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Research Article

Noncommercial Alcohol Drinking and Risk of Alcohol-Related Problems

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Abstract

In Belarus, the consumption of homemade spirits (samogon) and surrogate alcohol, also referred to as noncommercial alcohol, is somewhat common. It would be logical to assume that drinkers who consume samogon will differ in various aspects of drinking behavior from those who do not consume samogon. The aim of this study was to test this hypothesis. Using a structured interview, including questions regarding the prevalence of the use of alcohol surrogates, as well as the motives of its use, 329 men were surveyed in Grodno city. The findings from preset study showed that it was relatively common for urban men to drink samogon: 31.6% of men consume samogon at least once a month. The data presented suggest that the consumption of samogon is associated with a number of signs of problem drinking: a high overall level of alcohol consumption, binge drinking pattern, an inability to control the quantity of alcohol used, hangover syndrome, and consumption of counterfeit alcohol and alcohol surrogates. The Belarusian government should consider a number of potentially effective approaches to address the problem of noncommercial alcohol, including raising public awareness of the risks of surrogates drinking and creating an alternative to strong alcoholic drinks by preferences to low alcoholic beverages.

Keywords: Alcohol; Surrogates; Samogon; Alcohol-Related Problems; Male Urban Population; Belarus

Introduction

In Belarus, the consumption of homemade spirits (samogon) and surrogate alcohols (i.e., products that contain alcohol but are not intended for consumption), also referred to as non-commercial or unrecorded alcohol, is somewhat common [1]. Among the most common surrogates are industrial spirits, antiseptics, lighter fluid, and medications containing alcohol [2]. Unrecorded alcohol also includes alcohol produced by distilleries but sold without the payment of taxes and counterfeit beverages that are passed off as commercial brands. According to estimates, unrecorded alcohol accounts for one-quarter of all consumption in Belarus [3].

Samogon is the main source of noncommercial alcohol in Belarus, which is produced from sugar or grain both in homes and in remotely located mini-factories that sell to others [2]. In term of concentration, samogon has about of 40% ethanol, matching the alcohol content of licensed vodka. The use

of poorly rectified spirits for the production of state vodka during 1990s in Belarus resulted in a significant lowering its quality. Thus, the quality gap between samogon and licensed vodka was narrowed, contributing to popularity of samogon [2]. The pattern of samogon consumption as well as the pattern of vodka consumption is characterized by explosiveness, i.e. consumption of large amounts of alcohol on a single drinking session. The social context of the use of samogon is practically no different from the context of the use of licensed vodka [2].

There was concern that samogon contains higher level of hepatotoxic aliphatic alcohols congeners than commercial vodka because the home producers cannot reach the degree of rectification required for vodka production [1]. In particular, all samples of samogon in Izhevsk study contained detectable amounts of 1-propanol, isobutanol, and isoamyl alcohol, which have been shown in animal studies to cause

hepatic damage [4]. Higher level of aliphatic alcohols contributes to the strong and unpleasant odor and taste of samogon.

Against this background, it would be logical to assume that drinkers who consume samogon will differ in various aspects of drinking behavior from those who do not consume samogon. It can be also hypothesized that samogon consumption is associated with more alcohol-related problems than the consumption of licensed alcohol. The aim of this study was to test this hypothesis by studying the prevalence, patterns of consumption and reasons behind samogon consumption among male urban population in Belarus.

Materials and Methods

Participating in the study were 329 men ages 18 to 70 who live in the city of Grodno. It should be emphasized that Grodno is a typical city of Belarus, and therefore the data obtained can be extrapolated to the entire urban population of the republic. The trained interviewers carried out face-to-face interviews with the respondents, using a structured questionnaire of more than 30 questions covering the social characteristics of respondents, the level and structure of the consumption of licensed alcoholic beverages, the prevalence of the use of samogon and alcohol surrogates, the information about several alcohol-related behaviors, the opinion of the respondents on the quality of licensed alcohol and samogon, and the motives that guided them in the selection of alcoholic beverages. Information about licensed alcohol consumption was obtained by the quantity-frequency approach with a reference period of the previous month. The interview was conducted in the apartments of the respondents, which, to some degree, could be reflected in the sincerity of the answers because this method does not guarantee complete anonymity. The respondents were classified according to whether they consumed only state-produced alcohol or additionally samogon. The results of the survey were entered into a computer database after which it was subjected to statistical processing. Logistic regression was used to estimate the strength of association between samogon consumption and risk of alcohol-related problems, with all analyses done with SPSS.

Results

Description of the Sample

According to the results of the survey, samogon is consumed occasionally (at least once a month) by 31.6% of men. A differential analysis of the results of the survey of two groups of respondents (those who consume samogon and those who do not consume samogon) revealed significant differences for a whole number of indicators.

Selected sample characteristics are summarized in table 1.

The average age was 36.5 ± 10.2 years for men. The majority of men (63.9%) were married. The majority of men (70%) also had a secondary education, while 30% of men had a higher education. By social status the respondents were distributed as follows: white-collar workers (19.0%), blue-collar workers (49.6%), students (15.1%), retirees (10.5%), and unemployed (6.7%). Results show that compared with men who do not consume samogon, samogon consumers were more likely to be single (33.6% vs. 39.6%), unemployed (4.7% vs. 11.3%), and were more likely to have secondary education (68.3% vs. 74.0%).

Table 1. Selected sample characteristics (in percentages).

Sample characteristics	All respondents 329	Samogon consumers 104	Non samogon consumers 225
Age (years)	36.5±10.2	37.3±11.3	35.9±10.7
Marital status			
Single	36.1	39.6	33.6
Married	63.9	60.4	66.4
Education			
Secondary	70.0	74.0	68.3
High	30.0	26.0	31.7
Employment			
Unemployed	6.7	11.3	4.7
Manual professions	49.6	47.4	51.0
Nonmanual	19.0	27.9	27.6
Students	15.1	3.1	4.7
Retirees	10.5	8.2	11.7

Types of Alcohol Consumed and Patterns of Consumption

According to the results of this study, 6.6% of men abstain completely, while 28.7% of men consume alcohol several times a month and 63.4% of men consume alcohol several times a week. In this case, an insignificant portion of men (1.3%) consume alcohol every day (table 2). Men who consume samogon generally consume alcohol more often: 70.1% of samogon consumers and 50.7% of men who do not consume samogon use alcohol more than once a week.

The overall level of alcohol consumption per capita per year (in terms of absolute alcohol) was 13.5 liters. Furthermore, the overall level of alcohol consumption by samogon consumers was significantly higher than by men who do not consume samogon: 18.7 liters versus 10.0 liters.

According to the results of the survey, during one drinking occasion 42.0% of men consume 150 to 300 ml of vodka, 24.5% of men consume from 300 to 500 ml of vodka, and 3.1% of men consume more than 500 ml of vodka. The intoxication-oriented pattern of alcohol consumption is to a greater degree characteristic for samogon consumers because 77.7% of men who consume samogon and 66.2% of men who do not consume samogon consume more than 150 ml of vodka during one binge (Table 2).

Table 2. Self-reported consumption of alcohol and surrogates (in percentages).

Drinking variables	All respondents 329	Samogon consumers 225	Non samogon consumers 104
Abstainers	6.6	2.1	7.5
Frequency of drinking			
Several times a month	28.7	27.8	45.1
Several times a week	63.4	66.0	50.7
Every day	1.3	4.1	-
Binge drinking			
150 to 300 ml of vodka during one drinking occasion	42.0	42.5	42.3
300 to 500 ml of vodka during one drinking occasion	24.5	30.9	21.2
more than 500 ml of vodka during one drinking occasion	3.1	4.3	2.7
Alcohol-related problems			
Lost of quantitative control	17.5	32.3	11.0
Hangover syndrome	44.2	71.3	31.4
Consumption of surrogate alcohol	4.9	11.4	-

It turned out that men who consume samogon are more often diagnosed with symptoms that are characteristics for alcohol dependence. For example, 32.3% of samogon consumers versus 11.0% of men who do not consume samogon indicated an inability to control the amount of alcohol consumed. The presence of hangover syndrome was acknowledged by 71.3% samogon consumers versus 31.4% of men who do not consume samogon.

Representatives of these two groups also differ by criteria for preference in the selection of alcoholic beverages. Thus, for 21.3% of samogon consumers and 6.5% of respondents who do not consume samogon, the decisive factor in the selection of an alcoholic beverage is low cost, while 42.6% of samogon consumers and 73.6% of respondents who do not consume samogon are guided by the criterion of quality. Physical availability was quoted as main criteria for preference of alcoholic beverages by 22.3% of samogon consumers and by 14.9% of respondents who do not consume samogon.

According to results obtained during this survey, the main motives for the consumption of samogon by men are low cost (23.8%), physical availability (12.9%), the notion that samogon is a chemically pure product (35.6%), and tradition (27.7%).

Perceived Quality of Noncommercial Alcohol and Impact on Health

The majority of men believe (69.7%) that samogon is a chemically pure, "natural" product, and 30.3% of men believe that samogon is a chemically "dirty" product, hazardous to health. There are significant differences between representatives of different groups of respondents in their attitude to samogon. For example, 91.1% of samogon consumers believe that samogon is a chemically pure, natural product that surpasses state vodka in quality, while only 32.9% of respondents who do not consume samogon have a similar opinion. It is also noteworthy that 79.6% of samogon consumers versus 48.0% of non consumers supported the legalization of samogon production.

It also turned out that samogon consumers, in comparison with respondents who do not consume samogon, more often have friends who consume samogon: 89.3% versus 49.0%, as well as friends who manufacture samogon: 52.2% versus 18.0%. It should be noted that 11.4% of samogon consumers reported also using alcohol surrogates (mainly medications with a high percentage of ethanol and industrial spirits), while consumers of licensed alcohol denied using surrogates. In addition, 26.6% of samogon consumers indicated that they know those who consume alcohol surrogates versus 9.6% of respondents who do not consume samogon. Samogon consumers were also more likely than respondents who do not consume samogon to

have bought counterfeit alcohol: 32.6% versus 7.5%.

Perception of Policies on Noncommercial Alcohol

Of interest is the expected behavior of respondents with a change in the affordability of alcohol. According to the results of the survey, under conditions of a lack of funds 33.0% of samogon consumers and 45.5% of respondents who do not consume samogon will stop drinking alcohol, 36.2% of samogon consumers and 42.3% of respondents who do not consume samogon will drink expensive high-quality alcohol beverages but in smaller amounts, while 30.8% of samogon consumers and 12.2% of respondents who do not consume samogon will switch to cheaper alcoholic beverages. With an increase in the price for vodka, 44.0% of samogon consumers and 70.8% of respondents who do not consume samogon report they will start to drink less alcohol, 12.1% of samogon consumers and 4.8% of respondents who do not consume samogon will start to drink fortified wine with the average alcohol content 18.5%, 8.8% of samogon consumers and 20.2% of respondents who do not consume samogon will start to drink beer, 35.1% of samogon consumers and 4.2% of respondents who do not consume samogon will start to drink samogon.

Statistical analysis

Logistic regression suggests strong positive association between samogon drinking and drinking frequency of alcoholic beverages (OR = 2.4; CI: 1.5-4.0), drinking more than 150 ml of vodka during one binge (OR = 2.4; CI: 1.4-4.0), an inability to control the quantity of alcohol used (OR = 2.9; CI: 1.6-5.4), hangover syndrome (OR = 1.9; CI: 1.1-3.2), consumption of counterfeit alcohol (OR = 4.6; CI: 2.3-15.2) and alcohol surrogates (OR = 6.8; CI: 2.1-22.1).

Discussion

The findings from present study showed that it was relatively common for urban men to drink samogon. Furthermore, the data presented suggest that the consumption of samogon is strongly associated with a number of signs of problem drinking: a high overall level of alcohol consumption, frequent drinking, binge drinking pattern, an inability to control the quantity of alcohol used, hangover syndrome, and consumption of counterfeit alcohol and alcohol surrogates. These data replicate the findings of Izhevsk (Russia) study which indicated that among working-age males who reported surrogate use, the relative risk of dying from causes directly related to problem drinking (e.g. alcoholic psychosis, alcoholic cardiomyopathy, alcoholic liver cirrhosis and acute alcohol poisoning) was 25.5 in relation to those who consumed only legal alcoholic beverages [5]. In a more recent study [6] of working-age men in Izhevsk, non-beverage alcohol intake was strongly associated with measures of acute alcohol-related dysfunction (exces-

sive drunkenness and hangover) even after controlling for the other drinking variables. It was also suggested that home-produced spirits may account for a significant part of the high level of alcoholic psychoses morbidity in Russia (Razvodovsky, 2008). The reason that illegal alcohol may be having an impact in terms of morbidity and mortality is because of the strength and quality of much of this alcohol [4,6-9].

It is not clear to what extent the association between samogon consumption and the risk of alcohol-related problems reflects a direct causal role for samogon that is independent from the binge drinking of vodka that is a characteristic feature of drinking culture in Belarus. It might be the case, that samogon drinking is simply a correlate of heavy drinking, as for men who become impoverished because of heavy drinking samogon is more affordable than licensed vodka. There is some evidence for this suggestion, since 11.3% of samogon consumers were unemployed compared with 4.7% of those who did not drink samogon. Furthermore, many respondents cited their lower cost and greater availability as important reasons for drinking samogon. This is why the low-income groups of the population and heaviest drinkers in Belarus are likeliest to consume non-commercial alcohol, and this effect is intensified during periods of economic recession [1,2,10].

The findings from this study related to alcohol control policy options suggest that urban male population is sensitive to price changes of licensed alcohol. These outcomes provide additional evidence that decreasing in affordability of spirits (vodka) is an effective strategy for reducing alcohol-related harm. It should be noted, however, that one of the objections to pricing policy as a public health strategy is that dependent drinkers are likely to switch to noncommercial alcohol in the face of licensed alcohol price increase [11-13]. Indeed, the results from present survey suggest that the high price of legal alcohol would increase drinking of cheaper alternatives, including samogon.

In conclusion, this study identified drinking of samogon as a potential contributor to high rate of alcohol-related problems in Belarus. These findings emphasize the urgency of implementing comprehensive alcohol policy, which need to address total consumption, harmful drinking pattern and taking into account the consumption of alcohol from illicit sources. The major problem is that, the informal alcohol market is largely immune to regulation and effective policymaking [14]. Historically, government policies designed to raise prices and restrict availability of commercial alcohol beverages in the Russian Empire and later in the former Soviet Union have driven black market growth. Surrogates consumption increased markedly following the prohibition of vodka sales in July 1914 as Russia mobilized for war [15,16]. A similar rapid rise in consumption of illicitly produced alcohol and surrogates has occurred

during Gorbachev's anti-alcohol campaign in the mid-1980s [17]. Therefore, the Belarusian government should consider a number of potentially effective approaches to address the problem of noncommercial alcohol, including raising public awareness of the risks of surrogates drinking and creating an alternative to strong alcoholic drinks by preferences to low alcoholic beverages.

References

1. Razvodovsky YE. Noncommercial alcohol in central and eastern Europe, ICAP Review In: International Center for Alcohol Policies, ed. Noncommercial alcohol in three regions, Washington, DC: ICAP. 2008, 17–23.
2. Razvodovsky YE. Noncommercial Alcohol in Belarus. LAP LAMBERT Academic Publishing GmbH & Co. KB, Saarbrücken. 2012.
3. Razvodovsky YE. Unrecorded alcohol consumption: quantitative methods of estimation. *Alcoholism*. 2010, 46(1): 15-24.
4. McKee M, Suzcs S, Sarvay A, Adany R, Kiryanov N et al. The consumption of surrogate alcohols consumed in Russia. *Alcoholism: Clinical and Experimental Research* 2005, 29(10): 1884-1888.
5. Leon DA, Saburova L, Tomkins S, Andreev E, Kiryanov N et al. Hazardous alcohol drinking and premature mortality in Russia: a population based case-control study. *Lancet* 2007, 369(9578): 2001-2009.
6. Solodun YV, Klevno VA, Leliuch TD, Maslauskaitė LS, Javerbaum AP et al. Forensic medical evaluation of toxic hepatitis in poisoning by substitute alcoholic beverages. *Forensic medical evaluation*, 2008, 4:23-28.
7. Klevno VA, Kuchina EV. Clinical, laboratory and morphological manifestations of fatal and non-fatal poisonings by alcoholic beverage substitutes. *Forensic Medical Examination*. 2008, 5: 36-38.
8. Bobrova N, West R, Malutina D, Koshkina E, Terkulov R et al. Drinking alcohol surrogates among clients of an alcohol-misuser treatment clinic in Novosibirsk. *Substance Use & Misuse*. 2009, 44(13): 1821–1832.
9. Ostapenko YN, Elkis IS. Alcohol and Substitute Poisoning: Diagnosis and Emergency Medical Care in the Pre-Hospital Stage. *Therapeutic Archives*. 2010, 1: 18-24.
10. Razvodovsky YE. Unrecorded alcohol consumption among alcohol dependent patients. *Journal of Addiction Medicine and Therapeutic Science*. 2015, 1(1): 15-19.
11. Chaloupka FJ, Grossman M, Saffer H. The effects of price on alcohol consumption and alcohol-related problems. *Alcohol Research & Health* 2002, 26 (1): 22-34.
12. Wagenaar AC, Salois MJ, Komro KA. Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies. *Addiction*. 2009, 104(2): 179-190.
13. Purshouse RC, Meier PS, Brennan A, Taylor KB, Rafia R. Estimated effect of alcohol pricing policies on health and health economic outcomes in England: an epidemiological model. *Lancet*. 2010, 375(9723): 1354–1364.
14. Rehm J, Kanteres F, Lachenmeier DW. Unrecorded consumption, quality of alcohol and health consequences. *Drug and Alcohol Review* 2010, 29(4): 426–436.
15. Nemtsov AV, Razvodovsky YE. Alcohol situation in Russia, 1980-2005. *Social and Clinical Psychiatry* 2008, 2: 52-60.
16. Stickley A, Razvodovsky Y, McKee M. Alcohol mortality in Russia: A historical perspective. *Public Health*. 2009, 123(1): 20-26.
17. Razvodovsky YE. Consumption of noncommercial alcohol among alcohol dependent patients. *Psychiatry Journal*. 2013.