsov VG, et al. 2011. Acute cholestatic liver injury caused by polyhexamethyleneguanidine hydrochloride admixed to ethyl alcohol. *Clin Toxicol (Phila)*. 49(6): 471-7.
- Panin LE. 2000. Method of treatment of patients with chronic alcoholism. Patent of Russian Federation RU2145216C1. 2000 February 10.
- Pavlunin AV, Shprykov AS, Mishanov RF. 2017. Ftiziatriia [Phthisiology]. Nizhny Novgorod Medical Academy.
- Pelipas VE, Miroshnichenko LD. 2011. Problemy alkogolnoi politiki [Problems of the alcohol policy]. In: Ivanets NN, Vinnikova MA, editors. *Alcoholism*. Moscow: MIA; pp. 817-51.
- Perelman MI, Safarov RN, Epshtein TV, Gorelik ES, Palei ME. 1983. Hirurgicheskoe lechenie bolnyh tuberkulezom legkih i hronicheskim alkogolizmom [Surgical treatment of patients with pulmonary tuberculosis and chronic alcoholism] In: Priimak AA, editor. *Sovremennye metody hirurgicheskogo lechenia tuberkuleza legkih [Modern methods of surgical treatment of pulmonary tuberculosis]*. Collected works. Moscow: Institute of Tuberculosis, pp. 65-67.
- Pilipchuk NS, Kharchenko EF, Ivaniuta OM. 1974. Tuberkulemy legkih, plevry i sredostenia (Tuberculoma of the lungs, pleura and mediastinum). Kiev: Zdorov'ia.
- Polyansky VK, Beznosik RV, Savitsky GG. 2021. Tuberkulema legkih: monografiya (Pulmonary tuberculoma: monography). Pushkino: Kantsler.
- Razvodovsky YE. 2013. Consumption of noncommercial alcohol among alcohol-dependent patients. *Psychiatry J*. 2013: 691050.
- Razvodovsky YE. 2014. Fraction of stroke mortality attributable to alcohol consumption in Russia. *Adicciones* 26(2): 126-33.
- Razvodovsky YE. 2015. The effect of beverage type on alcoholic psychoses rate in Russia. *Alcohol Alcohol*. 50: 200-5.
- Razvodovsky YE. 2017a. Fatal alcohol poisonings and poisonings by other toxic substances in Russia. *J Addict Res Ther*. *J Addict Res Ther*. 8: 344. doi: 10.4172/2155-6105.1000344
- Razvodovsky YE. 2017b. Affordability of alcohol and alcohol-related outcomes in Russia. *J Addict Ther Res*. 1: 22-25.
- Razvodovsky YE 2017c. The effects of alcohol taxation and pricing policies on unrecorded alcohol consumption in Russia. *J Alcohol Drug Depend*. 5: 294.

- Razvodovsky YE. 2020. Hangover syndrom: patogenic mehanisms and approaches to the treatment. *Narkologija* (7): 49-55.
- Ressler N (2017) Putin according to Freud: hidden and obvious. Moscow: Algorithm. (Russian)
- Robertson S, Jargin S. 2024. Selected medical, social and ecological aspects of overpopulation. SSRN eJournal; doi: 10.2139/ssrn.4999312.
- RT News. 2016. 48 people die after drinking bath lotion with antifreeze in Siberia. 19 Dec 2016. <https://www.rt.com/news/370706-methanol-lotion-poisoning-siberia>
- Rudoj NM, Chubakov TC. 1985. Tuberkulez legkih i alkogolizm [Pulmonary tuberculosis and alcoholism]. Moscow: Meditsina.
- Rudoj NM, Dzhokhadze VA, Chubakov TCh, Stadnikova AV 1994. Current status and perspectives in hospital treatment of patients with tuberculosis complicated with alcohol abuse. *Probl Tuberk.* (4): 8-10.
- Ryan M. 1995. Alcoholism and rising mortality in the Russian Federation. *BMJ* 310: 646-8.
- Sabaev AV, Goleva OP. 2012. The dynamics of population mortality due to acute alcoholic intoxications in the Russian Federation. *Probl Sotsialnoi Gig Zdravookhranennii Istor Med.* (4): 21-23.
- Sabaev AV, Pasechnik OA. 2024. The analysis of dynamics of indicator of mortality of population of the Siberian Federal Okrug resulted from toxic impact of alcohol in 2011-2020. *Probl Sotsialnoi Gig Zdravookhranennii Istor Med.* 2024; 32(2):203-7.
- Sarai M, Tejani AM, Chan AH, Kuo IF, Li J. 2013. Magnesium for alcohol withdrawal. *Cochrane Database Syst Rev.* (6): CD008358.
- Savchuk SA, Nuzhnyi VP, Rozhanets VV. 2016. Himia i toksikologija jetilovogo spirta i napitkov, izgotovlennyh na ego osnove [Chemistry and toxicology of ethyl alcohol and beverages on its basis: chromatographic analysis of alcoholic beverages]. Moscow: urss.ru.
- Serov VV, Lebedev SP. 1985. Clinical morphology of alcoholism. *Arkh Patol.* 47(8): 3-14.
- Serov VV, Lebedev SP. 1988. Clinical morphology of visceral alcoholism. *Vestn Akad Med Nauk SSSR* (3): 48-53.
- Shabanov PD. 2015. *Narkologia [Narcology]*. 2nd edition. Moscow: Geotar-Media.
- Shaidullina ED. 2014. Ugolovnaia otvetstvennost za nezakonnye proizvodstvo i oborot alkogolnoi produktsii [Criminal responsibility for illegal manufacturing and trade with alcoholic products]. Kazan: Juridical Institute.

- Shelygin KV, Samburskaya EV, Kozlova TV. 2010. Alcohol poisonings in the European North of Russia: dynamics, structure, forecast. *Narkologiya* 1(97): 39-45.
- Smerdin SV, Untanova LS, Plekhanova MA 2022. Organizatsiya protivotuberkuleznoi pomoshhi v Moskovskoi oblasti [Organization of anti-tuberculosis care in the Moscow region: 2018-2022. Analytical review]. Moscow: Regional public organization of disabled Zdorovie Cheloveka (Human Health).
- Solodun IuV, Klevno VA, Leliukh TD, Maslauskaite LS, Iaverbaum AP, Ermolaeva NB, et al. 2008. Forensic-medical evaluation of toxic hepatitis associated with surrogate alcohol poisoning. *Sud Med Ekspert.* 51(4): 23-28.
- Song J, Jung KJ, Yang MJ, Kim W, Lee BS, Choe SK, et al. 2022. Disruption of membrane integrity as a molecular initiating event determines the toxicity of polyhexamethylene guanidine phosphate depending on the routes of exposure. *Int J Mol Sci.* 23(6): 3289.
- Sosin IK, Sema VI, Gurevich YL, Mysko GN, Slabunov OS, Palamarchuk VM, et al. 1987. Method of stopping alcohol abstinence syndrome. Patent of Soviet Union SU1299590A1. 1987 March 30.
- Spring M. 2018. Decriminalisation of domestic violence in Russia leads to fall in reported cases. *The Guardian*; 16 August 2018.
- Styagov GI, Timoshok AI. 1991. Medikamentozye i nemedikamentozye metody lechenia bolnyh alkogolizmom v LTP [Medical and non-medical treatment methods of alcoholic patients in LTP (labor-and-treatment prophylactoriums)]. In: Aktualnye voprosy i polozhitelnyi opyt organizatsii psikiatricheskoi i narkologicheskoi pomoshhi v ITU i LTP [Current issues and positive experience in organizing psychiatric and drug addiction care in correctional institutions and LTPs] Selected articles. Domodedovo: Ministry of Internal Affairs of the Russian Federation, pp. 54-62.
- Syropiatov OG, Dzeruzhynskaia NA. 2000. Patogenez i biologicheskoe lechenie alkogolizma [Pathogenesis and biological therapy of alcoholism]. Kiev: Military Medical Academy.
- Tarasova NS, Beloborodova EI. 1998. Immunological aspects of circulating immune complexes in kidney diseases in patients with chronic alcoholism. *Ter Arkh.* 70(12): 61-63.
- Tarasova NS, Beloborodova EI. 2003. Hormonal and immunological aspects of renal lesions in patients with chronic alcoholism. *Ter Arkh.* 75(11): 73-76.
- Tomilin VV, Salomatin EM, Nazarov GN, Shaev AI. 1999. Lethal poisoning with ethyl alcohol and its surrogates in various regions of the Russian Federation. *Sud Med Ekspert.* 42(6): 3-7.

- Torban M, Heimer R, Ilyuk RD, Krupitsky EM. 2011. Practices and attitudes of addiction treatment providers in the Russian Federation. *J Addict Res Ther.* 2: 104.
- Transchel K. 2006. *Under the influence. Working-class drinking, temperance, and cultural revolution in Russia, 1895-1932.* Pittsburgh, PA: University of Pittsburgh Press.
- Tsisanova ES, Salomatin EM. 2010. Forensic chemical investigation of alcohol-containing liquids contained polyhexamethylene guanidine hydrochloride and diethylphthalate. *Sud Med Ekspert.* 53(4): 33-37.
- Urumbaeva RN. 2008. Ocenka vliania razlichnyh faktorov na masshtaby nelegalnogo rynka alkogolia v Rossiiskoi Federacii [On influence of different factors on the scale of illegal market of alcohol in Russian Federation]. *Manufacture of Alcohol and Liqueur & Vodka Products.* (4): 4-6.
- Utkin SI. 2024. Rasstroistva vsledstvie upotrebleniya alkogolya [Disorders in consequence of alcohol consumption]. In: Ivanets NN, Vinnikova MA, editors. *Narcology. National manual.* Moscow: Geotar-Media, pp. 260-76.
- Vissers RJ, Pursell R. 1996. Iatrogenic magnesium overdose: two case reports. *J Emerg Med.* 14: 187-91.
- Volkan V, Javakhishvili JD (2022) Invasion of Ukraine: Observations on Leader-Followers Relationships. *Am J Psychoanal* 82: 189-209.
- Voskresenskii VA. 1990. Critical evaluation of ultra-rapid psychotherapy of alcoholism (concerning the article by A.R. Dovzhenko et al. "Ambulatory stress psychotherapy of alcoholics"). *Zh Nevropatol Psikhiatr Im S SKorsakova* 90: 130-2.
- Walker S. 2017. Putin approves legal change that decriminalises some domestic violence. *The Guardian*, February 7, 2017.
- Wams TJ. 1987. Diethylhexylphthalate as an environmental contaminant - a review. *Sci Total Environ.* 66: 1-16.
- Weller RA, Preskorn SH. 1984. Psychotropic drugs and alcohol: pharmacokinetic and pharmacodynamic interactions. *Psychosomatics* 25: 301-9.
- WHO. 2018. *Global Status Report on Alcohol and Health.* Geneva: World Health Organization.
- Wiśniewska P, Śliwińska M, Dymerski T, et al. 2015. Application of gas chromatography to analysis of spirit-based alcoholic beverages. *Crit Rev Anal Chem.* 45: 201-25.

Wunder C, Pogoda W, Paulke A, Toennes SW. 2021. Assay of ethanol and congener alcohols in serum and beverages by headspace gas chromatography/mass spectrometry. *MethodsX* 8: 101563.

Zobin ML. 2013. Problem drinking as an object of therapeutic intervention. *Zh Nevrol Psikhiatr Im S S Korsakova* 113(6 Pt 2): 14-19.

Zobnin YuV, Vygovsky EL, Degtyareva MA, Lyubimov BM, Malykh AF, Teterina IP, et al. 2017. Mass poisoning with methanol in Irkutsk in December, 2016. *Baikal Medical Journal* (3): 29-36.