

4-2012

Alcohol Policy in Belarus

Yahor Luhauskikh

University of Southern Maine, Muskie School of Public Service

Follow this and additional works at: https://digitalcommons.usm.maine.edu/muskie_capstones

 Part of the [Public Health Commons](#)

Recommended Citation

Luhauskikh, Yahor, "Alcohol Policy in Belarus" (2012). *Muskie School Capstones and Dissertations*. 49.
https://digitalcommons.usm.maine.edu/muskie_capstones/49

This Capstone is brought to you for free and open access by the Student Scholarship at USM Digital Commons. It has been accepted for inclusion in Muskie School Capstones and Dissertations by an authorized administrator of USM Digital Commons. For more information, please contact jessica.c.hovey@maine.edu.

Alcohol Policy in Belarus

Capstone Project

By: Yahor Luhauskikh

Advisor: Andrew Coburn

Second Reader: David Hartley

Graduate Program in Health Policy and Management

Edmund S. Muskie School of Public Service

University of Southern Maine

May, 2012

TABLE OF CONTENTS

Executive Summary	3
Introduction	4
Background	5
Approach	
Project Goals	8
Analysis	9
Results	
Current Alcohol Regulation	9
Alcohol Policy Guiding Document	12
Assessing the Program	
Assessing the Extent to which the Program Reviews the Nature of Alcohol in the Society	12
The Group at High Risk of Harm, the Goals and the Targets Set	13
Strategic Approaches	14
Policy Option 1: Increase the Price of Alcoholic Beverages	15
Rationale and Evidence of Effectiveness	15
Issues to Consider	17
Policy Option 2: Increasing Minimum Legal Alcohol Purchasing Age to 21 Years	19
Rationale and Evidence of Effectiveness	19
Issues to Consider	20
Conclusion and Recommendations	25
References	26

EXECUTIVE SUMMARY

This capstone is an analysis of current alcohol policies in Belarus. It also evaluates new policy solutions to curb alcohol consumption and alcohol-related harm in Belarus.

Background: Alcohol is the world's third largest risk factor for disease and disability. Almost 4% of all deaths worldwide are attributed to alcohol. Alcohol consumption has always been a pressing issue in Belarus. Belarus is among the heaviest drinking countries in the world. Estimated total alcohol consumption in 2009 was 15.4 liters. About 30% of it was attributed to non-commercial alcoholic beverages. Spirits are the most popular commercial beverage with a market share about 50%. While Belarusians consume large amount of alcohol, the pattern of its consumption is also dangerous. Nordic drinking style predominates in Belarus, which is characterized by an irregular intake of large doses of distilled spirits. It was estimated that 18.5% of all deaths in the country are attributed to alcohol. In 2010 there were 195,945 patients registered with alcoholism and alcoholic psychoses. According to the Ministry of Internal Affairs in 2011 there were 23,000 individuals who committed a crime while being drunk; 876 road accidents were due to drunk drivers and 46,800 car drivers were fined for drinking and driving. The Belarusian government is aware of the problem and trying to manage it. Present trends in alcohol related morbidity and mortality and the overall level of alcohol consumption, however, indicate that it has not been very successful.

Approach: The goals of this capstone were to: 1) Document and assess current public health policies of the Republic of Belarus that address alcohol-related problems and to evaluate current guiding documents in this area; 2) Suggest policies to curb alcohol consumption and alcohol-related harm. Data and information for the capstone are based on the public health policy documents and laws which address alcohol problem in the Republic of Belarus and the literature on policy strategies to the problem. To evaluate Belarus's current guiding alcohol policy document I used an approach outlined by Crombie et al (2007). To describe current alcohol policies in Belarus an approach used by WHO (WHO, 2011; WHO Regional Office for Europe, 2010) was employed. Assessment of effectiveness of measures is based on a literature review. To evaluate suggested policies I used an adopted version of the International Center for Alcohol Policies guide to feasible interventions (2008).

Conclusion and Recommendations: 1) To alleviate the burden of alcohol consumption, Belarus has employed a diversity of strategies. Most of the measures to curb alcohol problem in Belarus that are currently in place have scientific evidence of effectiveness. If carefully planned and properly enforced, they have the potential to influence the level of the alcohol consumption and alcohol-related harm. 2) Belarus has a free standing policy document on alcohol - *the State Program of National Actions on the Prevention and Overcoming Heavy Drinking and Alcoholism for 2011-2015*. Analysis of the Program suggests that government does not fully recognize the alcohol problem. The government should broadly evaluate the implications of alcohol consumption in the country, especially in social and economic domains. 3) The implementation of the Program could influence alcohol consumption and alcohol related harm in the society. At the same time, however, the government should acknowledge that there is no evidence of effectiveness of media and information campaigns on reducing alcohol consumption and alcohol-related harm. The campaigns make sense only when they accompany strategies with proven scientific evidence of their effectiveness. 4) The government should give its most serious consideration to such strategy as increasing taxation and price of alcoholic beverages as it is an appropriate and promising strategy for Belarus for reducing alcohol consumption and alcohol-related harm. Next issues should be addressed while preparing for implementation of alcohol tax hike: cross-border smuggling from Russia and Ukraine; production of home-made alcoholic beverages for sale; social marketing campaign to address the negative aspects of the Belarus drinking culture and to build support for the tax increase.

INTRODUCTION

Alcohol consumption is a long-standing problem in Belarus. It has extremely negative consequences on public health in the country. The government is dedicated to solve the problem but it's not very successfully. This capstone is an analysis of current alcohol policies in Belarus. It also evaluates new policy solutions to curb alcohol consumption and alcohol-related harm in Belarus. Two policy options were discussed: increasing taxation and price of alcoholic beverages and increasing legal purchasing age to 21 years. Feasibility of both policies in Belarus was evaluated and suggestions were made for an implementation of the most appropriate policy.

BACKGROUND

Alcohol consumption and problems related to alcohol vary widely around the world, but the burden of disease and death is significant in most countries. There is wide variation in alcohol consumption among countries, with worldwide consumption averaging about 6.2 liters of pure alcohol (defined as 100% ethanol) per adult ($\leq 15y/o$) per year. The countries with the highest level of consumption are in Eastern Europe around Russia, but other areas of Europe also have high overall consumption (WHO Europe region - 11.9 per adult) (Rehm et al., 2009).

Alcohol is the world's third largest risk factor for disease and disability; in middle-income countries, it is the greatest risk. Apart from being a drug of dependence, alcohol is related to many major disease outcomes. Alcohol is a causal factor in 60 types of diseases and injuries and a component cause in 200 others (WHO, 2011). Health consequences of alcohol consumption can be grouped into three types, depending on the nature of the conditions and the nature of the etiological influence of alcohol on those conditions: wholly alcohol-attributable conditions (alcohol psychoses, alcohol dependence syndrome, acute alcohol hepatitis, alcoholic cirrhosis of liver, etc.), chronic conditions where alcohol is a contributory cause (lip and oropharyngeal cancer, oesophageal cancer, liver cancer, epilepsy, hypertension, coronary heart disease (depends on pattern of drinking), stroke, etc), and acute conditions where alcohol is a contributory cause (road injuries, injuries from fall, fires, excessive cold, drowning, occupational and mechanical injuries, suicide, assault, child abuse). For most diseases there is a dose response relationship, with risk of the disease increasing with higher alcohol consumption.

Studies relating average volume of drinking to risk of injury have found that risk of injury is positively related to average consumption of alcohol, and that increased risk starts at relatively low volumes of intake. Frequency of heavy drinking and perceived intoxication are both associated with injury in general as well as with death due to injury (Rehm et al., 2003).

Almost 4% of all deaths worldwide are attributed to alcohol; it is more than all deaths caused by HIV/AIDS, violence or tuberculosis. (WHO, 2011). The alcohol-attributable burden of disease in Europe C region (which comprises Belarus) is the highest among all the WHO regions. About 18.6 % of all the male deaths in this region could be attributed to alcohol exposure. (Rehm, Taylor, & Patra, 2006).

In terms of alcohol-related mortality, almost 50% of the global burden is related to acute causes, i.e. unintentional and intentional injuries, with unintentional representing the greater share. The next most important category comprises malignant cancer with 20% of the overall alcohol-related mortality burden, followed by cardiovascular diseases (15% of all alcohol-attributable deaths) and other noncommunicable diseases, primarily liver cirrhosis (13%) (Rehm et al., 2004).

The costs associated with alcohol amount to more than 1% of the gross national product in high-income and middle-income countries, with the costs of social harm constituting a major proportion in addition to health costs. Among high-income countries, the greatest contributor to total alcohol-attributable costs was the cost of productivity loss, which accounted for 72.1% of the overall cost, followed by direct health-care costs (12.8%), other direct costs (11.6%), and direct law-enforcement costs (3.5%) (Rehm et al., 2009).

Alcohol consumption has always been a pressing issue in Belarus. Belarus is among the heaviest drinking countries in the world. Recorded per capita alcohol consumption in 2010 was 12.3 liters of pure alcohol; a 2.6% increase in the rate of alcohol consumption was observed in recent years. Just under half of that alcohol was consumed in the form of spirits (45.6% of total recorded sales in 2010), with the rest divided between wine (34.8%) and beer (16.3%) (as, for example, opposed to the EU, where beer is a dominate beverage with a share of 44%, followed by wine and spirits, 34% and 23% respectively (Anderson & Baumberg, 2006; Uniter, 2011). High alcohol, low quality wines amounted up to 90% of all wines consumed in Belarus in 2010.

Total alcohol consumption increased by an estimated 13.2% (from 13.6 to 15.4 liters) between 1980 and 2009. Average unrecorded alcohol consumption was about 3.4 liters in 1980 and 2009 with much variation within this period. Unrecorded consumption in 2009 was estimated to be 29.9% of official level of sales and 22.1% of the overall level of alcohol consumption (Razvodovsky, 2011).

Homemade vodka – samagon is the main non-commercial alcohol beverage in Belarus. While Belarusians consume large amount of alcohol, the pattern of its consumption is also dangerous. Nordic drinking style predominates in Belarus, which is characterized by an irregular intake of large doses of distilled spirits (Razvodovsky, 2008). WHO has recently examined national differences in drinking patterns using a score ranging from 1 to 5 (least to most harmful) that includes measures of, for example, binge drinking frequency. Belarus scored 4, one of the highest scores in Europe (WHO Regional Office for Europe, 2010). According to a recent survey in Mogilev city, 81.6% of 14–21 years old adolescents claimed that they already tried alcohol in their life, and 97% of them did it before they were 18 years old. 41.3% of the adolescents admitted that they consume alcohol from time to time (Bogdanov, 2010).

Alcohol consumption has extremely negative consequences on public health in Belarus. There were 195,945 patients registered with alcoholism and alcoholic psychoses in 2010, among which 27,949 were newly diagnosed patients (47 patients were under 18 years old) (Kukharevich, 2011). Razvodovsky (2011c) estimated that 18.5% of all deaths in the country are attributed to alcohol and 30% of deaths among working age Belarusians are linked to alcohol consumption.

Fatal alcohol poisoning is the most common cause of alcohol-related mortality. In a recent study in the city of Grodno mortality due to fatal alcohol poisoning amounted to 14.2% of overall mortality (Razvodovsky, 2008b). It was shown that in addition to an already exceptionally high mortality level in 1990, the alcohol-poisoning rate and alcohol poisoning death rates have risen sharply among men and women in both urban and rural regions during the post-Soviet period. This increase was much greater among rural inhabitants (Stickley & Razvodovsky, 2009). According to the Bureau of Forensic Medicine autopsy reports, the number of deaths due to accidents and injuries increased by 52.5% in Belarus between 1979 and 2007

(from 62.3 to 95.0 per 100.000 of residents), and fatal alcohol poisoning rate increased by 108.6% (from 12.8 to 26.7 per 100.000 of residents). Alcohol in blood was found in 50.1% victims of deaths from accidents and injuries for the whole period, ranging from 40% in 1986 to 58.2% in 2005 (Razvodovsky, 2010). Overall in Belarus, a 1-liter increase in per capita consumption was associated with an increase in injury mortality of 5.5 per 100,000 inhabitants (Landberg, 2010). It was also determined that alcohol is an important contributing factor to a high level of suicides in Belarus. The analysis suggests that an increase in per capita alcohol consumption by 1 liter would result in an 8.8% increase in the total suicides rate (Razvodovsky, 2011)

From 1999 to 2009 mortality from specific alcohol-related diseases increased, including chronic alcoholism (increase from 3.5 to 4.6 per 100,000 population), alcoholic cardiomyopathy, liver diseases, pancreatic diseases, alcohol psychoses and some other alcohol-related mental diseases, fatal alcohol poisoning. Deaths from these conditions accounted for 3.4% of all deaths in 2009 in Belarus (Metelskaya et al., 2010). Ramstedt (2007) found that a 1-liter increase in per capita consumption was on average estimated to cause 3 to 4 additional liver cirrhosis deaths per 100 000 for men and 1 additional death for women. According to the Ministry of Internal Affairs in 2011 there were 23,000 individuals who committed a crime while being drunk; 876 road accidents were due to drunk drivers and 46,800 car drivers were fined for drinking and driving.

To alleviate the burden of alcohol consumption, many countries have employed a diversity of strategies. The Belarusian government also recognizes the problem and has adopted several guiding documents in the alcohol policy field and employed variety of measures. The Council of Ministers of the Republic of Belarus adopted its first guiding document, *The Concept of the State Anti-alcohol Policy* in 2000. Currently, the government has adopted the third National Program for curbing alcohol consumption. Present trends in alcohol related morbidity and mortality and the overall level of alcohol consumption, however, indicate that these programs have not been very effective. A survey carried out in 2008 by the Institute of Sociology showed that only 1% of experts believe that the measures undertaken by the government to handle the problem are effective, while 38% think that they are not effective at

all (Fedorovich, 2012). This means that some changes are needed to the current alcohol policy in Belarus.

APPROACH

Project Goals:

The goals of this capstone were to:

- 1) Document and assess current public health policies of the Republic of Belarus that address alcohol-related problems and to evaluate current guiding documents in this area; and
- 2) Suggest policies to curb alcohol consumption and alcohol-related harm.

Data and information for the capstone are based on the public health policy documents and laws which address alcohol problem in the Republic of Belarus and the literature on policy strategies to the problem.

Analysis

To evaluate Belarus's current guiding alcohol policy document I used an approach outlined by Crombie et al (2007). To describe current alcohol policies in Belarus an approach used by WHO (WHO, 2011; WHO Regional Office for Europe, 2010) was employed. Assessment of effectiveness of measures is based on a literature review. To evaluate suggested policies I used an adopted version of the International Center for Alcohol Policies guide to feasible interventions (2008). The guide was used to:

- Review most promising measures aimed at reducing the overall level of alcohol consumption and harm associated with drinking (descriptions and what interventions seek to accomplish; objectives and targets);
- Determine limitations of the interventions (shortcomings) and obstacles to overcome (societal, community, and other factors that might inhibit the introduction of the intervention, impede its implementation, or hinder its success);
- Determine procedural requirements (the actions needed in order to introduce and implement an intervention);
- Assess the amount of resources (human, technical, financial) needed to implement an intervention;
- Assess interventions' likely intended and unintended outcomes, both positive and negative;
- Evaluate strengths and weaknesses of the interventions.

RESULTS

Current Alcohol Regulations

The core alcohol regulations in Belarus are outlined in legal documents: Law of the Republic of Belarus *On State Regulation of Production and Turnover of Alcoholic Products, Non-Food Alcohol Containing Products and Non-Food Ethyl Alcohol* from 08.27.2008 # 429-3, the Decree of the President of the Republic of Belarus from 09.09.2005 # 11 *On Improvement of State Regulation of Production and Turnover of Alcoholic Products, Non-Food Alcohol Containing Products and Non-Food Ethyl Alcohol*, the *Criminal Code of the Republic of Belarus* from 07.09.1999 #275-3, the *Code of Administrative Offences of the Republic of Belarus* from 04.21.2003 #194-3.

Under current laws the government has partial control over the sale and production of alcoholic beverages in Belarus. In order to be able to legally produce and sell alcohol one has to obtain a license. Moreover only companies which have more than 30% of shares belonging to the state can be involved in production of some alcoholic beverages. The government also establishes quotas for alcohol production. It is empowered to regulate prices on alcohol and levy exercise taxes. The government sets minimum legal purchasing age limit which is currently 18 years both for on- and off-premises purchases.

According to present regulations the legal blood alcohol concentration level (BAC) is 0.03% for all age groups and professions. The drunk-driving legislation also includes provisions for such areas as the legal interpretation of a refusal to take a BAC test (which equals to be guilty) and penalties (fine, suspension of license, or imprisonment for habitual drink driving offenders or offenders, who have significantly exceeded the legal BAC).

The state in Belarus regulates alcohol beverage advertising. There are restrictions on the content of the advertisement which are consistent with international standards. There are restrictions on alcohol advertisement in different media, e.g. advertisement of spirits is totally prohibited on TV and advertising of beer is only allowed from 8 p.m. till 7 a.m. Under the current alcohol regulations there are some restriction on places where alcoholic beverages can be sold. It is illegal to sell all kinds of beverages on the Internet. It is also illegal to sell alcohol in schools, healthcare organizations, religious places of worship and some others. There is also a

restriction on alcohol consumption on those premises and in public places (park, streets), sporting and leisure events, and workplaces. One can be fired if was detected being under alcohol influence in the workplace.

Having laws and regulations is only one part of alcohol policies; effective enforcement of those laws is a prerequisite for a comprehensive alcohol policy. The question of enforcement is thus crucial. Unfortunately the data on enforcement are scarce and the methods of monitoring enforcement of alcohol regulations in Belarus are undeveloped (WHO, 2004). In this work, enforcement is discussed only with respect to minimum alcohol purchasing age. While unable to evaluate enforcement of the laws, I explored evidence of their effectiveness. Effectiveness was evaluated based on recent literature reviews (Anderson, Chisholm, & Fuhr, 2009; Babor et al. 2010; WHO Regional Office for Europe, 2009a) reflecting the strength of scientific evidence establishing whether the particular strategy is effective in reducing alcohol consumption and/or alcohol related harm. Results are summarized in Table 1. The following rating scale was used:

- 0 Evidence indicates a lack of effectiveness.
- + Evidence for limited effectiveness.
- ++ Evidence for moderate effectiveness.
- +++ Evidence for high degree of effectiveness.
- ? No controlled studies have been undertaken or there is insufficient evidence for judgment.

Table 1. Effectiveness of Current Alcohol Control Measures

Alcohol control strategy	Evidence of effectiveness	Implementation
National control of production/sale: Monopoly	?/++	No/No
National control of production/sale: Licensing	+++ /+++	Yes/Yes
Excise tax on beer/ wine /spirits	+++	Yes/Yes/Yes
National legal minimum age for off-premise/on-premise sales of alcoholic beverages (selling) (beer/wine/spirits)	+++	18/18/18
Restrictions for on/off premise sale of alcoholic beverages:		
Location (places/density)	++	Yes/No
Specific events	?	Yes
Intoxicated persons	++	No
National maximum legal blood	+++	0.03% / 0.03% / 0.03%

alcohol concentration (BAC) when driving a vehicle (general/young/professional)		
Legal restrictions on content /exposure of alcohol advertisement	++ / ?	Yes/Yes
Administrative license suspension for drink-driving	++	Yes
Imprisonment for drunk-driving	0	Yes

Most of the measures currently in place have scientific evidence of effectiveness. If carefully planned and properly enforced, they have the potential to influence the level of the alcohol consumption and alcohol-related harm. Since there is almost no evidence of the effectiveness of imprisonment for drunk-driving, the government should consider abolishing this policy.

Alcohol Policy Guiding Document

Belarus has a free standing policy document on alcohol - *State Program of National Actions on the Prevention and Overcoming Heavy Drinking and Alcoholism for 2011-2015* adopted by the resolution of the Council of Ministers of the Republic of Belarus # 27 from 11.01.2011. The Program outlines measures the government plans to undertake to curb the country's alcohol problem. The main aim of the State Program is to reduce alcohol consumption by the population and to decrease the negative consequences of its consumption for the society. The Ministry of Health of the Republic of Belarus coordinates the Program.

Assessing the Program

The key themes explored were the description of the impact of alcohol use on the society, the group at high risk of harm, the goals and the targets set, and the areas within which interventions are proposed with evaluation of their effectiveness.

Assessing the Extent to which the Program Reviews the Nature of Alcohol in the Society

The nature of the alcohol problem may be categorized into four areas: consumption, individual health, social and economic costs, and benefits. Specific factors or measures within each of the category are used. For consumption it is total consumption, patterns of consumption, risky consumption. For individual health it is total mortality, total morbidity, road traffic injuries, specific diseases (cirrhosis, cancer, mental disorders, fetal alcohol syndrome)

and other (risk of drowning, fire, falls, industrial accidents and suicide). For social and economic harms it is violence, domestic abuse, family disruption, employment (absence when sick, lost production), unsafe sex and for benefits it is health benefits of moderate consumption, economic (employment and export earnings, government tax revenue) and social benefits. The Program briefly outlines levels of alcohol dependence, number of road accidents, and industrial accidents related to alcohol consumption, alcohol related violence and criminal offenses. The results are outlined in Table 2 based on the following rating scale of the extent of the coverage within each topic:

- +++ Review of all or most of the categories, giving data.
- ++ Review of most of the categories, with limited detail.
- + Review of a few of the categories, with limited detail.
- Topic not mentioned.

Table 2. The Extent to which the Nature of Alcohol in Society is Reviewed in the State Program

Topic	Consumption patterns	Harm to individual health	Social and economic harm	Benefits
Rating	+	+	+	-

Analysis of the extent to which the alcohol problem in the society is reviewed in the Program showed that all the areas are poorly assessed. This could be a sign that the government does not fully recognize the problem. The government should broadly evaluate the implications of alcohol consumption in the country, especially in social and economic domains. Evaluation models employed in others countries can be use for these purposes (e.g. Bouchery et al. 2011).

The Group at High Risk of Harm, the Goals and the Targets Set

The Program draws attention to drinking by young people and the increasing number of heavy drinkers. It is also notes the increasing number of women who abuse alcohol. In general the Program aims to reduce alcohol consumption and alcohol related harm in the society. It sets specific targets and provides the amount of improvement intended. Those targets are:

- Reduce the number of criminal offences committed by individuals while under the influence of alcohol (annually by 1-5%);
- Reduce the number of car crashes caused by individuals while under the influence of alcohol (annually by 4-5%);

- Reduce the number of industrial accidents among individuals while under the influence of alcohol (annually by 5 - 6%);
- Reduce mortality due to alcohol poisoning (annually by 5 - 7%);
- Reduce the number of individuals with acute alcoholic psychoses (annually by 7 - 8%);
- Reduce the number of individuals with alcohol dependence (annually by 2 -3%);
- Reduce the number of underage who consume alcohol with negative consequences (annually by 3 - 5%).

Interestingly there is no numeric target in the Program for reduction in total alcohol consumption.

Strategic Approaches

The Program identifies a wide range of areas for interventions and groups them around targets set. A great deal of attention is devoted to social marketing, mass media, health campaigns, and information campaigns communicating information about harm caused by alcohol, responsible drinking, the hazards of drinking and driving, etc..

Compared to previous Programs the recent Program emphasizes treatment and early detection interventions among harmful and dependent drinkers and with plans for increasing state funding targeted to these areas. Other areas covered in the Program are taxation and pricing (regulation of exercise taxes and price of alcohol), regulation of physical availability (local pilot projects on limiting hours and days of sales), warning labeling on alcoholic beverages, enforcement of drunk-driving countermeasures, increasing severity of punishment for drunk-driving and for employees detected being under the influence of alcohol at a workplace, promotion of physical activities among teenagers and young adults, increasing severity of punishment for alcohol sales to underage. Increasing legal purchasing age to 21 years is also considered. It is worth noting that such strategies as increasing taxation and price of alcoholic beverages and increasing legal alcohol purchasing age to 21 years are suggestive and are not mandatory for implementation. The Program strategies and their effectiveness according to the literature (using same evaluation system discussed above) are outlined in Table 3.

Table 3. Effectiveness of Strategies in the State Program

Strategy	Effectiveness
Education and persuasion	+ / 0

Treatment and early intervention services	+++/**
Increase severity of punishment for drink-driving	?
Increase taxation and price	+++
limiting hours and days of sales	++
Warning labeling on alcoholic beverages	0
Enforcement of drink-driving countermeasures	+++
Promotion of physical activities among teenagers and young adults	0/?
Increasing legal alcohol purchasing age to 21 years	+++

The analyses of the effectiveness of the suggested strategies suggest the implementation of the Program could influence alcohol consumption and alcohol related harm in the society. At the same time, however, the government should acknowledge that there is no evidence of effectiveness of media and information campaigns on reducing alcohol consumption and alcohol-related harm. The campaigns make sense only as background for implementing strategies with proven scientific evidence of their effectiveness (Barbor et al 2010). The government should give its most serious consideration to such strategies as increasing taxation and price of alcoholic beverages and increasing legal purchasing age to 21 years as these strategies have the strongest evidence of effectiveness. I will therefore assess increasing taxation and price of alcoholic beverages and increasing legal purchasing age to 21 years which have recently gained attention in Belarus and have been broadly discussed by the media (though sadly not by academia). The results of my assessment of these two policy options are summarized in Table 4 (page 23).

Policy Option 1: Increase the Price of Alcoholic Beverages

During the 2010 debates on the *State Program of National Actions on the Prevention and Overcoming Heavy Drinking and Alcoholism for 2011-2015*, Chasnoit (2010), a Deputy Minister of Health spoke in favor increasing the prices of alcohol as a measure which would help curb the alcohol problem. He contended that between 2005-2009 the consumer price index for food outpaced the same index for alcohol of about 3% annually. As a result, alcohol became relatively cheaper than food, and was more attractive and available to consumers. He estimated that between 1995 and 2008, the real price of alcohol decreased three-fold. He concluded that the price of spirits should be increased.

Rationale and Evidence of Effectiveness

Of all alcohol policy measures, the evidence is perhaps the strongest for the impact of alcohol prices on alcohol consumption and alcohol-related harm. According to basic economic theory, with an increase of alcohol prices consumption will decline as consumers can afford a smaller amount of drinking with higher prices holding all other factors constant. Economists use the term price elasticity of demand when measuring the sensitivity of consumption to change in price. For example, price elasticity for alcohol of -0.5 implies that a 1% increase in its price would reduce alcohol consumption by 0.5% (Babor et al., 2010).

One of the ways to influence alcohol prices is taxation. A state imposes taxes on alcoholic beverages in order to generate revenue. Alcoholic beverages are especially suitable commodities for taxation because of their detrimental social and public health consequences. Taxes on alcohol are justified as externality-correcting taxes. Alcohol consumption leads to costs which are not imposed on the individual consuming the product. Those costs include treatment of alcohol-related illnesses by national health systems, costs of crime and anti-social behavior, lost productivity and working days, etc. Well designed alcohol taxes ensure that these external costs are factored into the price facing a private consumer. From perspective of behavioral economics, alcohol taxes (which increase the price of alcoholic beverages) are a way to help people to limit their alcohol consumption to an optimal amount based on their “true” desires. This is a case when people’s “true” preferences are to drink little but they cannot resist binge drinking when they are out with friends or when they have had their first drink (Leicester, 2011).

The evidence indicates that alcohol tax hikes are more than fully passed through to alcoholic beverages prices. Taxes are over-shifted in both on-premise and off-premise establishments, and that the pass-through patterns are similar across all kind of beverages (Kenkel, 2005; Young, 2002). According to recent reviews, alcohol has an average short run price elasticity of approximately -0.5 (Gallet, 2007; Wagenaar et al., 2009). These results suggest that a 10% increase in price will reduce consumption by 5%. It was also estimated, however, that young adult drinkers and heavy drinkers are less responsive to price change. Gallet (2007) in his meta-

analysis found that price elasticity for young adults was -0.39 and Wagenaar et al. (2009) found that price elasticity among heavy drinkers was -0.28.

The effect of the price of alcohol on alcohol-related harm has also been explored. Wagenaar et al. (2010) find a negative correlation between alcohol tax increase and alcohol related diseases and injury outcomes, violence, suicide, sexually transmitted diseases, crime and other misbehavior. Maldonado-Molina and Wagenaar (2010) estimate that a 10% increase in the alcohol tax in Florida was associated with 2.2% decline in alcohol-related mortality.

Issues to Consider

The feasibility of increasing alcohol taxes as an effective measure depends on the level of government control over the market. The positive effects of increased taxation need to be weighed against a potential increase in smuggling or illegal production of alcoholic beverages which are usually of a low quality. Ideally, countries should implement a tax and price level which is high enough to reduce consumption and harm while not being so high as to increase illegal production, smuggling and cross-border trade. Part of the complexity of setting taxation levels is the pressure arising from large differences in prices between neighboring countries, leading to a significant level of cross-border trafficking (WHO, 2010). This is especially relevant considering that there is no border control between Russia and Belarus. If alcohol is considerably cheaper in Russia than in Belarus it will create a flow of illegal alcohol to Belarus.

Over the last decade, the level of unrecorded alcohol consumption in Belarus declined significantly due to the increased economic availability of legal alcohol, especially with an increased supply of high-alcohol, cheap wine (Rasvodovski, 2011). With increased alcohol prices, some consumers may shift back to home-made alcoholic beverages (which usually are of a low quality) that form the illegal market. Although there is not survey data on this topic in Belarus, the results of a survey in Russian Federation revealed that in case of increase of alcohol price, 15% of respondents will switch to home-made alcohol (WCIOM, 2011).

The Ministry of Internal Affairs could develop a strategy to curb this illegal market. Effective monitoring and enforcement, backed by sanctions is an important part of tax policy and might be addressed in legislation. Enforcement costs may be offset by excise tax revenue

or by lower fiscal, economic and social costs as a result of reducing heavy consumption of cheap alcohol (WHO, 2011).

Raising levels of alcohol taxation may cause a decline in alcohol consumption and an increase in revenues. On the other hand, raising excise tax may decrease revenues. For example, the University of Sheffield (Brennan, 2008) estimated that in case of tax increase there will be a small decrease in tax revenue in the UK. To make the case for changes and evaluate all possible scenarios it is useful to develop a model. The model developed by the University of Sheffield could be a good example.

It also has been argued that tax increases causes job losses. In fact, the long-term effects of higher alcohol taxes on employment are likely to be neutral, with less unemployment if anything, although there may be some short-term adjustment in the hospital sector (WHO Regional Office for Europe, 2009b; Horlings & Scoggins, 2006).

Alcohol and entertainment industries will oppose alcohol tax increase as this measure will potentially reduce their revenue. The industries will try to advance their interests by lobbying the government. Implementation of this measure will also have to deal with general public opposition. A poll in the Russian Federation showed that 46% of respondents were against alcohol tax increase (WCIOM, 2011). The government will have to deal with the opposition and social marketing campaigns for acceptance of new taxes will be required.

Increases in alcohol excise tax will also accelerate inflation in Belarus. Alcohol is a sizable share of retail sales and price increases would add to inflation in Belarus (e.g. BELAPAN, 2012). This could be an obstacle for increasing the tax. Overall, inflation is high in Belarus and the government has promised to bring it down (Interfax, 2012). Increasing of the tax will require political will from the government.

The implementation of tax changes will not require procedural or structural changes or intensive allocation of resources as the infrastructure for collecting taxes is in place in Belarus. As discussed above, however, there may be increase in costs associated with dealing with possible increase in illegal alcohol production and increased activity on black market.

The main stakeholders in addressing alcohol prices and taxes are the Ministry of Finances and the Ministry of Taxes and Duties. The two ministries can act jointly and model the

likely impact of tax changes on alcohol consumption and the economy. They also would be responsible for developing new tax rates. The Ministry of the Internal Affairs is an important stakeholder as it is responsible for dealing with smuggled, illicitly produced and informally produced alcohol. It will help to monitor any adverse consequences of tax increase. Other ministries and departments which are responsible for collecting taxes and dealing with illegal alcohol are important partners.

It also should be considered that since 2011 Belarus is in the Custom Union with Russia and Kazakhstan. The new alcohol duty tax should be aligned with tariffs within the Union (Custom Union Commission).

Policy Option 2: Increasing Minimum Legal Alcohol Purchasing Age to 21 Years

In March 2012 the Attorney General of Belarus, in a letter of advice on the alcohol problem to the Prime Minister, emphasized the importance of the implementation of the State Alcohol Program. Among other measures, he recommended the Ministry of Health develop amendments to the current legislation increasing the minimum legal alcohol purchasing age to 21 years (A letter of Advice of the Attorney General of Belarus on the Alcohol Problem to the Prime Minister, 2012).

Rationale and Evidence of Effectiveness

Research shows that the younger people start drinking, the more likely they are to experience problems from heavy drinking at a later stage. Alcohol use before age 15 is associated with a four-fold increase in the probability of subsequently developing alcohol dependence (Hingson et al., 2006). Moreover, young people experience more harm than adults from the same amounts of alcohol (Habhood et al., 2001). In addition, there is some “trickle-down” effect: when youth get alcohol they often give it to even younger teens. Increasing the minimum legal age to 21 years would make alcohol less available to 15-17 years old adolescents than when the minimum age is 18 years (Wagenaar & Toomey, 2002).

Higher minimum legal purchasing age makes it more difficult for underage drinkers to buy alcohol, reduces rates of traffic crashes, rates of underage drinking and this effect persists in the subsequent 21–25 years age group (O’Malley and Wagenaar, 1991). The most comprehensive review of the 21 years limit policy (Wagenaar and Toomey, 2002) based on all

published studies on legal drinking age between 1960 and 2009 concluded that increasing the legal age for purchase and consumption of alcohol to 21 years is effective in reducing alcohol consumption and car crashes. It also has some effect on reducing non-traffic injuries and other crime such as vandalism and disorderly conduct. However the evidence is more consistent for reducing car crashes than reducing alcohol consumption: almost half (46%) of the analyses in the review found no association between the legal age and indicators of alcohol consumption. A recent comprehensive review of preventive interventions addressing underage drinking (Spoth, Greenberg, & Turrisi, 2008) ranked raising the minimum drinking age policy high among options. This review also finds the preventive effect of the measure not fully consistent with more evidence in support of car crashes reduction. For example, using data from all US states for 1982–1997, Voas and Tippetts (1999) estimated that increasing the minimum drinking age in the US to 21 years reduced fatal crashes involving young drinking drivers by 19%.

Issues to Consider

There is fairly good empirical support for setting the minimum legal alcohol purchasing age at 21 years, as it reduces alcohol problems among young people (drunk driving) and potentially alcohol consumption. However, the potential benefits from increasing the drinking age are high if the law is properly enforced. Evidence exists that even a moderate increase in enforcement can significantly reduce the sale of alcoholic beverages to under-age youth (Wagenaar et al., 2000).

Having a legal age limit for buying alcoholic beverages does not necessarily mean that young people under the limit age cannot purchase or consume alcoholic beverages (Wagenaar and Wolfson, 1994). According to the European School Survey Project on Alcohol and Other Drugs (Hibell, 2009), 40% of school students in Russian (50% in Ukraine) claimed that they had bought beer in a store at least once during last 30 days for their own consumption. It can be assumed that the same pattern exists in Belarus (Belarus does not participate in the survey). Private selling (or giving) of alcoholic beverages by parents or older friends to those under-aged also exists to in Belarus. Opponents of the law would question increasing the age limit if the government cannot enforce the current 18 years limit. Improving enforcement should be considered when the new legislation will be being crafted.

Opponents of the law will argue that the new limit will drive alcohol drinking by young people underground making it more dangerous and uncontrollable. Recently the Amethyst Initiative in the USA spoke against the 21 years age limit. The Initiative is made up of chancellors and presidents of universities and colleges across the United States. They argue that the problem of irresponsible drinking by young people continues despite the minimum legal drinking age of 21, and there is a culture of dangerous binge drinking on many campuses. The Initiative claims that prohibition is not effective and that the government should think instead about how to prepare young adults to make responsible decisions about alcohol use (Saylor, 2011; <http://www.amethystinitiative.org/>). However, recent studies show that a higher minimum legal drinking age is protective against heavy drinking for college students (Keller et al., 2009).

The effectiveness of the minimum drinking age law will depend not only on the government's efforts to enforce it. Key constraints include society's acceptance of youth drinking (Wagenaar and Wolfson, 1994). The government will need to develop and support educational campaigns to raise awareness of the problem among the general public. It will be relatively easy to do. Recent surveys in Russia discovered that measures that prevent alcohol consumption by children and adolescents are the most popular (WCIOM, 2011b).

Alcohol is part of young people's culture in Belarus. A lot of them spend their leisure time drinking. While the government will be trying to prevent those under age 21 from drinking, success of the prohibition will depend in part on offering youth alternatives on how to spend their free time.

One of the major limitations of this policy is that most of the evidence for the policy came from the USA. What is good in the USA might not be so effective in Belarus. Compared with the United States, Belarus has higher legal driving age (18 years), more expensive automobiles and gasoline, and greater access to public transportation. As a result, young adults in Belarus drive less than in the USA, and consequently youth in Belarus are less at risk of traffic crashes. Since car crashes with young adults is not as large an issue in Belarus, there might be not enough justification for increasing the minimum legal purchasing age to 21 years (adopted from Wagenaar and Toomey 2002). Moreover, some would argue that instead of pretending

that enforcement of this law is feasible in Belarus, the government should maintain the status quo and instead develop programs to teach youth how to drink responsibly (adopted from Toomey, Nelson & Lenk, 2009; Egorchenko, 2011).

All the countries surrounding Belarus have a minimum drinking age of 18 years. At 18 a person in Belarus can obtain a driver's license, vote, serve in military, and young people are likely to see a drink age of 21 as onerous. The government will have to deal with this opposition and media advocacy might help (Wagenaar, Murray & Toomey, 2000).

Increasing the minimum legal alcohol purchasing age to 21 years and making it illegal to sell to those who are under the age most likely won't be effective. In the USA minimum drinking age laws have multiple provisions targeting outlets that sell alcohol to minors; adults who provide alcoholic beverages to minors; and underage persons who purchase or attempt to purchase, possess or consume alcohol. In addition there are companion laws establishing lower BAC limits for underage drivers, graduated driver licensing laws, and other legislation such as social host liability laws, fake ID related laws, etc. The current U.S. effort to control underage drinking involves a package of 16 legal components and regulations (Fell, Fisher, & Voas, 2007). Simons-Morton et al. (2010) have suggested that a number of strict policies and their vigorous enforcement in the USA resulted in lower level of alcohol consumption among adolescents comparing to other countries.

Taking into account the experience in increasing minimum drinking age in the USA, the following minimum age policies should be considered for Belarus: requirement to check an evidence of age documents by a seller; loss of a license if alcohol is sold to minors; controlled purchased operations by police to test whether retailers are selling to minors without checking their age, etc (WHO, 2011).

The alcohol industry, part of the entertainment industry (night clubs, bars and restaurants), wholesalers and retailers will be active opponents of the law. They would argue that the new age limit will violate current laws and that the government should instead invest in helping young people learn to make healthy and responsible choices. (Wagenaar, 1993; Egorchenko, 2011).

The main stakeholders will be the Ministry of Health which will be responsible for crafting the bill. The Ministry of Health will need to cooperate with The Ministry of Trade and the Ministry of Internal Affairs. The Ministry of Trade is responsible for licensing on-and off-premises selling alcohol. The Ministry of Internal Affairs will be responsible for the enforcement of the law. The Ministry of Education might be interested in collaboration too.

Implementation of this measure will require considerable resources and multi-sector collaboration:

- training, education and awareness building (e.g. through media campaigns)
- educators, medical professionals and others to pass information
- compliance among retailers and servers
- effective enforcement measures
- Community support.

Table 4 summarizes the assessment of these two policy options.

Table 4. Evaluation of Two Policy Options: Increasing Alcohol Prices and Raising the Drinking Age

Intervention Criteria	Increasing Alcohol Price	Increasing Minimum Legal Alcohol Purchasing Age to 21 years
Objectives	<ul style="list-style-type: none"> • Meaningful price increase 	<ul style="list-style-type: none"> • Elimination of drinking under age 21
Targets	<ul style="list-style-type: none"> • Whole population 	<ul style="list-style-type: none"> • Young people under age 21
Intended outcomes	<ul style="list-style-type: none"> • Reduce overall alcohol consumption • Reduce alcohol-related health harm • Reduced social and economic harm 	<ul style="list-style-type: none"> • Reduce alcohol consumption among those below age 21* • Prevention of health and social problems among those below age 21 (drunk-driving) • Reduced social and economic harm*
Unintended outcomes	<ul style="list-style-type: none"> • Increased illicit and informal production • Increased consumption of low quality beverages • Expansion of the black market • Increased smuggling 	<ul style="list-style-type: none"> • Drives underage drinking underground (those between 18-21 years) • Criminalization of underage drinking (those between 18-21 years)

	<ul style="list-style-type: none"> • Increased tax revenue* • Loss of tax revenue* • Job losses* • Increased inflation 	
Shortcomings	<ul style="list-style-type: none"> • Individual responsibility is not encouraged • Inconsistency with alcohol tax policies in neighboring countries 	<ul style="list-style-type: none"> • Inconsistency between age of majority and legal age of purchase • Inconsistency of legal age across neighboring countries • Incongruity with reality of drinking among young people • Doesn't teach responsible drinking patterns
Obstacles to overcome	<ul style="list-style-type: none"> • Cultural resistance • Inconsistency with international trade agreements (the Custom Union with Russia and Kazakhstan) • Alcohol and entertainment industry opposition 	<ul style="list-style-type: none"> • Lack of enforcement • Drinking culture among young people • Society's acceptance of youth drinking • Lack of viable alternatives to drinking for many young people • Alcohol and entertainment industry opposition
Procedural requirements	<ul style="list-style-type: none"> • New tax rates will need to be adopted by the Council of Ministers and approved by the President 	<ul style="list-style-type: none"> • New comprehensive legislation will need to be developed by several ministries in collaboration • The bill will need to be adopted either by the Parliament or by the President
Recourses for Implementation	<ul style="list-style-type: none"> • the Ministry of Taxes and Duties • the Ministry of the Internal Affairs 	<ul style="list-style-type: none"> • implementation will require multi-sector collaboration: • educators, medical professionals and others to pass information • training, education and awareness building (e.g. through media campaigns) • compliance among retailers and servers • effective enforcement measures (the Ministry of Internal Affairs)

		<ul style="list-style-type: none"> • Community support • Parents and other adults role models
--	--	---

*- evidence is inconsistent.

CONCLUSION AND RECOMMENDATIONS

- 1) Most of the measures to curb alcohol problem in Belarus that are currently in place have scientific evidence of effectiveness. If carefully planned and properly enforced, they have the potential to influence the level of the alcohol consumption and alcohol-related harm. Since there is almost no evidence of the effectiveness of imprisonment for drunk-driving, the government should consider abolishing this policy.
- 2) The analysis of the extent to which the alcohol problem in the society is reviewed in *the State Program of National Actions on the Prevention and Overcoming Heavy Drinking and Alcoholism for 2011-2015* suggests that government does not fully recognize the alcohol problem. The government should broadly evaluate the implications of alcohol consumption in the country, especially in social and economic domains. Evaluation models employed in others countries can be use for these purposes.
- 3) The analysis of effectiveness of the strategies outlined in the Program suggests that the implementation of the Program could influence alcohol consumption and alcohol related harm in the society. At the same time, however, the government should acknowledge that there is no evidence of effectiveness of media and information campaigns on reducing alcohol consumption and alcohol-related harm. The campaigns make sense only when they accompany measures with proven scientific evidence of effectiveness.
- 4) Based on the assessment of the two policies suggested in the State Program - increasing taxation and price of alcoholic beverages and increasing legal purchasing age to 21 years -, increase the price of alcoholic beverages is an appropriate and promising strategy for Belarus for reducing alcohol consumption and alcohol-related harm.
Next issues should be addressed while preparing for implementation of alcohol tax hike:

- Cross-border smuggling from Russia and Ukraine
- Production of home-made alcoholic beverages for sale
- Social marketing campaign to address the negative aspects of the Belarus drinking culture and to build support for the tax increase.

REFERENCES

- A letter of Advice of the Attorney General of Belarus on the Alcohol Problem to the Prime Minister, 2012. Retrieved from <http://prokuratura.gov.by/main.aspx?guid=89931#doc>
- Anderson, P., & Baumberg, B. (2006). *Alcohol in Europe. A public health perspective*. London, UK: Institute of Alcohol Studies.
- Anderson, P., Chisholm, D., & Fuhr, D. C. (2009). Alcohol and global health 2: Effectiveness and cost effectiveness of policies and programs to reduce the harm caused by alcohol. *Alcohol*, 373, 2234-46.
- Babor, T., Caetano, R., Casswell, S., et al. (2010). *Alcohol: no ordinary commodity. Research and public policy. Revised edition*. Oxford (UK): Oxford University Press.
- BELAPAN, 2012. Retrieved from <http://belapan.by/archive/2012/02/08/527817/>.
- Bogdanov, M. (2010). Analiticheskaya zapiska po rezultatam sociologicheskogo issledovaniya na temu: "Problema pyanstva i alkogolizma v molodezhnoi srede." Mogilev: UZ "MOCGE I OZ."
- Bouchery, E. E., Harwood, H. J., Sacks, J. J., Simon, C. J., & Brewer, R. D. (2011). Economic costs of excessive alcohol consumption in the U.S. (2006). *American Journal of Preventive Medicine*, 41(5), 516-24.
- Brennan, A., Purshouse, R., Taylor, K., and Rafia, R. (2008). *Independent review of the effects of pricing and promotion: Part B. Modelling the potential impact of pricing and promotion policies for alcohol in England. Results from the Sheffield Alcohol Policy Model version 2008 (1.1)*. Sheffield (UK): SchARR, University of Sheffield.
- Chasnoit, R. and Petrovich, M. (2010). Garmoniya vzamen zapretov. *Belaruskaya Dumka*, 5, 24-32.
- Crombie, I., Irvine, L., Elliott, L., & Wallace, H. (2007). How do public health policies tackle alcohol-related harm: a review of 12 developed countries. *Alcohol and Alcoholism*, 42(5), 492-499.
- Custom Union Commission, official web site: <http://www.tsouz.ru>.

- Egorchenko, D. (2011). V Belarusy chetvertyi god podryad ne mogut zapretit prodazhu alkogolya licam molozhe 21 goda. Retrived from <http://www.aif.by/ru/news/item/13904-alko.html>
- Fedorovich, V. (2012) Alkogolizaciya I kriminalizaciya naseleniya uspeshno prodolzhaetsy. Retrieved from http://naviny.by/rubrics/society/2012/01/24/ic_articles_116_176604/
- Fell, J., Fisher, D., Voas, R., Tippetts, A. (2007). The relationship of 16 underage drinking laws to reductions in underage drinking drivers in fatal crashes in the United States. *51st Annual Proceedings Association for the Advancement of Automotive Medicine*.
- Gallet, C. (2007). The Demand for Alcohol: A Meta-analysis of Elasticities. *Australian Journal of Agricultural and Resource Economics*, 51, 2, 121-135.
- Habgood, R., S. Casswell, M. Pledger et al. (2001). *Drinking in New Zealand: National surveys comparison 1995 and 2000*. Auckland: Alcohol and Public Health Research Unit, University of Auckland.
- Hibell, B., Guttormsson, U., Ahlstrom, S. et al., (2009). *The 2007 ESPAD report: substance use among students in 35 European countries*. Stockholm: The Swedish Council for Information on Alcohol and Other Drugs.
- Hingson, R. W., Heeren, T. and Winter M. R. (2006). Age at drinking onset and alcohol dependence: Age at onset, duration, and severity. *Archives of Pediatrics and Adolescent Medicine*, 160, 739-746.
- Horlings, E. and Scoggins, A. (2006). *An Ex Ante Assessment of the Economic Impacts of EU Alcohol Policies*. Retrieved from http://www.rand.org/pubs/technical_reports/2006/RAND_TR412.pdf.
- Interfax, 2012. Retrieved from <http://www.interfax.by/news/belarus/106066>.
- International Center for Alcohol Policies (2008). *Policy planning and choice: guide to feasible interventions*. Washington, DC: Authors.
- Keller, A., Frye, L., Bauerle, J., & Turner, J. C. (2009). Legal ages for purchase and consumption of alcohol and heavy drinking among college students in Canada, Europe, and the United States. *Substance Abuse*, 3, 248-52.

- Kenkel, D. (2005). Are alcohol tax hikes fully passed through to prices? Evidence from Alaska. *The American Economic Review*, 95(2), 273-77.
- Kukharevich, E., Palkovskaya, E., Yarkovets, A., Goryainova, T., & Egorova, M. (2011). *Population health in the Republic of Belarus*. Minsk: National Statistical Committee of the Republic of Belarus.
- Leicester, A. (2011). *Alcohol pricing and taxation policies*. London (UK): Institute for Fiscal Studies.
- Maldonado-Molina, M., & Wagenaar, A. (2010) Effects of alcohol taxes on alcohol-related mortality in Florida: time-series analyses from 1969 to 2004. *Alcoholism, Clinical and Experimental Research*, 34(11), 1915-21.
- O'Malley, P. and Wagenaar, A. (1991). Effects of minimum drinking age laws on alcohol use, related behaviors and traffic crash involvement among American youth: 1976–1987. *Journal of Studies on Alcohol*, 52(5), 478–491.
- Landberg, J. (2010). Population drinking and fatal injuries in Eastern Europe: a time-series analysis of six countries. *European Addiction Research*, 16(1), 43-52.
- Metelskaya, M., Antipov, V., Grishenkova, L., & Rogov, Y. (2010). Smertnost ot boleznei, associirovannyh s alcogolnoi intoksikaciei, kak kosvennyi indicator obschestvennogo zdoroviya. *Voprosy Organizacii i Informacizacii Zdravoohraneniy*, 4, 78-83.
- Ramstedt, M. (2007). Population drinking and liver cirrhosis mortality: is there a link in Eastern Europe? *Addiction*, 102(8), 1212-23.
- Razvodovsky, Y. (2010). Contribution of alcohol in accident related mortality in Belarus: a time series approach. *Journal of Injury and Violence Research*, 4(2), 64–70.
- Razvodovsky, Y. (2011a). Alcohol consumption and suicide in Belarus , 1980 – 2005. *Suicidology Online*, 2, 1-7.
- Razvodovsky, Y. (2008a). Noncommercial alcohol in central and eastern Europe. *Noncommercial alcohol in three regions*. (pp. 17–23). Washington, DC: International Center for Alcohol Policies.
- Razvodovsky, Y. (2008b). *Indicators of alcohol-related problems in Belarus*. Grodno: Medical University Press.

- Razvodovsky, Y. (2011b). Alkogolnaya poilitika v Respublike Belarus na sovremennom etape. *Voprosy Organizacii i Informacizacii Zdravoohraneniya*, 3, 38-45.
- Razvodovsky, Y. (2011c). Statistika alkogolnoi smertnosti v Belarusi. *Voprosy Organizacii i Informacizacii Zdravoohraneniya*, 2, 15-20.
- Rehm, J., Mathers, C., Popova, S., Thavorncharoensap, M., Teerawattananon, Y., & Patra, J. (2009). Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders. *The Lancet*, 373, 2223–2233.
- Rehm, J., Room, R., Graham, K., Monteiro, M., Gmel, G., & Sempos, C. T. (2003). The relationship of average volume of alcohol consumption and patterns of drinking to burden of disease: an overview. *Addiction*, 98(9), 1209-28.
- Rehm, J., Room, R., Monteiro, M., Gmel, G., Graham, K., Rehn, N., Sempos, C. T., et al. (2004). *Alcohol Comparative Quantification of Health Risks. Global and Regional Burden of Disease Attributable to Selected Major Risk Factors. Vol. 1. Alcohol* (pp. 959–1109). Geneva: WHO.
- Rehm, J., Taylor, B., & Patra, J. (2006). Volume of alcohol consumption, patterns of drinking and burden of disease in the European region 2002. *Addiction*, 101(8), 1086-95.
- Saylor, D. (2011). Heavy Drinking on College Campuses: No Reason to Change Minimum Legal Drinking Age of 21. *Journal of American College Health*, 59(4), 330-33.
- Simons-Morton, B., Pickett, W., Boyce, W., ter Bogt, T., and Vollebergh, W. (2010). Cross-national comparison of adolescent drinking and cannabis use in the United States, Canada, and the Netherlands. *The International Journal on Drug Policy*, 21(1), 64-9.
- Spoth, R., Greenberg, M., & Turrise, R. (2008). Preventive Interventions Addressing Underage Drinking: State of the Evidence and Steps toward Public Health Impact. *Pediatrics*, 121, S311-36.
- Stickley, A., & Razvodovsky, Y. (2009). Alcohol poisoning in Belarus: a comparison of urban-rural trends, 1990-2005. *Alcohol and Alcoholism*, 44(3), 326-31.
- Toomey, T. L., Nelson, T. F., & Lenk, K. M. (2009). The age-21 minimum legal drinking age: a case study linking past and current debates. *Addiction*, 104(12), 1958-65.
- Uniter. (2011). Obzor rynka alkogolnoi produkci. Retrieved from http://www.mzv.cz/file/703072/Trh_s_alkoholem__Juniter_.pdf.

- Voas, R. and Tippetts, A. (1999). *Relationship of alcohol safety laws to drinking drivers in fatal crashes*. Washington, DC: National Highway Traffic Safety Administration.
- Wagenaar, A. (1993). Research affects public policy: the case of the legal drinking age in the United States. *Addiction*, 88, S 75-81.
- Wagenaar, A., Murray, D., Gehan, J., Wolfson, M., et al. (2000). Communities mobilizing for change on alcohol: outcomes from a randomized community trial. *Journal of Studies on Alcohol*, 61(1), 85-94.
- Wagenaar, a C., & Wolfson, M. (1994). Enforcement of the legal minimum drinking age in the United States. *Journal of Public Health Policy*, 15(1), 37-53.
- Wagenaar, A. , Salois, M. , & Komro, K. (2009). Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies. *Addiction*, 104(2), 179-90.
- Wagenaar, A. , Tobler, A., & Komro, K. (2010). Effects of alcohol tax and price policies on morbidity and mortality: a systematic review. *American Journal of Public Health*, 100(11), 2270-8.
- Wagenaar, A., & Toomey, T. (2002). Effects of minimum drinking age laws: review and analyses of the literature from 1960 to 2000. *Journal of Studies on Alcohol*, 63, S206-25.
- WCIOM, 2011. Retrieved from <http://wciom.ru/index.php?id=459&uid=111563>
- WCIOM, 2011b. Retrieved from <http://wciom.ru/index.php?id=459&uid=112019>).
- World Health Organization (2004). *Global status report: alcohol policy*. Geneva: WHO.
- World Health Organization (2011). *Global status report on alcohol and health*. Geneva: WHO.
- World Health Organization Regional Office for Europe (2009a) *Evidence for the Effectiveness and Cost-effectiveness of Interventions to Reduce Alcohol-related Harm*. Copenhagen: WHO Regional Office for Europe.
- World Health Organization Regional Office for Europe (2009b) *Handbook for action to reduce alcohol-related harm*. Copenhagen: WHO Regional Office for Europe.
- WHO Regional Office for Europe (2010). *European Status Report on Alcohol and Health 2010*. Copenhagen: WHO Regional Office for Europe.

Young, D. (2002). Alcohol taxes and beverage prices. *National Tax Journal*, 1, 57-73.