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Drinking Alcohol Surrogates Among Clients of an Alcohol-Misuser Treatment Clinic in Novosibirsk, Russia

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Abstract

A pilot study was conducted in the Russian city Novosibirsk during 2006–2007 with 40 participants sampled from clients admitted to health services for drinking-related problems to explore surrogates for alcoholic beverage drinking using semistructured interviews. Types of surrogates consumed and reasons for their consumption were investigated. Results revealed that the most prevalent reported surrogate used was industrial spirit. The main reasons for drinking surrogates were the high affordability and physical availability of surrogates combined with the need to relieve severe withdrawal symptoms. The study limitations are described, and suggestions for future research are made.

Keywords

alcohol; surrogate alcohol; drinking patterns; Russia; hazardous drinking

Introduction

The mortality crisis in Russia during the period of political, economic, and social transition has been repeatedly linked with high levels of alcohol intake. According to the World Health Organization, alcohol-based beverages was a prime risk factor for disability-adjusted life years lost in 2002 in Russia (The World Health Report, 2002). It has been estimated that around 40,000 people die every year from alcohol poisoning compared with just several hundreds in the United States (Nemtsov, 2001). A recently published case–control study suggested that as much as 43% of all deaths among young Russian men might be attributable to the consumption of drinking substances that are not intended to be drunk (or alcoholic beverage surrogates) and the prevalence of surrogate drinking among controls in this case–control study was 8% (Leon et al., 2007). Surrogates include substances such as industrial spirits, antifreeze, cologne, aftershave, lotions, and medicines with a high percentage of ethanol. Most of these substances have twice the concentration of alcohol as traditional vodka. One of the major concerns about these substances is that, besides having

high levels of ethanol, they could also contain toxic substances that could severely damage the liver and could be lethal.

Poisoning by alcoholic beverage surrogates has received much attention recently, when a wave of hospitalizations and deaths swept through 22 Russian regions. In just several months of 2006 (July–December), around 11,000 cases of alcohol poisoning due to such substances came to hospitals (Nemtsov, 2007). The government called this situation an unprecedented epidemic. One explanation for the epidemic of alcohol poisonings suggested by the media and government officials is the introduction of a number of new government policies governing licensing and labeling, designed to protect the quality of the legal alcohol-based products. The law, effective since July 2006, had several consequences. Alcohol sales declined as alcohol producers waited for new labels; cheap vodka disappeared from the shelves of the stores; and vodka prices increased substantially. All these changes could have contributed to the increased consumption of surrogates. However, there is an alternative interpretation, suggesting that the attention to the mass alcohol surrogate poisoning in the state media in 2006 was largely driven by the government's desire to monopolize the vodka market. It has been argued that the number of alcohol-related poisonings in 2005 was considerably higher than in 2006, and surrogate consumption was always a part of Russian drinking culture (Butaev, Zuzayev, Arslanov, and Plusnin, 2006). Whatever drew attention to the subject of surrogate alcohol, from a public health perspective one message remains important: surrogate drinking exists, and it causes substantial damage to human health and incurs costs to society.

There appears to have been only one previous study that looked at surrogate drinking in Russia (Tomkins et al., 2007), and although several epidemiological studies have examined alcohol consumption and, less often, some aspects of drinking patterns in Russia, few of them were designed to investigate in detail drinking behaviors, and especially hazardous drinking. There is almost no research on surrogate drinking patterns, types, reasons, and correlates. Understanding why people choose to drink such substances, and in which environments, is essential to address this worrisome trend in drinking behavior. The present study aims to shed light on a relatively new and unstudied area, to provide useful information that can be used for public health interventions and policy development, and to contribute to the field of alcohol consumption research in general. The study explores types of surrogates consumed, reasons behind surrogate consumption, and patterns of consumption in Novosibirsk.

Methods

Design and Study Setting

Given the lack of data on the issue of surrogate alcohol use and misuse, we used a qualitative method to explore this largely unstudied area in Novosibirsk. Novosibirsk is the third largest city in Russia (population about 1.5 million), after Moscow and Saint Petersburg, and the industrial and administrative centre of Siberia. In terms of demographic and socioeconomic indicators, Novosibirsk is a typical Russian city. The study was conducted in a state-run inpatient alcohol and drug user treatment facility in Novosibirsk. The study site was recommended by the head doctor of alcohol and drug user treatment services in Novosibirsk. The incidence of alcoholism and alcohol psychosis in Novosibirsk region in 2006 was 102.0 per 100,000 or 2,703 persons in absolute numbers (the number in Russian Federation was 135.1 per 100,000).

Subjects

Semistructured qualitative interviews were conducted with 40 participants of alcohol misuser treatment in-patient services in Novosibirsk between 2006 and 2007. All individuals in treatment at the time, with six consecutive visits, were approached by the first author of this article. The study aims were explained, and individuals were asked whether they would like to participate in the study. There were between 4 and 10 patients in the alcohol user treatment facility present at each visit. Three patients were admitted repeatedly to the service during the study time period, but were approached only once. One patient reported not feeling well and refused to participate in the study. All participants signed a consent form. No personal information was recorded during the study. The study was approved by UCL Ethics Committee and the Russian National Research Institute on Addictions.

Data Collection

All interviews were conducted by the first author in Russian. Interviews were conducted face to face in a private room, and lasted from 30 to 90 minutes. All interviews were tape recorded and transcribed verbatim. Participants' history of alcohol consumption, including surrogate consumption, drinking practices, patterns, and history of treatment were explored. A topic guide was used to ensure that themes of interest were covered across all interviews.

To understand the types of nonbeverage alcohol that exist and are consumed in Novosibirsk, we first interviewed alcohol-misuser treatment providers and researchers who work in the area of alcohol in Russia and conducted pilot interviews with consumers of surrogates. It was found in our pilot interviews that it is better to ask concrete questions about a particular nonbeverage alcohol as, for example, diluted industrial spirit is often not perceived as being a nonbeverage alcohol because it is sold for drinking. Moreover, the question "Have you ever consumed surrogates?" was interpreted variously by participants. Most persons understood surrogates as being poor-quality products that could be bought in legal outlets. When participants were asked whether they consumed surrogate alcohol, most answered, "What do you mean? Of course, now everything is surrogate: wine, mineral water, vodka." In the main study, therefore, we asked about specific substances that were cited most often in interviews and research literature, such as *Boyaryshnik* or spirit, but we also asked about "other substances which contain alcohol but which are not intended to be drunk." Therefore, our definition for surrogate alcohol matched the definition used in the review on surrogate alcohol by Lachenmeier, Rehm, and Gmel (2007), which includes both legally sold nonbeverage alcohols and illegally produced alcohols.

Analysis

The first and the third authors conducted analysis and coding of the interviews using the framework approach (Richie and Spenser, 1994). The topic guide was used to generate main themes such as "Types of surrogates consumed," which further were divided into subthemes. Two-level coding was done for 20 selected interviews to generate a coding frame for the whole sample. The quantitative data from the interviews (e.g., sex, education, employment, number of times in treatment) were entered into and analyzed in the SPSS statistical package (version 11).

Results

Description of the Sample

Sample characteristics are summarized in Table 1. The average age of participants was 39 (21–61), and the majority were male. Seven people reported having secondary education, 27 participants had vocational education, and 6 had a higher degree. Half of the sample was

unemployed at the time of interview. Only two respondents lived alone; the majority lived with their parents (usually mother) or their own family. Most participants were in treatment for detoxification and coding (aversion therapy widely used in Russia, often with the use of a placebo. See Fleming, Meyroyan, & Klimova, 1994) more than twice.

Types of Alcohol Consumed and Patterns of Consumption

All participants reported drinking vodka and diluted industrial spirit (“sultyga”) before coming to treatment, and about half also drank wine and beer. Most respondents would start drinking vodka but then buy diluted spirit from private providers when resources become limited, and switch again to vodka or fortified wine when money appeared.

Respondents also reported drinking other substances (besides industrial spirit) with high volume of ethanol that are not intended to be drunk. Those included medicinal tinctures with high volume of ethanol purchased in pharmacies (Boyaryshnik—70% ethanol, antiseptic—95% ethanol), bath tonics purchased in kiosks (Troyar, Troya—90% ethanol), and cologne purchased in newspaper kiosks (Trojnoj—60% ethanol). The majority of respondents would dilute substances by half with water. However, a few individuals drank Boyaryshnik tincture nondiluted, and two were diluting spirit with beer.

Thirteen participants reported drinking only vodka and other legal alcoholic beverages, and no surrogates during the last 12 months. This group also reported a shorter previous-drinking episode (2 weeks or less) and lower average dose consumed per day before coming to treatment (430 mL of ethanol vs. 800 mL among surrogate drinkers). More people in this group had nonmanual jobs and had a higher education level.

Most participants were drinking daily before coming to treatment. The last drinking episode or *zapoj* (binge drinking continually for 2 days and more) lasted 3 weeks or longer for the majority of participants, and over 3 months for half of those interviewed. The typical day during a *zapoj* episode was described as usually starting with a drink to relieve a severe hangover. Participants would drink first thing in the morning anything left from the evening or immediately go to purchase “the relief dose,” which averaged 200 mL (four shots or one glass) of spirits. After several hours, another dose would follow, and closer to the evening the last dose would be purchased and drunk. The daily average dose reported was 700 mL equivalent of spirits per day. In the majority of cases, respondents reported drinking alone at their homes watching TV or doing some home tasks. Several drank with friends, and two drank during working hours, “sip by sip,” which helped them “get along” while doing their job tasks. In some cases, reciprocal relationships between neighborhood drinkers were reported as well: “Today I have a bottle to share, tomorrow you will.” Most participants reported having not eaten any food while drinking due to a loss of appetite and/or inability to eat anything in the morning because of severe withdrawal.

So it goes for ten days. Every day, during 24 hours I drank a litre of vodka. Little by little. You sit and watch TV. You have a bottle of vodka and maybe some juice. At first you also have some snacks, but then you lose appetite and do not eat at all. So you would drink a bit of vodka, a bit of juice, watch TV, sleep, wake up and continue drinking again. (man, 55)

Perceived Reasons for Drinking Surrogates

The main reason reported for drinking surrogates was a combination of severe withdrawal symptoms and high accessibility (affordability and physical availability) of surrogates. The price of surrogate substances was one of the main attractions. Diluted spirit was 3 times cheaper than the cheapest vodka. And especially when no money was available, it was

reported to be much easier to “borrow” 2–3 rubles among friends or neighborhood heavy drinkers to purchase cheap spirit.¹ In some places, spirit could even be exchanged for goods.

The cheapest vodka now is around 70 roubles for 500 grams... or you pay 20 roubles for the same amount of spirit. Do you see the difference? And you do not think about your liver or kidneys, you feel so badly physically, you are in tremor and almost cannot move. All you think about is how to get better quicker. (man, 34)

Besides lower cost, the physical availability of spirit-selling locations was another important reason. Diluted or nondiluted spirit was sold from kiosks (under the counter) and private apartments and houses in every neighborhood illegally. Respondents knew on average seven places where they could purchase industrial spirit. The need to know so many places was explained by hours of opening, proximity to the participant's house/location, availability of spirit at the place (some places could be temporarily closed by the police or could run out of spirit), and quality of the spirit. Most places opened very early (6–8 a.m.) to meet the needs of those clients who have to “get a fix” first thing in the morning, and remained open until late (23:00). Some places were open 24 hours.

There is a place on the first floor and the other is on the ninth floor. Five minutes from my apartment. They even have a steel door with a special small window for spirit sale. So they do not need to open the door, they just open this small window... I wish there would not be such places. I left my lamp and radio there [as payment]. (woman, 52)

Perceived Quality of Surrogates and Impact on Health

The spirit sold from apartments and private houses was reported as having different qualities. The “bad” spirit would have a strong smell of rubber, oil, or acetone and could have a “milky” color. In comparison, good vodka, and a good spirit, would have no smell and could be drunk “smoothly.” The quality could differ between sellers but also in the same location depending on “supply” (e.g., where the spirit was coming from). It was also reported that in some places tobacco or dimedryl (sleeping medicine) was added to the spirit, which would “knock you down faster” and “got you more addicted to it.” That is why some respondents preferred not to use these sellers and rather bought undiluted spirit at a higher price, in order to be sure that nothing was added to it or that they were “not buying just water”:

They add some stuff to diluted spirit. You wake up in the morning and rush immediately to buy it again. They dilute it in such way so that most of it is water but they add pills to it and it hits your head, you become like a fool, no longer responsible for your actions. Become crazy. I even hit a man once after drinking it. (woman, 35)

There were distinctive perceptions of more severe withdrawal symptoms from drinking bad industrial spirit (compared with good vodka or substances bought at pharmacies). Such spirits were called “poisonous,” “harmful,” “disgusting to taste,” and described as a substance that negatively influences physical health and mood. The health consequences reported by the study participants included severe headaches, loss of sight, and numbness in the arms and legs. A few respondents mentioned that for them the availability of spirit contributed to the development of more severe alcohol dependence. Only one respondent attributed having a severe hangover to the quantity rather than quality of consumed alcohol.

¹For a price of 500 mL of diluted spirit (20–25 roubles) in Novosibirsk, one could buy 1.5 loafs of bread or 500 mL of milk.

You feel awful after drinking industrial spirit. Besides its terrible taste, the hangover is much worse, awful headache, depressed mood. Your legs become numb, it is difficult to move. (man, 56)

There is a very, very strong hangover after it. First of all, there is a very strong tremor, and I am not talking just about hands. It is inside, all your insides are shaking starting from the stomach and ending with upper parts. There is no such thing after drinking vodka or Boyaryshnik, which actually tastes nice (man, 38).

Despite its detrimental qualities, respondents would still buy industrial spirit on the pretext that one can also be easily poisoned by contaminated vodka bought in a decent shop. They would claim that such vodka also can be made of the same diluted industrial spirit. In fact, the quality of spirit was mostly discussed in comparison with the quality of vodka.

Perception of Policies on Surrogates

The first experiences of surrogate drinking were commonly reported during the Gorbachev antialcohol consumption campaign when the sale of legal alcohol was limited.² Apart from increasing the consumption of *samogon* (moonshine, homemade spirits), the purchase and consumption of cologne was also reported in this time period. According to the study participants, the availability of industrial spirits then increased rapidly during the period when the alcohol market was no longer a monopoly, that is, shortly after the collapse of the Soviet Union. Then spirit for internal consumption was sold legally from stores and kiosks. At the same time, however, quality control decreased substantially and large quantities of counterfeit cheap alcohol appeared on the market.

There was this perestroika period. Just after the dry law, when vineyards were destroyed and wine and vodka production decreased, lots of moonshine was produced, and sale of spirit began in all regions... I do not remember the name of the brand but quality was shit, and even the smell was terrible, [but] at the time so was the quality of vodka. (man, 36)

The increase in price of legal alcohol after recent policy changes, together with high accessibility of illegal industrial spirit (as described earlier), were the major reasons given for drinking surrogates during the current period. During the course of the study, the government introduced policies³ that, according to our participants, limited their access to particular nonbeverage alcohol and reduced its consumption. The most popular substances such as Trojnoj cologne and Boyaryshnik tincture disappeared from newspaper kiosks and pharmacies. However, according to the participants, it was still possible to buy it in some places under the counter. Between May 2006 and September 2007, we visited several sales places in order to purchase nonbeverage alcohol reported by the participants. Indeed, Trojnoj cologne was for sale in May 2006 but was already unavailable in September 2006. Similarly, Boyaryshnik disappeared from the pharmacies a bit later. Nevertheless, as reported by our participants, illegal sales sites of industrial spirit, which were often known to the police, remained untouched.

²The campaign was launched in 1985 and included among other measures reduction in vodka and wine production and sales, antialcohol propaganda aiming to eradicate public drunkenness and drinking in the workplace, and campaigns against home brewing and speculation in alcohol. The campaign was abolished in 1989 (White, 1996).

³Policy No. 32, 2.5.2006 of Novosibirsk Region Administration limited the products that could be sold in newspaper kiosks, specifically prohibiting the sale of Trojnoj cologne. And the Federal Service on Surveillance in Health Care and Social Development of Russian Federation (of Ministry of Health and Social Development) developed a policy (#2005-Pr06, 7.9.2006) according to which ethanol-containing substances in pharmacies should be sold in smaller containers: 25 mL instead of 100 mL, which made a purchase of such substances for consumption as alcohol beverage by heavy drinkers less cost-effective.

Vodka should not be banned [as in Gorbachev times because] it is understandable that people will drink surrogates [instead]. But surrogates [sales places] can be closed, especially because the police know where and what [is sold]. (man, 32)

Discussion

To our knowledge, this is the first in-depth investigation of the drinking of alcoholic beverage surrogates in Russia. Hazardous drinking is not unusual in this population, and it is exacerbated by drinking nonbeverage alcohol, especially industrial spirits. We found that there were widespread networks of informal illegal alcohol markets which provide consumers with physically available, conveniently accessible, and affordable illegal spirits. High accessibility and low cost of surrogates, and the need to quickly relieve severe withdrawal symptoms, were the main reasons given for the consumption of surrogates.

Among our study participants, the consumption of bad-quality industrial spirit (as defined by respondents) was perceived to produce excessive drinking and more severe health consequences than good-quality legal alcohol or medicine with a high percentage of ethanol bought in pharmacies. That difference was linked by respondents with the quality of the spirit itself and/or substances that were added to it by sellers in order to enhance its effect, such as tobacco or sedatives. It was reported that spirit that was contaminated by additives would act faster, and would produce more craving for the next dose and a more severe hangover the next day.

To date, there have been two studies published in the international literature that analyzed the composition of surrogates in Russia. One study found good-quality alcohol in medicines that contain a high volume of ethanol (McKee et al., 2005). This finding is consistent with participants' reports in our study. Another study that measured illegally sold spirits in two Russian cities did not find any toxic parameters that would be different from high-quality food ethanol (Savchuk, Nuzhnyi, and Kolesov, 2006). However, a few samples in this study did contain diethyl phthalate, which, as described by the authors, is a substance of medium toxicity, and in the event of substance poisoning damages the central nervous system, kidneys, liver, and eyes. And although they concluded that the amount of diethyl phthalate found would not modify the acute toxicity of ethanol, they suggested revising the Russian list of denaturizing agents where diethyl phthalate "is least consistent agent with requirements imposed" (Savchuk et al., 2006). Unfortunately, we did not test any industrial spirit samples in our study. However, self-reported perceptions of bad-quality spirits and spirits with substances added to it that produce more severe withdrawal symptoms, loss of sight, and other negative effects are worth noting.

Our findings related to alcohol control policies in connection to surrogate drinking documented that unavailability and the high price of legal alcohol would increase surrogate drinking, which was not unexpected. It has been previously shown that during the "dry" periods, *samogon* and surrogate drinking in Russia increased. The first detailed description of it appeared during "the semi-dry law" of 1914, when the sale of alcohol was banned by the government owing to the mobilization of the male population for the First World War. "This adjustment [to "the dry law"] has sometimes taken very dangerous forms... In this sense there is a growing use of vodka surrogates and different kinds of spirit containing substances: denatured and wood spirit, cologne, furniture polish, etc. These substances are used both pure or subjected to a process, in order to make them as harmless as possible and to improve the taste" (Vvedenskij, 1915). More recently, the Gorbachev antialcohol campaign resulted in an increase in moonshine production and consumption and surrogates consumption as well (McKee, 1999; Nemtsov, 2001, 2005; White, 1996). Similarly, according to our results, the current increase in the price of alcohol (prices increased 30%)

increased consumption of illegally sold spirits. On a positive side, recent policies targeted to reduce nonbeverage alcohol, such as medicines and perfumes with high alcohol content sold in legal outlets, have shown a decrease in consumption of such substances among studied subjects. It seems that, given the high accessibility of other surrogates, it would be essential to address illegal spirit sale, although it would require considerable enforcement efforts. On the demand side, reduction of harmful alcohol consumption among the general population and among heavy drinkers would be paramount.

Study Limitations

Because of the explorative nature of the study and its limitations (small, nonrandom anonymous sample selected from in-treatment population, self-report, and focus on participants' own perceptions), our results should be treated with caution. These preliminary findings should be confirmed in epidemiological studies in sufficiently large population samples. In this respect, the particularly interesting areas for further research identified in this study include (i) the influence of surrogate use on excessive drinking and more severe dependence (i.e., use of drinks with higher-than-traditional volume of ethanol, or use of surrogates with additives) and (ii) the health consequences of surrogate use, and whether the consequences of surrogates can be disentangled from those of "normal" alcohol beverages.

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Glossary

Disability-adjusted life years	A measure that combines number of years lost due to premature mortality and number of "healthy" years lost due to disability.
Drinking patterns	Drinking patterns show how, where and when people drink and under which circumstances. They include frequency of drinking, path of drinking, whether people drink with meals or without food, the settings where drinking takes place, the activities associated with drinking, and the types of beverage consumed.
Hazardous drinking	Pattern of alcohol consumption that results in adverse mental and physical health consequences.
Surrogate alcohol	Legally sold nonbeverage alcohol contained substances such as lotions, antifreeze, medicine, and illegally produced alcohol that are used for consumption in place of legally sold beverage alcohol.
Zapoj	Pattern of hazardous alcohol consumption that manifest itself in binge drinking continually for 2 days and more. Usually accompanied with morning withdrawal symptoms and work/social life absentism.

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Table 1
Selected sample characteristics

Selected sample background characteristics, <i>n</i> = 40	Percentage (<i>n</i>) or mean (range)
Age (years)	39% (21–61)
Female gender	17.5% (7)
Marital status	
Single	25% (10)
Married	37.5% (15)
Divorced/Widowed	37.5% (15)
Education	
Secondary and less	17.5% (7)
Vocational	60.0% (24)
Higher	22.5% (9)
Employment	
Unemployed	47.5% (19)
Manual professions	35.0% (14)
Nonmanual	17.5% (7)
Length of last drinking episode	
4 days–2 weeks	17.5% (7)
3 weeks–2 months	30.0% (12)
3 months–8 months	20.0% (8)
More than 8 months	32.5% (13)
Average dose during last drinking episode (mL equivalent of spirit)	690 mL (250–2000)
Number of times in treatment	
Twice and more	72.5% (29)